

# Journal of Indian Academy of Forensic Medicine (JIAFM)

## A Peer-reviewed Journal

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# Journal of Indian Academy of Forensic Medicine (JIAFM)



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*Editor-in-Chief*

*Dr. Mukesh Yadav*

### *From Editor's Desk*

I feel immense pleasure to present before you the second issue of JIAFM 2007. I assure you about the quality of research papers and quality of printing in future issues. Your valuable suggestions are always encouraging me and I heartily welcome for future suggestions. On behalf of Executive Committee of IAFM for the years 2006-2008 I took resolution to further improve the quality and status of our Journal. We always learn from mistakes and try to improve upon these. I am thankful to the advertisers who have provided additional financial resources for improving the quality of this issue.

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## **Editorial**

### **Emergency Medical Care System: A Human Rights Issue**

According to World Bank and a WHO report, more than 1.2 million people die in accidents globally every year, of which 92000 die in India. Four lakh accidents were reported in India in 2004.

The expert group to study the existing system for Emergency Medical Care was constituted by NHRC on **23 April 2003** in the light of the inadequacies highlighted in the Uphar Cinema Tragedy and the ever-increasing number of accidents especially on the road.

The group was asked to look into the following:

- (i) To study the existing system, for emergency medical care in India.
- (ii) To study the existing system for **Emergency Medical Care (Centralized Accidents & Trauma Services)** set up by the Ministry of Health and Family Welfare in the National Capital Territory of Delhi.
- (iii) To suggest appropriate models of Emergency Medical Care which should be developed by different States/Union Territories and their essential components.

The group of experts headed by Dr. P.K. Dave, former Director, All India Institute of Medical Sciences constituted by NHRC to study the existing system for emergency medical care submitted its report to the **Chairperson, Dr. Justice A.S. Anand** in New Delhi on **April 7, 2004**. While pointing out a number of deficiencies in the existing **Emergency Medical Care System (EMCS)** of the country, it has suggested a number of **short-term** and **long-term measures** to address the lacunae. The report will now be sent to the Government.

#### **Short-Term Measures:**

The **recommendations** that have to be **implemented immediately** include:

1. Enunciation of, a National Accident Policy.
2. Establishment of, a central coordinating, facilitating, monitoring and controlling committee for Emergency Medical Services (EMS) under the aegis of Ministry of Health and Family Welfare as advocated in the National Accident Policy.
3. Designating 3-4 districts to Medical Colleges, which will act as referral centers to their respective earmarked districts in each State and UT.
4. Establishment of Centralized Accident and Trauma Services in all districts of all States and various Union Territories along with strengthening infrastructure, pre-hospital care **at all government and private hospitals**.
5. Development of computerized information base at all levels of health care to help in perspective policy planning and networking.
6. Need to establish a National Trauma Registry for data collection and analysis.
7. Information dissemination to all of the existing facilities, legislations, referral system, existing networking, to facilitate EMS health care utilization.
8. States to develop proposals for up-gradation of EMS with organizational infrastructure and financial details for appraisal by Ministry of Health and Family Welfare and Planning Commission.
9. Training in EMS to be organized in the Medical Colleges and other regional areas.
10. The existing expert group constituted by the NHRC will further recommend the infrastructure facilities, equipment, staffing and training at various levels of healthcare delivery viz. primary health centers, sub-district / taluka hospitals, district hospitals, medical colleges and teaching institutions.

### Long-Term Measures:

The measures that need to be taken up in the long-term (5 years) are:

- (i) Implementation of the proposed recommendations of the National Accident Policy.
- (ii) The speed and efficiency are the two most vital considerations for any trauma care services. It would be ideal to set-up a well-equipped and adequately trained staffed trauma center at Regional and National level. All District Hospitals to have specialized multidisciplinary trauma care facilities.
- (iii) Establishment of Emergency Medicine as a specialty.
- (iv) Dedicated communication toll free number to respond for emergency. The access code of such a dedicated number should be such that it is easily remembered by all e.g. 4444 or 9999 and should be common for the entire nation. The interface system should be able to receive multiple calls at any one time and also coordinate a speedy response.
- (v) The **Golden Quadrangular Road Project** presently under progress should have a communication call center, Ambulance equipped and staffed as recommended in the National Accident Policy every 30 Kms. Emergency care centers manned by paramedical staff should be established every 50 kms. All the National Highways should also have the same facilities.
- (vi) Constitution of a committee by the NHRC to monitor the progress of implementation of recommendations at National and State level.

National Highway Authority of India (NHAI) has proposed a multi-pronged strategy on the issue of safety and accident services.

NHAI has developed a system of insurance by which it will foot the Bill for those accident victims who cannot meet their own expenses. The proposal has been cleared by the Finance Ministry and is likely to be implemented soon.

The Ministry, along with the Surface Transport Ministry, intends to build Trauma Care Centres along National Highway. The plan was to provide a **phone booth every five Km, Ambulance Facilities every 50 Km, a Basic Trauma Centre every 100 Km, establish a Specialty Trauma Centre every 300 Km, and a Superspecialty Trauma Centre every 500 Km.**

Mapping of National Highways was on and Ministry identified Government establishments that could be part of the large network on the Golden Quadilateral Route. "We intend to upgrade the existing hospitals where they exist, and where they don't, involve the private sector," Dr. Anbuman said. The project, expected to cost between Rs. 1000-2000/ crore would also involve training of staff of ambulances and hospitals in emergency medicine. It would be implemented in a phased manner.

At present, NHAI has one ambulance for every 50 Km. "The ambulance is often not well-equipped. There is need to provide equipments in the ambulances like: suction apparatus, oxygen cylinders, other resuscitation equipments and trained not only paramedical personnel but also medical officers.

There is need to include Forensic Medicine Experts at the policymaking level so that legal, ethical and human rights aspects of patients could be dealt very well. Since Forensic Medicine experts are dealing with postmortem and other medicolegal work at academic as well as practical level they could be of more help in formulating the policies than any other specialist.

**Mukesh Yadav**  
**Editor-in-Chief**

## Is Attempted Suicide an Offence?

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### Abstract

Life is a stage with one entrance but many exits. Among those, suicide is one exit having a long ancestry. In 1968, the World Health Organization defined suicidal act as "the injury with varying degree of lethal intent" and that suicide may be defined as "a suicidal act with fatal outcome". World Health Organization labeled, suicidal acts with non-fatal outcome as "attempted suicide." Suicide has been an act of condemnation as well as commendation through the ages. The act of suicide is forbidden by all the religions. In recent times, attempted suicide, though a failed act has gained more importance (than the suicide, a successful act) since it is considered as an offence and is punishable under Section 309, IPC. A lot of conflicting opinions have generated on the desirability of retaining or deleting Section 309 of Indian Penal Code because of some contrasting judgments given by our Courts. Article 21 of the Constitution of India is a provision guaranteeing protection of life and personal liberty and by no stretch of the imagination can extinction of life be read to be included in protection of life.

**Key Words:** Suicide, Attempted Suicide, Section 306 & 309 of Indian Penal Code, Legal Anomaly.

### Introduction:

Life is a stage with one entrance but many exits. Among those, suicide is one exit having a long ancestry. The word "Suicide" literally means, "to kill oneself" (Sui-of oneself and Caedere - to kill). [1] In 1968, the WHO defined suicidal act as "the injury with varying degrees of lethal intent" and suicide is defined as "a suicidal act with fatal outcome. [2] But as per definition it is difficult to determine whether a particular death was a suicide since it requires the injuries leading to death to be self-inflicted. This may be obvious in most cases, but in many others it is impossible to ascertain. Legally suicide is defined as "the intentional act of self destruction committed by someone knowing what he is doing and knowing the probable consequences of his action". Suicidal acts with non-fatal outcome are labeled as "attempted suicide" by WHO [2] The "attempt to suicide" terminology is now recommended to be used only to denote events in which there has been a failure of conscious efforts to end life. These are the people who commit to end their life through suicide but some how survive.

Suicide has been an act of condemnation as well as commendation through the ages. The philosopher's approach considering sacredness of life, its quality as well as quantity hinges on the central query - Can a man decide to blow out the flame? Can he choose death over life? People have been killing themselves from the beginning of recorded history. Ramayana and Mahabharata have recorded instances of suicide. When Lord Shri Rama relinquished his life, there was an epidemic of suicide in Ayodhya.

Bhagvad Gita is against self-torture and self-killing. During Vedic and Upanishadic times, apart from "Sati", death from drowning at the confluence of rivers to achieve "Punya" (salvation in the next life), the self destruction for incurable diseases, ascetics undertaking a great journey towards the terminal years of life (Mahaprasthan), were allowed, but suicide in general was penalised with the above exceptions. [2] A verse from the Isavaya Upanishad declares: "He who takes himself (his life) reaches after death, Sunless regions, covered with darkness". The Holy Bible contains no law forbidding man to kill himself, but the taboo that is tagged on to suicide, coupled with denial of a decent burial was a deterrent to self-destruction by suicide. [3] Islam asks man and woman to wait for his/her destiny rather than snatching it from the hands of Allah. If he does not, he will be depicted as an unfaithful wretch. [2] The common belief among Hindus is that a person who commits suicide will not attain "Moksha" and his soul will wander around, haunting and tormenting people.

Attempted suicide, though a failed act has gained more importance (than the suicide which is a successful act) since it is considered as an offence and is punishable under Section 309 IPC. According to this Section, "whoever attempts to commit suicide or any act towards the commission of such offence shall be punished with simple imprisonment for a term which may extend to one year or fine or both.[4] It is because, our legislature makes an offence dependent on proof of intention. Legally, an act is **Intentional** if it exists in idea before it exists in

fact, the idea realizing in itself is the fact because of the desire it is accompanied with.

A lot of conflicting opinions have generated on the desirability of retaining or abolishing section 309 IPC because of some contrasting judgments given by our courts. In 1981, the Delhi High Court (HC) condemned the penal provision as “unworthy of human society” and its Bombay Counterpart, in 1986, held it to be *ultra vires* on the ground that it violates Articles 14 and 21 of Indian Constitution. [3] The Andhra HC, on the contrary held that Section 309 IPC is valid, as it “does not offend” Articles 14 and 21 of the Constitution. [5] In April 1994, a two-judges bench of SC had declared the Section 309 IPC void. They observed, “The right to live can be said to bring in its trial the right not to live a forced life”. However, in March 1996, a five judges constitution bench of the SC setting aside the earlier judgment, held that attempted suicide is an offence under the IPC. So, now the Section 309 IPC continues to be valid. [4] These judgments opened the door for a good debate on whether the offence of attempt to commit suicide under Section 309 IPC should be retained or abolished.

### Discussion:

Ordinary law makes no provision for the situation, which is considered instinctively natural for human beings. If some individuals create some situations, which usually human beings do not create, the Society has a tendency to look down upon them as being uncommon or unnatural and this attitude is reflected in laws. Law presupposes a society of normal individuals with certain general instincts. Self-preservation is the most general instinct of human beings. In fact, the urge to attempt to commit suicide runs contrary to the instinctive urge of the normal individuals who constitute a majority in the society. Those who attempt to commit suicide are a minority. It is the instincts of majority segment of society that give rise to ethics and morality, which lead to uniform norms. So, attempt to commit suicide is against the generally accepted norm. Such general norms usually do not vary from society to society inasmuch as human life is the same in every society. And every civilized society in the world may develop legal norms against breaches of uniform social norms. Viewed in this perspective, individual autonomy can never be granted to the extent of permitting the individual to take away his life. This is because it is unnatural and so against the moral stand points of normal individuals who constitute the society [6] and also it is not correct to say that the individual has complete authority over his body and life. His spouse and children do have claims on his body and life. Even if the person is not interested to keep himself alive, the society,

because of its embedded love for sanctity of life, may have an interest in the body and life of that individual.

The SC in 1994 in Rathinam case, not only declared Section 309 IPC as being violative of Article 21 and thus unconstitutional but also conceded constitutional right to die. In doing so, the Supreme Court seemed to have relied heavily on the Bombay HC decision in Dubal case. The Bombay HC argument was plain: the right to one’s life also includes the right to take it away. But on closer scrutiny, several sub questions of substantial law surface. The right to buy property implies the right to sell also. In the same vein, does the right to one’s life also imply the right to dispose off one’s life? Also, do parents “create” the life of their children? No civilized country would subscribe to the theory that parents have a right to dispose off the life of their children because they have created them. [3] Thus, by declaring attempt to commit suicide a crime, the IPC uphold the dignity of human life because human life is as precious to the State as it is to its holder and the State can not turn a blind eye to a person’s attempt to kill himself.

Another set of people are of the opinion that the Section 309 IPC is cruel and irrational because it provides double punishment for a troubled individual whose deep unhappiness had caused him to try and end his life. It is cruel to inflict additional legal punishment on a person who has already suffered agony and ignominy in his failure to commit suicide. According to this school of thought, suicide attempt is very often a cry for help. The Society owes responsibility towards those who scream out against life because of personal reasons. They need sympathy and psychiatric help rather than criminal prosecution.

The SC judgment of 1996 occasioned unhappiness amongst mental health professionals across the country. Would any court decree that vomiting is a criminal offence? Vomiting is a symptom of an underlying physical illness. In like manner, an attempted suicide or a completed suicide is almost invariably a symptom of underlying psychiatric disorders. Should it then be viewed as an illegal act? Depression is the commonest diagnosis associated with suicidal attempt like other common diagnoses such as alcoholism, drug abuse, Schizophrenia, etc. [7] All these disorders require medical and/or psychological therapy. Mc Naughten’s rule can be invoked in the interpretation of the criminality of an attempted suicide. This rule represented by Section 84 IPC, specify that, “Nothing is an offence which is done by a person who at the time of doing it, by reason of unsoundness of mind, is incapable of knowing the

nature of the act, or that he is doing what is either wrong or contrary to Law". [8] Therefore attempted suicide is not an offence if the person at the time of committing it, by reason of mental illness, did not know what he was doing or what he was doing was either wrong or contrary to Law. And also a mentally ill person or a person experiencing intense psychological distress is not likely to consider legal issues when he contemplates suicide; and, if he does think of the law on the subject, he is likely to take precautions to ensure that his act is successful. Either way, the law on suicide fails to serve as deterrent.

The Supreme Court judgment of 1994 stated that the right to live also implies the right not to live a forced life. [4] In many cases the cause behind desperate shortcut to death is poverty, feeling of burden on the family or of the family. Such people may commit/attempt to commit suicide in order to relieve them of the unbearable burden of life, which may be greater torture than the pain of death. Supporters of this theory ask does the State today have a right to force a person to stay alive, when the state itself cannot provide him means of a decent livelihood?

Persons who attempt suicide therefore require assistance in their physical and psychological life and not punishment by fine and/or imprisonment. Penal deterrents are better suited to criminal act, not acts of distress. Hence the Section 309 IPC deserves to be effaced from the statute book to "humanise our penal laws". In this connection, in 1971, the Law Commission recommended the abolition of Section 309 IPC. The then Government of India accepted the recommendation but could not pass the Bill in the Lok Sabha in 1979, as the elected body was dissolved and the bill elapsed. [2] Some are of the view that if attempt to suicide is not an offence then the section 306 IPC becomes unconstitutional. Section 306 IPC defines abetment of suicide and punishment for the same. But offences defined under both these Sections are distinct offences and Section 306 IPC can survive independent of Section 309 IPC.

What is the legal status of individuals who by virtue of their religion refuse food and fast to death? In India there are innumerable cases wherein religious ascetics fast to death without the State intervening and are not punished though such acts amount to attempt to suicide. For example, in February 1988, an 82 years old Jain ascetic starved himself to death in Sonapat in Haryana. In April 1993, a female Jain monk starved herself to death in Kutch District. In April 1993, Bangalore Police registered a case of

attempted suicide against a Bollywood actress. Cases were similarly registered against some of the 22 youths who attempted self-immolation during the anti Mandal Stir in 1991. [5] Seeing the different State responses to these cases, a simple question leaps up the mind. Why an actress is charged with attempted suicide but not Jain monks starving themselves to death? Does this double standard mean that the State condones a slow suicide but not a quick one?

### Conclusion:

Therefore, it is, however, not to say that the Indian Penal Code is a modern code in every sense of the term. It requires change to meet the aims and aspirations of contemporary society. Ultimately the endeavour should be to evolve a consensual and conceptual model effectively tackling the evils, without sacrificing human rights. Applying technological solutions cannot solve social problems. As long as medicine depends on science and science promises hope, there is always hope for mankind and people who make decision should make them judiciously.

In democracy, law making is a public exercise. Resultantly, a legislative empowerment in contrast to an executive aggrandizement of power cannot occur without public scrutiny. The Constitution, however, does not just require a legislative procedure but the one, which is just fair, reasonable and acceptable to the society at large.

It is said that Suicide is a legal anomaly wherein an attempted act is punishable while an accomplished act is not! Should we, today, in the ever changing trends of the Society continue with and adhere to this anomaly?

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## Is there any Necessity of Preservation of Viscera Even in Cases Where Cause of Death is Already Determined? A Discussion

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### Abstract

During autopsy different viscerae are collected and preserved mainly for chemical examination to ascertain the cause of death. But many a times viscerae is preserved even in cases where cause of death is known. Police and prosecution side often question the merit of preservation of viscerae in such cases because defence lawyer often take this as opportunity to delay the prosecution till the Chemical Examiner's report is available. Most of the time Chemical Examiner's report is much delayed and sometimes West Bengal State Forensic Science Laboratory even refuse to accept the viscerae for chemical examination particularly where cause of death is given in P.M.report.

In N.R.S. Medical College, Kolkata center around 3500 post mortem examinations are being done annually, on requisitions from Kolkata Police [K.P.], West Bengal Police [WBP] and General Railway Police (GRPS). Kolkata Police in almost all their requisitions request to preserve viscera and other medicolegal articles.

An analysis was done on police requisition paper and autopsy report to find out the logical scientific solution.

**Key Words:** W.B. State FSL, Cause of Death, Chemical Examiner, Report, Viscera, Defense Lawyer.

### Introduction:

Main purpose of preservation of viscera is undoubtedly for chemical examination to detect poison. Not only the detection of poison helps to rule out death from several unknown reason but helps to determine the cause of death also. Also it helps to determine the manner of death i.e. suicidal or homicidal or accidental.

But is it necessary to preserve viscera where cause of death is already ascertained and which is due to some other reason than poisoning or in homicidal death from mechanical injury.

Frequently it is argued by police that defence takes this as opportunity to delay the case by demanding the FSL report, which is usually late or never arrives. Because many a times the preserved viscera not at all examined on the ground that cause of death is already determined by autopsy.

But defence demands the C.E' report as viscera was preserved and hence report must be submitted and thus delays, sometimes destroys the merit of that case. Police only blames doctor for delaying or destroying the merit of the case for unnecessarily preserving viscera.

Therefore what is the need of preservation of viscera which will not be examined, misusing lot of man, money, material and mortuary space which is so overburdened in the N.R.S medical college, kolkata center where around 3500 P.M. examination were done annually?

- Naturally certain pertinent question arises,

1. Is it necessary to preserve viscera where cause of death is confirmed?
2. Is there any need to examine viscera for chemical examination where cause as well as manner of death is already determined?
3. Whether chemical examiners are justified in refusing the chemical examination of viscera, which is sought for?
4. Whether police can direct the doctor to preserve viscera in all cases they like?
5. Whether police & prosecution are justifiably blaming doctor for viscera preservation?
6. Lastly, Very important question is whether doctor can take the decision when and what to be preserved and for how long?

### Material and Method:

Requisition papers for Post mortem examination from different police station were carefully examined and then also with the findings and opinion of autopsy.

### Observation:

In our N.R.S. Medical College, Kolkata Center more than 3500cases of post mortem examination were done in the year 2006.All those cases brought from different authority like Kolkata Police [K.P], West Bengal Police [WBP], General Railway Police [GRPS]. Main Bulk of cases from K.P & GRPS.

It is noticed that almost all of K.P inquest request to preserve all medicolegal items even in cases of

death of passengers of an automobile in road traffic accident cases. [Photocopy-1 & 2]

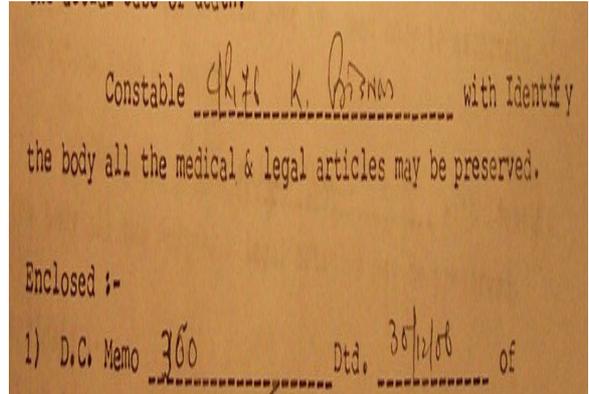
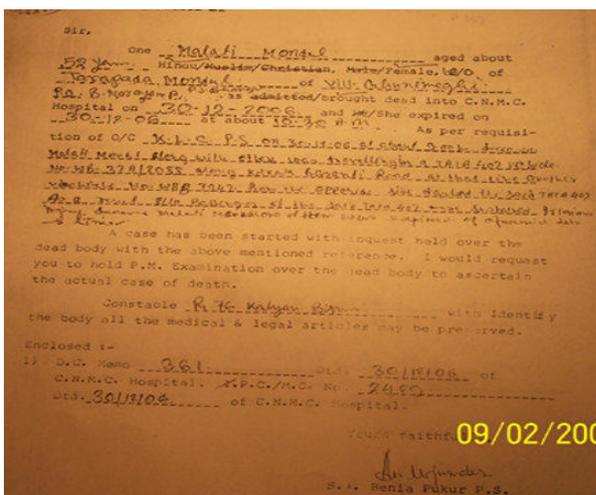
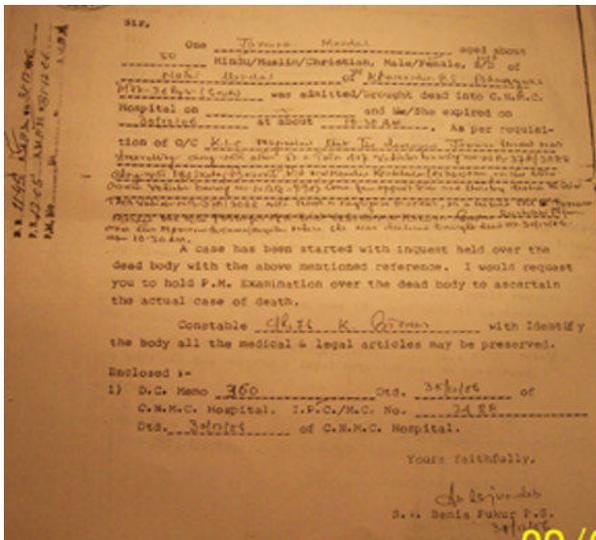
Only in some cases of GRP & WBP there are mentions of viscera preservation, not as a routine printed instruction.

Nowhere anybody mention how long they need to be preserved and for what purpose.

**Discussion:**

Legally doctor cannot refuse to collect medicolegal items if police requires those as evidence or for purpose of investigation therefore doctors do preserve viscera if that is asked by police, but Unless doctors know the purpose, it is difficult for doctors to decide which viscera in what method to be collected and preserved.

**Photo-1 [photocopy of two inquests]**



**Photo-2 [highlighted part of above two inquests]**

Therefore if any body is to blame for unnecessary preservation of viscera it is the police themselves as they indiscriminately request doctor to collect and preserve viscera without any definite reason or purpose whether it is for chemical examination or for serological or for histological or biochemical purpose without any mention of time period so naturally it is not possible to preserve all material for unknown purpose or for indefinite period, in such situation what a doctor can do is-- do preserve common viscerae for common purpose i.e chemical examination. Doctors can no way be blamed for unnecessary preservation of viscera in such cases. Preservation of viscera for chemical examination may be useful to determine the manner of death in some cases.e.g,

Hanging cases generally regarded as suicidal but detection of high doses of sedative or intoxicating drugs or poison may prove it to be homicidal drowning cases though regarded usually accidental high doses of poison in the stomach and blood may be proved as homicidal, so also in cases of road traffic injury, though cause of death is due to injury but presence of sedative, narcotic or alcohol in high doses may prove this a case of negligence's in the part of victim also.

Even in cases where manner is homicidal, detection of intoxicating agent's alcohol in the body of victim may be indicative of victim's excitation, agitated quarrelling behavior, which might have provoked the assault, or attack that lead to death and hence may not be murder.

Hence it is clear that chemical examination still may have value even in cases where cause and manner of death already determined during autopsy but in these cases doctors decision in selection of cases is important as not every such cases is medicolegally significant.

Doctor's duty is to give scientific opinion about a case not to defend blindly or give bias opinion against a person. Therefore defence should also get

the benefit of truth from scientific observations to prove an alleged accused to be innocent.

So it is needless to be mentioned that chemical examiner can not refuse the examination of viscera even though the cause of death or even manner is also already given in the post mortem report.

Though Viscera should be preserved:

1. In all unidentified cases
2. Where cause of death & manner of death is unknown
3. In all homicidal cases
4. Preferably in suicidal and RTA cases.
5. All death in non-institutional abortion cases.
6. Above all in cases where police wishes those to be preserved.

Autopsy surgeon should have the advantage of taking decisions about whether to preserve viscera, if it be necessary to preserve any viscera then what viscera to be preserved and for what purpose in which method, there by not only limiting the lot of misuse of man material, space and time but also helps in rapid trial, putting an end to blaming doctors for inept handling of the case causing delay in trial process.

It is scientifically desirable that requisition or inquest requesting postmortem examination should be with the note:

"All necessary medico legal items may be preserved if deemed necessary". Rather than a blanket printed request "all medicolegal items may be preserved" in all cases irrespective of requirement or merit, particularly in cases where in doctor's opinion chemical examination is unnecessary because that would reveal no further information e.g.,

1. Late cause of death in any unnatural deaths e.g. burn, drowning, RAT and homicidal cases from mechanical injury.
2. All delayed death where patient was fully conscious for sometime before death and was in a position of giving dying declaration or dying deposition.
3. In cases of lightning death.
4. Injury cases those died in hospital after days in the hospital bed but cause of death is natural disease and injury was caused due to disease e.g.. Fracture neck femur but

cause of death is due to intracerebral hematoma with diseased hypertrophied heart.

Thus unnecessary preservation of many viscera can be avoided. There should be definite and uniform rule regarding the time period of preservation particularly in cases where police requests preservation only for future references [that means in future any dispute or foul play if come to light.]

### Conclusion:

- Chemical examiner cannot refuse to examine viscerae if sent by the police or doctor even if cause & manner of death is determined.
- Police should not give blanket printed request "all medico legal items be preserved" rather "all necessary medico legal items be preserved if deemed necessary"  
Doctor should have a liberty to take decision in certain cases in specific situation regarding utility of preservation.
- Viscera if preserved on police request doctors cannot be blamed any way for any delay or difficulty caused thereof.
- Viscera should be kept preserved in mortuary only for max. 3 months and
- Where police suspect no foul play viscera should be kept only for 1 month then should be destroyed.
- *Scalp hair, nail, long bone may be kept for much longer time even in police custody.*

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## Electrocution: A Six-Year Study of Electrical Fatalities

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### Abstract

A six-year study, from January 2001 to December 2006, was undertaken in an attempt to study the pattern of electrical injuries, the cause of death, manner of death and the importance of histopathological examination. The study was comprised of 86 cases brought with history of electrocution, consisting of 69 men and 17 women. Their age ranged from [3] year to [65] year. We had found 97.67% cases of accidental death and 2.32% cases of homicides. Accidental death was more common in age group 21 to 30 years. Of all cases, 45.34% cases were of electric contact, 31.39% cases were of contact and heat and 9.30% cases were of flash burns. In [6] cases no electric mark could be identified. With reference to occupation, 20.93% of deaths occurred in labor class. Considering the histopathological changes, nuclear streaming, dermo-epidermal separation and coagulative necrosis were amongst the commonest lesions.

**Key Words:** Electrocution, Electric Burns, Joule Burns.

### Introduction:

Electricity means power, energy and rhythm for today's life, without electricity existence of human life seems difficult, but it has also capacity to make life stand still culminating in to death, the black side. Nevertheless, the fatalities caused by electricity are a preventable form of injuries still, the toll continues. Unfortunately in developing countries like India where awareness is less and electric equipment/instruments are not used as per standards laid down and cheap alternatives are easily available at lower cost, costing the lives, the death due to electrocution heaps up.

Most of the times, the forensic pathologist is able to diagnose the electric injuries when typical marks are produced. However, at times he may face difficulty and in such situations laboratory and circumstantial evidence are important. Moreover, in India most of the reliance is placed on medical jurist's opinion where he has to use available resources to form an opinion. This study was undertaken in an attempt to study the pattern of electric injuries, the cause of death, the manner of death and the importance of histopathological findings in electrocution cases.

### Method:

The present study was carried out at Govt. Medical College, Nagpur during January 2001 to December 2006. All the cases of electric shock reported have been evaluated. A standard proforma was designed to ensure consistency for the whole sample. The format includes age, sex, place of death, occupation,

medical attention received, cause and manner of death, consumption of intoxicating substance and histopathological findings.

### Observation:

A total of 86 cases were studied, brought with history of electrocution, out of which 69 were male and 17 were females and their age ranged from [3] year to 65 year. Age wise distribution is as per table No.1. Of the deaths, 66 cases were due to electrical injuries, [8] deaths due to septicemia, 5 deaths were due to head injury and one death due to head and chest injury. With reference to the electric injury, the injury with electric contact alone was seen in 39 cases (45.34%), contact and heat in 27 cases (31.39%) and flash burns in 8 cases (9.30%). As far as flash burns were considered, the burn percentage varied from 30% to 66% with mean 47.37%. In [6] cases no electric marks were found.

As with the manner of death, we had found 84 (97.67%) cases of accidental death comprising 69 (80.23%) males and 15 (17.44%) females and [2] (2.32%) cases of homicides, both were females and no case of suicide. Comparing with the age group (Table No.2), accidental death was more common in age group 21 to 30 year and least in age group 61 to 70 year (one case). In the present study, 43 (50%) deaths occurred at work place consisting of 42 male and 1 woman; where as 43 (50%) deaths occurred at home, comprising 27 males and 16 females. With reference to the occupation (Table No.3) it was noticed that maximum number (18 deaths, 20.93%)

of death occurred in labor class followed by electricians (15 deaths, 17.44%) and least in the business community. Reviving with the medical attention received, 15 persons were hospitalized whereas 71 individuals died on the spot. In [6] cases no electric mark could be identified.

Analyzing the fatalities with intoxicating substance use, one case was found to have consumed alcohol (blood 90-mg%) that had sustained injury while repairing electric socket at home. Comparing single verses multiple lesions; it was noticed that single marks were present in 30 cases and multiple marks in 36 cases. The hands were involved in 43 persons (Photograph no. 1), right hand in 24 and left hand in 19 cases; in none of the case both hands were involved except in cases of flash burns. Of the uncommon site, hard palate and tongue was involved in one case. Out of 66 cases, only [6] cases exhibit exit wound in form of lacerated wound of which [5] lesions were located at foot and ankle and one at right gluteal region.

In 47 cases histopathology samples were preserved out of which 41 (87.23%) samples were suggestive of electric injury. Of the 41 cases, the lesions mostly found were (Table No. 4) nuclear streaming (Photograph no.2), dermo-epidermal separation with vacuolation (Photograph no. 3) and coagulative necrosis. Moreover, mostly more than one type of lesion was noted.

### Discussion:

Although the commercial use of electricity as a source of power began in 1849, death from this origin was not reported until 1879. The subsequent widespread utilization of electrical power has been associated with a rapid increase of both fatal and non-fatal injury[8]. In India, death occurs mostly at voltage between 220-240 volts alternative current[11], however, death due to lower voltage had also been reported [3,5].

As expected, male accounted for the greatest number of death (80.23%). The highest fatality was in the age group of 21-30 years (30.04%) followed by 31-40 year group (29.06%); the addition of both age groups goes up to 56 cases. Means 65.11% people in the age group are vulnerable. The reason can be attributed to the fact that the age at which one earns for livelihood whereas at extreme ages, the fatality was quite rare.

In this study no suicide case was recorded, however, two cases of homicides were present and both were female. Out of which one was newly married nine-month pregnant woman in which a bare electric wire was tied around her left index finger. Subsequent investigation revealed that it was a dowry death; the heinous practice commonly prevails in India. In the other case, a husband killed

a 38-year female by putting a male plug-pin inside the oral cavity while she was in sleep suspecting her infidelity. The analysis of medical literature confirms the rarity of suicide or homicide by electrocution [4,7,10]. In this study the majority of the fatalities are the result of accidental contact with electricity normally at domestic supply.

Many electrocutions occur at home [9]. Analyzing of the occurrence of place of incident, it reveals that equal amount of mortality noted both at home front and at work place. However, at work place again male dominates the scene comprising 97.67% deaths. Moreover, comparing with work place, the death rate of females at domestic front appears to be more in this study (37.20%) with reference to male (62.79%). Underestimation of the danger of live circuits and carelessness play a part in work place incidents where as ignorance, faulty domestic appliances, frayed or broken flex of electric cables, improper earthing accounts for many of the domestic accidents [7].

The production of electrical injury depends on voltage, amount of current flow, the area of the contact and duration of contact. An electrical burn occurs only if the temperature of the skin is raised enough for a sufficiently long period to produce damage<sup>9</sup>. On the other hand, a glancing contact or fall against conductor results in break in the circuit; in the cases of high-tension supplies the victim is usually repelled violently. The fatal injuries may be then due to fall [7]. We had noted contact injuries in 45.34% of cases whereas contact and heat in 31.39 % cases. Nevertheless there can be enough current to make it difficult for a person to remove his body parts[1]. The flash burn varies from 30 to 66%. Davis cited the burn area ranging from 10.5 to 40% with mean 20.37% in four cases, however our finding vary having mean burn to be 47.37% in [8] cases. All these burns were superficial burns in contrast to findings of Davis where he had noticed 49% of patient with superficial burns and 8% patients with deep burns.

An arc produces considerably more burn than a contact that readily transmits the current and the greater the resistance offered by the individual tissue, the greater the damage[8]. Only 17.44% persons can be reached to hospital, means that they were alive for some time whereas 82.55% person died on the spot. It is well known that the electric current is particularly more dangerous when it uses one of the circuits involving the heart muscle and in this study hands were involved in 43 cases[7, 5].

In [6] cases no electric burn was found. In all these cases the victims were in contact with water. Unlike dry skin, wet skin does not offer resistance to the

passage of electric current, thus producing no visible electric burn mark, at the site of contact.

One person was found to have consumed alcohol. It is well known that consumption of alcohol and cosequent intoxication had adverse effects, in form of motor incoordination, increased reaction time and improper judgement[6].

The pathognomonic features of electrocution are the electric marks and joule burn when low or medium-voltage current is involved. Electric marks are not always obvious especially on the hands of manual workers. Proof of an electric mark is obtained by histological and histochemical examination[7]. In this context, we had found that histological examination could be an important aid in diagnosis of electrocution, as observed in 87.23% of cases; where the findings were suggestive of electrical injuries. Of these changes, the most common findings were nucleus streaming (48.78%), dermo-epidermal junction separation (48.78%) and coagulative necrosis (36.58%). Electrical injuries frequently represent high temperature burns and this produces characteristic findings of severe thermal denaturation of collagen causing it to stain blue with hematoxylin. The epidermis is often separated and elevated with micro-blisters within the squamous epithelium as well as in the horny layer. Nuclei of epidermal cell at the site of an electrical burn frequently show stretching and narrowing of the contour to produce a palisade- type of appearance. This change is often referred to as streaming of the nuclei[9]. However, Schaffner (1965), who had found similar appearances were caused by cold observed elongation of the cells in the stratum germinatorum and stratum basalis[7]. Moreover, presence of associated features can rule out the possibility expressed by Schaffner.

**Conclusion:**

Though fatalities caused by electricity are preventable, still deaths due to electrocution are on rise. In the present study, we had noted that majority of fatalities (97.67%) are accidental in nature whereas homicide accounted for small number (2.32%) of cases. Moreover, accidental deaths were more common in young age (35.71%) and men were found to be more vulnerable. In 45.34 % of deaths, electric contact was noted, in 31.39% contact and heat was noted. 9.30 % of cases had flash burns and in [6] cases no electric marks were found. From the present study we conclude that histological examination offers an important aid in diagnosis of electrical injuries.

**Table No.2**  
**(Showing incidence in various age group in accidental cases)**

Year	Male	Female	Total	%
0--10	01	01	02	2.38
11--20	10	03	13	15.47
21--30	25	05	30	35.71
31--40	20	04	24	28.57
41--50	10	01	11	13.09
51--60	02	01	03	3.57
61--70	01	00	01	1.19
Total	69	15	84	

**Table No.3**  
**(Showing occupation and number of cases)**

Occupation	Cases	%
Business	03	3.48
Electrician	15	17.44
Farmer	12	13.95
House wife	09	10.46
Laborer	18	20.93
None	11	12.79
Service	10	11.62
Student	08	9.30
Total	86	

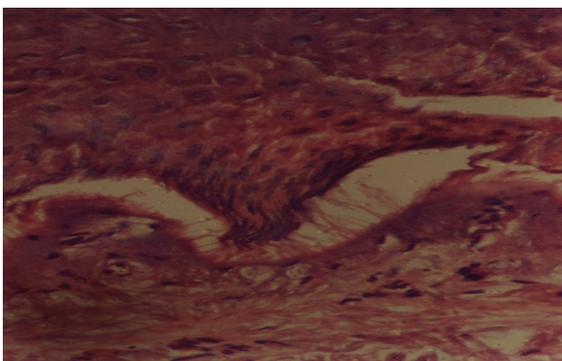
**Table No.4**  
**(Showing histopathological findings and percentage of cases)**

Findings	%
Degeneration of collagen in dermis with coagulative necrosis	36.58
Degenerative changes in keratin layer	2.43
Dermo-epidermal separation	48.78
Hyperkeratosis	9.75
Microvesicle formation	4.87
Nucleus streaming	48.78
Pyknoses of nuclei	17.07

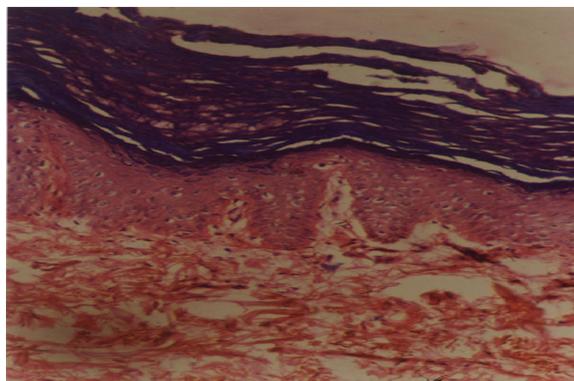
**Photograph No. 1:  
Showing joule burn with crater formation.**



**Showing separation of epidermis and dermis with palisading of nuclei in stratum basalis (H & E, 20 X).**



**Photograph No. 3:  
Showing vacuolation in the epidermis  
(H & E, 100 X).**



**Table No.1  
(Showing age and sex wise distribution)**

Year	Male	%	Female	%	Total	%
0--10	01	1.44	01	5.88	02	2.32
11--20	10	14.49	03	17.64	13	15.11
21--30	25	36.23	06	35.29	31	36.04
31--40	20	28.98	05	29.41	25	29.06
41--50	10	14.49	01	5.88	11	12.79
51--60	02	2.89	01	5.88	03	3.48
61--70	01	1.44	00	00	01	1.16
Total	69		17		86	

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## Life imprisonment: meaning and interpretations of law

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### Abstract

The origin of criminal jurisprudence in India can be traced back to 3102 BC from the time of Manu. There was no criminal law in uncivilized society. Every man was liable to be attacked in his person or property at any time by any one. The person attacked either succumbed or over-powered his opponent. "A tooth for tooth, an eye for eye, a life for life" was the forerunner of criminal justice. With the advancement of civilization, the aggrieved person agreed to accept compensation, instead of killing his adversary. In Western jurisprudence, the real notion of crime percolated from the Roman law. In modern times, concept of criminal law is revolutionized.

This paper deals with different types of punishments described by the law in India. Meaning and interpretation of 'life imprisonment' is discussed in detail to clear the confusing literature reported in the textbooks of Forensic Medicine in India. The Indian Penal Code, The Code of Criminal Procedure and decisions of High Courts and Supreme Court of India are reviewed to make it more authenticated.

**Key Words:** Life Imprisonment, Indian Penal Code, Code of Criminal Procedure, Legal Procedure, Forensic Medicine.

### Introduction:

Modern trends in the field of 'penology' are reflected in the object of punishment in the scheme of modern social defense is correction of the wrongdoer and not wrecking gratuitous punitive vengeance on the criminal whose so called criminal act, in many cases, may be mere manifestation of a deep-rooted psycho-social maladjustment for which society itself may be responsible in a number of ways.

The law according to the degree of seriousness of crime has prescribed various punishments. Topic of punishment taught to medical students in the Forensic Medicine. Most of the textbooks on the subject by Indian authors included this topic under the chapter 'Legal Procedures'. Some Indian authors in their book mention duration of 'life imprisonment' as **twenty years imprisonment [1]** and some as **fourteen years [2]** and others used the term **'imprisonment for life without describing any duration.** [3] It creates confusion among medical students while giving answers to this question in viva voce, objective types or in descriptive type questions during examination or in general public discussion.

Section 53 of the Indian Penal Code (IPC) reads as: The punishments to which offenders are liable under the provisions of this Code are:

**First:** Death;

**Second:** Imprisonment for life;

**Third:** [Repealed by Act XVII of 1949]

**Fourth:** Imprisonment, which is of two descriptions, namely:

1. Rigorous, i.e., with hard labour;
2. Simple;

**Fifth:** Forfeiture of property;

**Sixthly:** Fine.

To the five kinds of punishment in the section, two more were added by subsequent amendments, viz., whipping (now abolished) and detention in reformatories.

The literature which causes confusion among medical fraternity is related to Second and Fourth category of punishments i.e. **'Imprisonment for life'** and **'Imprisonment'**. Imprisonment for life is now substituted for transportation. "Imprisonment for life" in the Code means **"rigorous imprisonment for life"** and not "simple imprisonment for life". [4]

While 'imprisonment' is of two kinds: (a) rigorous imprisonment and (b) simple imprisonment. In the case of rigorous imprisonment the offender is put to hard labour such as grinding corn, digging earth, drawing water, cutting fire-wood, bowing wool, etc. in the case of simple imprisonment the offender is confined to jail and is not put to any kind of work.

The **maximum imprisonment that can be awarded for an offence is fourteen years** (Section 57, IPC). The lowest term actually named for a given offence is twenty-four hours (Section 510, IPC), but the **minimum is unlimited**. Sections 28, 29, 30 31 CrPC, also mentions about the quantum of punishment and powers of the Court to award such punishments. Section 31 (2) (a) CrPC mentions, "In no case shall such person be sentenced to imprisonment for a longer period than fourteen years. [5]

**Detention during Trial:** every confinement of a person and every restraint of the liberty of a free

man is imprisonment. Thus, "imprisonment" would include under-trial detention. "Under-trial detention of a prisoner is undoubtedly an imprisonment". [6]

**Section 53A, IPC** repealed the term "transportation for life" with the "imprisonment for life". [7]

**Section 55 IPC** deals with **commutation of sentence of imprisonment for life**. It reads as 'in every case in which sentence of imprisonment for life shall have been passed, the appropriate Government may, without the consent of the offender, **commute the punishment for imprisonment of either description for a term not exceeding fourteen year**.

Under this section it is not within the power of the Court to direct that the accused shall not be released from jail unless he has undergone a minimum period of 25 year's imprisonment. Such a direction is illegal as it impinges on the powers of the appropriate Government under SS. 432 and 433 Cr PC, to remit or not to remit a part of the sentence. [8] In the absence of an order under Section 55 IPC, or Section 433(b) Cr PC, a life convict cannot be released even after expiry of 14 years, for a sentence of **life imprisonment means rigorous imprisonment for the rest of convict's life**. [9]

In another case [10] the court also emphasized that **imprisonment for life means imprisonment for the full span of life**.

**Section 57 IPC** deals with calculation of fraction of terms of punishment, which **read as "in calculating fractions of terms of punishment, imprisonment for life shall be reckoned as equivalent to imprisonment for twenty years"**.

Section 57, IPC, is limited in its scope and application as this section has to be used only for the purpose of calculating fractions of terms of punishment and for no other purpose. Therefore, it cannot be interpreted to mean that an imprisonment for life means imprisonment for 20 years. It does not become imprisonment for 20 years for all purposes. No automatic acquittal on completion of 20 years. [11] The accused has therefore no right to be released after a period of 20 years. The **remissions** granted under the rules made under the **Prison Act** or under the **Jail Manual** are merely administrative orders of the appropriate Government and fall exclusively within the discretion of the Government under Section 432 Cr PC.

The legal position is that if a person is sentenced to imprisonment for life, he may be detained in prison for life. The Court cannot interfere on the ground of earning of remission. [12]

**Section 433, Cr PC** deals with power to commute sentence, it reads "The appropriate Government may, without the consent of the person sentenced,

commute: (a) a sentence of death, for any other punishment provided by the IPC;

(b) **A sentence of imprisonment for life, for imprisonment for a term not exceeding fourteen years or for fine;**

(c) A sentence of rigorous imprisonment, for simple imprisonment for any term to which that person might have sentenced, or for fine;

(d) A sentence of simple imprisonment, for fine".

Unless an order under clause (b) is issued, a convict cannot be released even after the expiry of 14 years because imprisonment for life means imprisonment for life and a specific order under clause (b) is necessary to commute it to imprisonment for 14 years. [9]

Government has no power to commute sentence of imprisonment for life to a term less than 14 years. The power has nothing to do with the power of remission envisaged by section 432 Cr PC. [13]

Supreme Court has held that imprisonment for life awarded after January 1, 1956 means rigorous imprisonment. [14]

General Amnesty, Mercy Jurisdiction, Power of Clemency on compassionate ground to be considered by the Executive Government not by the Court. The Supreme Court has held that the right to exercise power under the section (433CrPC) is vested only in the Government and has to be exercised by the Government and not by the Court. [15] The President has the power in an appropriate case to commute any sentence. The necessity or the justification for exercising that power has therefore to be judged from case to case. [16]

**Restriction on Powers of Remission or Commutation in Certain Cases:** Section 433A Cr PC inserted in 1978 [17], which came into effect w.e.f. December 18, 1978. The object of the section is to prescribe minimum imprisonment for 14 years for those who are convicted of an offence for which death is one of the punishments provided by law or where a sentence of death imposed on a person has been commuted under Section 433 into one of imprisonment for life. The *non obstante* clause makes it clear that such minimum imprisonment is notwithstanding any thing contained in Section 433 Cr PC which means that the power to suspend or remit sentence under that section **cannot be exercised** so as to reduce the imprisonment of a person convicted of such an offence or whose death sentence has been commuted **to life imprisonment for less than 14 years**. The government will not, except for **weighty reasons**, reduce or commute the sentence under Section 433A Cr PC in the case of very serious offences, for example, where the appellant was

charged with murder of a young boy. [18] The section is not retrospective and where life imprisonment was given on conviction prior to December 18, 1978, Section 433A was held to be not applicable. [19] Where in a case governed by Section 433A, the convicts had not completed their detention for full 14 years, they could not claim a direction to the State for their **premature release** on the basis of pre-conviction detentions and remissions earned by them. [20]

#### **Release on Probation, Parole or License:**

Where the State Government refused to release a life convict after undergoing **16 years of imprisonment, on probation** under Section 2 [21], and rejected his **Form A** for **premature release** on the ground that the District Magistrate, Superintendent of Police and the Probation Board did not recommend his release, the High Court set aside order, directed him to be released on the basis of the report of the Probation Officer and **affidavits of his wife and son and reliability and standing of his proposed guardian**. [22] A life convict applied for his release on probation. [25] The State Government rejected the application even after the recommendation of the Probation Board. The **main ground of rejection** was that the convict had undergone only eleven year's imprisonment including remission, so in view of Section 433A Cr PC, he was not entitled to be released. The High Court held that a person so released on license [21] remained under deemed custody, so section 433A is not attracted. The Government was directed to decide the petitioner's case for release on license afresh on merits. [24] It has been held that it could not be said that **parole period** was not to be counted for the actual period of 14 years imprisonment as release on parole is only a licensed enlargement on certain condition, violation of which makes him liable to be rearrested. [25] The Kerala High Court has held that in counting the period of fourteen years, the prisoner is not entitled to have the remitted period included therein. [26]

#### **Summary and Conclusions:**

Position is quite clear the 'imprisonment for life' means imprisonment till the end of life in the prison. Various sections dealing with commutation, remission or suspension of sentences by the appropriate Government has mentioned of fourteen years or twenty years for calculation of fraction of

terms only. Life imprisonment is not equivalent to imprisonment for fourteen years or for twenty years. [27]

'Imprisonment' and 'Imprisonment for life' are two separate categories of punishments prescribed by the law. Imprisonment for life is always with rigorous imprisonment. The maximum imprisonment that can be awarded for an offence is fourteen years not twenty years (Section 57, IPC). All the authors are requested to edit literature in future editions of their textbook on Forensic Medicine.

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## **Gagging: Accidental, Suicidal or Religious Sacrifice?**

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### **Abstract**

Gagging involves the obstruction across the mouth or within it. Homicidal gagging especially for infants and disabled is a known entity. Accidental cases are documented for mentally ill and young children. Suicides are rarely reported. Here, we report a case where an apparently healthy, intoxicated, elderly male died of gagging in suspicious circumstances raising doubts about an accidental or suicidal nature of death.

**Key Words:** Gagging; accidental gagging; religion related deaths.

### **Introduction:**

Mechanical obstruction of oral cavity is termed as gagging. It is usually resorted to prevent the victim from shouting for help & death is usually not intended. At times, it may be homicidal, particularly when victims are infants or in individuals incapacitated by alcohol or drugs, old, infirm etc.[1] Cases of suicides by this means are rarely reported. Whatever may be the situation; initially the gag only blocks the mouth and permits air entry through nostrils. Later the gag becomes progressively soaked with saliva &/or mucus, becomes impervious and gets sucked in with inspiratory gasps. Finally it obstructs the nasopharynx leading to complete obstruction of airways & may cause unforeseen death. [2, 3] The sequence of physiological events is bradycardia, decrease in respiration with agonal gasps with eventual cessation of respiration, slowing and finally flattening of EEG. [4]

Cases of homicide & suicide by toilet paper being thrust into mouth and aerodigestive tract have been reported in mentally ill. [5, 6, 7] Here, a case is presented, wherein an apparently healthy, intoxicated, old male died of gagging in his house under suspicious circumstances. The details of case & associated situation added a religious flavour, and are discussed.

### **Case Report:**

As per the information furnished by the police, it was alleged that a three days religious ceremony was being performed in deceased's house. During which the deceased consumed some intoxicating substance and pieces of papers in night. After some time, suddenly, he fell down and appeared to have slept in the varandah. The family members took no care, as they were busy with ceremony. He was found dead next morning.

### **External Examination:**

A 65-year-old male, moderately built and nourished, having dark complexion. Body was cold. Rigor mortis was present in lower limbs. Postmortem lividity was present at the back of the body and

fixed. Face and abdomen were bloated. Bloody discharge was present at mouth & nostrils. Conjunctivae were congested. Fingernails were bluish in colour.

### **External injuries:**

1. An abrasion, measuring 2 x 1 cm, present on the left side of chin.
2. A contusion, measuring 3 x 2 cm, present on the front of left knee.

No other external injuries were present anywhere on the body.

### **Internal Examination:**

All the internal organs were intact and showed putrefactive colour changes. Brain was oedematous. Pleural adhesions were present on the right side. Heart was healthy and coronaries showed narrow but patent lumen. Aorta showed moderate degree of atheromatous changes. Larynx & trachea contained partially digested rice particles (agonal artefact).

Oral cavity was stuffed with multiple pieces of paper mixed with blood and saliva (in form of a bolus) with some religious rhymes written on them. (Figs. 1 & 2) No injuries were present in the oral cavity and lips. Oesophagus and stomach contained partially digested rice particles with some abnormal odour. Mucosa was pale. Liver was enlarged & cut section appeared yellowish.

### **Investigations:**

Histopathology of liver showed alcoholic fatty changes.

Forensic Science Laboratory report showed presence of 56.35% alcohol in viscera and blood.

**Opinion as to cause of death:** Obstruction of Nasopharynx.



**Fig. No.1**  
**Bolus of Papers recovered from Oral Cavity.**



**Fig. No. 2**  
**Religious Rhymes written on papers.**

**Discussion:**

In gagging the subject is unable either to breathe adequately or to swallow effectively, and he goes on to die from a combination of respiratory embarrassment & inability to dispose of his oral secretions either by swallowing or expectorating. In such cases, typical asphyxial signs may or may not be present as it depends upon the struggle to breathe. [1]

In the present case, a bolus of paper (with religious rhymes written) was found in mouth & nasopharynx

of the deceased. Absence of oral and restrictive injuries in a healthy male ruled out homicidal attempts. Histopathology and chemical analysis reports suggested that deceased was a chronic alcoholic & was intoxicated at the time of death. Intoxication might have suppressed the cough reflex, which prevented the bolus from being coughed out. The minor bodily injuries can be explained by the accidental fall in intoxicated state. Thus, the diagnosis of accidental gagging was made. The typical asphyxial signs were not appreciated in the present case due to the dark complexion of the deceased and the onset of putrefactive changes. However, it is the discovery of gag obstructing the airways that makes the diagnosis and not the alleged signs of asphyxia. [4]

Diagnosis was simple on autopsy table but once the oral contents were examined & circumstances of death studied, the doubts arose. The event took place during a three days religious fest in deceased house. The papers stuffed contained religious rhymes. Even after the deceased fell down unconscious he was not medically treated and prayers continued. Thus, whether it was accidental death, suicidal attempt or religious sacrifice the situation remained clouded.

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## Current Scenario of Forensic Medicine in India

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### Abstract

The subject of Forensic Medicine provides solutions to some of the most urgent concerns in our society, and focuses on the areas in which medicine and human behaviour interface with the law and acts as a clinical investigator providing a vital liaison between the investigative process and court of law. Till date, no importance has been given for the upliftment of this subject. At many places, the department remains on the most dirtiest and neglected part of the college. In this paper, some problems are highlighted and suggestions have been given for saving the future of this important subject in our country.

**Key Word:** Forensic Medicine, Court of Law, Medical Council of India, Mortuary Complex.

### Introduction:

Rapid modernization and exponential sophistication have taken place over the last century in the field of medical sciences. The concept of health of the population from "womb to tomb" in the community health care clearly indicates that in a health care set up, a doctor's duty is not only caring for the living but also to dead. [1] As medicolegal work is the backbone of emergency in hospital and trauma care centers, it is neglected in all spheres (teaching and practicing stage). Without proper medicolegal work, justice to the victim is misguided and where there is possibility of the justice is misguided, its better that the justice is denied.

Since the inception of Forensic medicine subject in medical colleges in the early 1980's, the deterioration has been going on till date. In comparison with Medicine and Surgery, Forensic Medicine being the young subject, it has been given a step motherly treatment regarding its development and promotion despite being one of the most important bridges between Medicine and Law.

In early days, Civil Surgeons and Pathologists except at few places usually taught the subject. There was no readily available specialist of the subject at that time and also no separate department existed in majority of the colleges in India. The departments were made hurriedly without taking into consideration about proper infrastructure, staff and equipments.

In majority of the Medical Colleges, the department of Forensic Medicine has no proper rooms for staff and basic necessities. Some of the departments in various medical colleges have become as if a

historical monument, which have no caretaker and present a deserted look.

Presently mortuaries dispel the atmosphere of dislike, fear and hatred prevailing in majority of the so-called postmortem buildings in major part of the country. The mortuaries have long been neglected and are generally located in a far-off isolated corner of the hospital with primitive facilities for body preservation and autopsy. [1] Facilities for autopsy like dissection table, instruments, water supply, lighting and sterilization facilities are lacking at many places and if present, are in worst and rusted condition, in spite of the guidelines of Medical Council of India and judiciary. [2]

The most horrendous step that was taken by the father of medical education, the MCI, was by decreasing its marks and teaching hours, which led to further deterioration. The subject is being treated as minnow by the M.B.B.S. Students.

The prescribed staff by MCI is not present in Government Medical Colleges and if any vacant posts are there, the Central and State Governments are least concerned for the recruitment of posts. Due to the shortage of faculty and various other elements required as per the norms, the departments are still not recognized by the MCI [3] and even at certain places by the State Governments, which has led to the deterioration of the level of undergraduate and postgraduate education. The Postgraduate degrees awarded by the majority of the Government institutions till date is not recognized, resulting in disinterest among the undergraduates to pursue Forensic Medicine as a career in the future. And among those unfortunates ones, who took it as a career are left for nowhere, because of the

prerequisites mentioned by the government bodies like U.P.S.C., etc. the biggest hurdle in these prerequisites is a recognized postgraduate degree by the Medical Council of India, which itself is a scarcity as the majority of departments are still lying not recognized by the Medical Council of India.

The highest administrative posts in medical education at times have been occupied by the Forensic specialists in most of the States, known as the forefathers of the subject, they too have done nothing regarding this important issue for the coming generations and even if any curative steps have been taken in the past, they themselves acted as deaf, mute and blind.

### Suggestions:

1. The requirement of staff in the mortuary differs from place to place and depends on the type of work undertaken, the quantum of work and the type of institute whether teaching or non teaching hospitals. The Sub-Committee Report (Bureau of Police Research and Development of 1975) laid down the staffing pattern and this has been accepted in principle by the government.

(a). For initial 100 autopsies per year:

- Specialists: Two (as one specialist is likely to be busy in other important work, teaching work, in court attendance, or if he falls sick, it is necessary to have two specialists).
- Post mortem technician: One.
- Post Mortem Assistant: One.
- Clerk/Steno: One.
- Chowkidar: One.
- Peon: One
- Sweeper/Morgue attendants: [4] (Three sweepers for shift duty round the clock and one as a reliever).

(b). For every additional 100 autopsies per year, following additional staff is required:

- Specialist: One.
- Post mortem assistant: One.
- Technician: One (for teaching institutions).
- Technical assistant: (300-500 autopsies/yr): One, (>500 autopsies / yr): Two.
- Photographer: One.
- Dark Room Attendant: One (on big centers, personnel for photographic work)

The Sub-Committee noted that in teaching institutions, teaching staff prescribed by the Medical Council of India should not be counted while assessing the total number of staff required as they will be busy in discharging their administrative, teaching and research guidance work.

2. The mortuary should be located in a separate building near the pathology laboratory on the ground floor, easily accessible from the wards, accident and

emergency departments and operation theatres, in an area with ample natural light through windows; the windows of the principal rooms should preferably be on the northern side.

The mortuary and post mortem unit should consist of:

- (A) Reception and Waiting area
- (B) Cold room for body preservation
- (C) Post mortem room
- (D) Ancillary areas: Like consultant's room, conference room, prayer room, toilet and other facilities for the staff and the visitors, trolley bay comp, stores, etc.

Each mortuary should have high quality equipment as per the recommendations of the **Survey Committee Report on Medico-legal Practices in India, 1964**, along with chemicals, articles and stationary. Equipments should be provided for conducting autopsies on HIV and Hepatitis B and C infected bodies and later on for their proper disposal.<sup>[4]</sup>

3. For the development of this subject to leap and bounds, the upgradation and recognition of the departments forms the key element. As most of the departments of Forensic Medicine in our country, are unrecognized by the MCI, special efforts should be made for the earliest recognition, which till date due to personal interests of our forefathers have been lacking and if any efforts, had been made in past, forefathers have turned out to be hurdles in the process.

4. Increase in the teaching hours in the curriculum for Forensic Medicine.

5. Internship in Forensic Medicine should be made compulsory for at least 1 month.

6. There should be training for Post Graduate students of each specialty in forensic medicine.

7. There should be regular CMEs for discussion of various medicolegal problems.

8. Special reference needs to be made for appointment of Forensic Experts at the district levels, as at almost all places, medicolegal and autopsy work is being done by untrained doctors who are bound to do this work as a part of their duty.

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## Homicides by Sharp Weapons

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### Abstract

In the present society, which is gradually becoming over democratic it is natural that old values of sanctity of life changes and personality problems develop due to consequent stress of life. This ultimately results in violence.

Killing of a human being is one of the most serious or major crimes. Since very long time, different judicial authority to prevent crime and its further occurrence framed laws. The laws were made according to the religious make up of the society but later the laws were according to the emperor's own convenience. In spite of all these, there has been a phenomenal rise in the incidence of homicide all over the world and also in India. The study was conducted on 200 alleged cases of homicides. The incidence of homicidal deaths was observed as 13.03% with male preponderance and the commonest age affected was 21 to 40 yrs.

Out of different weapons used to inflict the injuries on dead bodies of homicides, 31(10.88%) sharp cutting weapons were used. Incised wounds were present maximum 38(29.69%) on head and face. Defence wounds were present in 72(36%) of homicide deaths.

**Key Words:** Sharp Weapon, Homicides, Defence Wounds, Injuries.

### Introduction:

The word Homicide has been derived from Latin word "Homo- a man [1] and cadre -to-kill or cut" [2], means killing of one human being by another. Homicide embraces killing by the one who plans the death of another with malice a forethought, one who looks for a purpose to kill but means to inflict serious injury only and the one who acts in want of disregards of human life. [3, 4, 5]

The crime of committing homicide or murder or taking another man's life willfully is as old as the existence of man. Viewed in this context it would be seen that homicide was a common practice with the people in ancient Indian as in all other ancient civilization of the world. Revenge, quarrel, anger, jealousy, loss of prestige etc. have been the real motives leading to the worst and most dreaded act of homicide, all over the world through out the ages. Homicide or killing of fellow human being by a man therefore has been a perennial phenomena either in the form of human sacrifices or mass-massacres in wars or killing of a particular individual here and there actuated by personal motive whether offensive or defensive. [6]

The incidence of homicide by the use of all kinds of weapons and instruments weather blunt, sharp or firearm has risen substantially and steadily.

Sharp weapons can be classified into light cutting, moderately heavy sharp cutting and heavy splitting sharp weapons[7]. Homicidal incised wounds are usually associated with defence wounds, which constitute strong evidence in favour of homicide.

Although irregularly arranged wounds are usually homicidal and may, if excessive in number, justify an opinion of frenzy, the fact that they may be part of a masochistic suicidal act. [7, 8, 9, 10]

Defence wounds are the result of the immediate and instinctive reaction of the victim to save himself either by grasping the weapon. They may be of value in differentiating between homicide and suicide.

### Material and Methods:

The study consists of all the cases of homicidal deaths except deaths due to rash and negligent act, which were brought to the mortuary complex of the Department of Forensic Medicine and Toxicology of Govt. Medical College, Amritsar, Punjab (India) during the period extending from February 2003 to September 2004.

A total of 200 cases of homicidal deaths were studied to find the demographical, medicolegal aspects of mechanical injuries in culpable homicides.

### Observations:

Total numbers of 1662 cases were brought for the post mortem examination from February 2003 to September 2004 out of which 200(12.03%) cases comprised of study group. 54(27%) males maximum became the victim of culpable homicide were of the age group of 21-30 yrs followed by 33(16.5%) and 32(16%) who belonged to the age group of 31-40 and 41-50 yrs respectively. Similarly maximum 8(4%) females who died due to culpable homicide were from the age group of 21-30 years and 31-40

yrs. Thus maximum 103(51.5%) victims belonged to the age group of 21-40 yrs. 285 different weapons used to inflict the injuries on 200 dead bodies of

culpable homicides of which sharp cutting weapon 31(10.88%) used.

**Table I**

**Distribution of Pattern of Incision Wounds on Various Parts of Body in Culpable Homicides**

Site	Types of Incision Wounds					
	Incised Wounds		Chop Wounds		Total	
	No.	%	No.	%	No.	%
Head and Face	38	29.69	4	3.12	42	32.81
Neck	23	17.97	4	3.12	27	21.09
Chest	12	9.38	0	0	12	9.38
Abdomen	12	9.38	0	0	12	9.38
Upper Limbs	23	17.97	4	3.12	27	21.09
Lower Limbs	6	4.69	2	1.56	8	6.25
Total	114	89.08	14	10.92	128	100

As per Table No I out of 128 different incision wounds found on 200 dead bodies, incised wounds comprised maximum in 114(89.08%) followed by chop wounds 14(10.92%). Incised wounds were present maximum 38(29.69%) on head and face followed by neck, upper limbs, chest, abdomen, and lower limbs i.e. 23(17.97%), 23(17.97%), 12(9.38%), 12(9.38%), 6(4.69%) respectively.

Chop wounds were present on head and face, neck and upper limbs 4(3.12%) each and in lower limbs 2(1.56%). Different types of incision wounds were present maximum on head and face 42(32.81%), followed by neck, upper limbs, chest, abdomen and lower limbs i.e. 27(21.09%), 27(21.09%), 12(9.38%), 12(9.38%), 8(6.25%) respectively.

**Table II**

**Incidence and Distribution of Features of Wearing Apparels in Culpable Homicides**

Wearing Apparels				Features of wearing apparels							
Worn		Not worn		Torn		Not Torn		Blood Stained		Not Blood Stained	
No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
187	93.5	13	6.5	63	40.12	97	61.78	101	64.33	56	35.67

Table II 187(93.5%) cases had worn the wearing apparels of which 101(35.67%) were blood stained and 63(40.12%) were torn. The defence wounds were present only in 72(36%) of homicide deaths.

**Discussion:**

In the present study 1662 cases for postmortem examination were received from February 2003 to September 2004, 200(12.03%) cases were of deaths due to culpable homicide. The incidence was higher than Tonsayonand (1984)[11], Pal et al (1997)[12] i.e. 7.7% and 7.69% respectively. Much less than Dikshit, Dogra and Chandra (1986)[13] 28%, but almost the same as compared to Khanagwal and Paliwal (1991)[14] and Dikshit and Kumar (1997)[15] i.e. 10%, 11.5% respectively. This variation is due to regional conditions i.e. political, social as well as other law order problems as a result of unemployment, poverty, migratory labourer, etc.

**Age and Sex Wise Distribution:**

In the present study maximum 31% victims were of age group of 21-30 yrs though 51.5% victims of age

group of 21-40 yrs. Dasgupta and Tripathi (1983) [16] reported 45.16% victims of age group of 25-44 yrs. Fimate and Singh (1989) [17] reported 50% of victims of age group of 21-40 yrs. Dikshit and Kumar (1989) [18] reported maximum 41.37% victims of age group of 21-30 yrs. Pal et al (1999) [12] reported 29.24% victims of age group of 21-30 yrs.

Majority have observed that maximum number of victims were of age group of 21-30 yrs. Just like current study this could be attributed to the fact that this is the most active phase of an individual's life, including out door activities, increased aggression and early losing of temper which leads to increase in crime rate by this age group.

In the present study 82.5% main victims were males. Similar observations were of Dasgupta and Tripathi (1983) [16] who reported 88.97% victims as males. Tonsayanond (1984) [11] reported male and female ratio 9:1. Dikshit, Dogra, Chandra (1986) [13] reported male to female ratio as 7:1. Khanagwal and Paliwal (1991) [14] maximum were male victims 75.2%. Pal et al (1999) [12] male to female ratio was 3:1.

Sex wise distribution is in unison with other studies. This preponderance could be due to the fact that male member of the family is expected to preserve every financial, honor, moral prestige of the family. Hence any threat to these would make him to reach the extremes of most dreadful act. Secondly, female are less likely to be involved in brawling incidents which are commonly associated with intentional killings or likely to be killed as a matter of jealousy and irrespective to whether they had an emotional or sexual relationship with the offender.

#### **Distribution of Incisions:**

The distribution of incision is shown in Table No. I, maximum incisions were on head and face 32.81% and minimum were on lower limbs 6.25%.

Gorden and Shipiro (1988) [19] observed the incised wounds are commonly seen in cases of homicidal assault. Homicidal incised wounds are usually multiple and can occur in any region of the body. If in a case of homicidal wounding, the victim tried to defend himself by warding of blows or by grasping the weapon, the multiple incisions may be found on his forearms and in the palms of his hands. Wounds on top of head are homicidal.

In the present study similar findings were observed majority of incisions were on head and face. This could be out of revenge to disfigure, the face or to conceal the identity by deforming head and face. As head contains the most vital organ the brain, so any injury to head will be fatal is well known fact to the assailant.

#### **Features of wearing apparels:**

In the present study 93.5% victims had worn clothes of which 61.78% were torn and 64.33% were blood stained (Table No. II). Tear in clothes was not observed in cases where injury was on head region and clothes were not stained in cases of deaths due to strangulation or concealed head injury cases. No comparative work is available to discuss this issue.

#### **Defence wounds:**

In the present study 36% had received defence wounds. Similarly Dikshit, Dogra, Chandra (1986) [13] had found in 28.58% victims received defence wounds. Dikshit and Kumar (1997) [15] had found in 11.17% victims, defence wounds are commonest on the palmar aspects of hands. Gill and Cantanese (2002) [20] found defence wound in 49% of homicides. These are caused while warding off a blow or by some other means. In present study also maximum defence wounds were on palmar aspect of hands and outer aspect of forearm just like study of Dikshit and Kumar (1997). [15]

#### **Summary and Conclusions:**

The incidence of homicide was 12.03%. The largest number of victims was of the age group of 21-30 years 31% and majority of victims were males

82.5%. Incised wounds were present maximum 38(29.69%) on head and face. Chop wounds were present on head and face, neck and upper limbs 4(3.12%). 93.5% victims had worn clothes out of which 61.78% were torn and 64.33% were blood stained. Incidence of defence wounds was 36%.

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## Trends of Suicides in North Eastern Rural Haryana A Retrospective Study

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### Abstract

Suicide patterns and rates differ in various populations and cultures. It is known that in most countries that have been studied, more than 90 percent of those who commit suicide have a mental disorder. This behavior, although often triggered by external factors, occurs in vulnerable individuals who have a neurobiological and often familial predisposition. Suicides in rural India are attributed mostly to crushing financial pressures on farmers. Indebtedness, crop failure and the inability to pay back loans due to high rates of interest have led as many as 25,000 peasants in India to commit suicide since the 1990s, according to official figures. The present study was designed to investigate the different methods of self-destruction, age and gender susceptibility to suicide, the groups particularly affected and the underlying motivating factors for such an extreme step among rural North Eastern Haryana people. Various suggestions relating to decreasing the tensions of modern life, proper use and storage of agrochemicals and financial improvement of farmers have been put forward.

**Key Word:** - Suicides in Rural Haryana, Indebtedness, mental Disorder.

### Introduction:

Poisoning is a major problem all over the world, though the type of poison and the associated morbidity and mortality varies from place to place and changes over a period of time. The use of poisons for suicidal and homicidal purposes dates back to the Vedic era in India. Fire and its searing / cleansing powers have been held in great reverence and fear in the Indian psyche. This extended to cleansing and blessing of human bonds and relationships over it. Even Shushruta's ancient medical treatise gave it the final sterilizing / cleaning authority. From this background, setting oneself on fire may have been arrived at, as an Indian means of honorable suicide. [1]

The exact incidence of this problem in India remains uncertain, but, it is reported that 1 to 1.5 million cases of poisoning occur every year, of which nearly 50,000 die. [2] The last quarter of the century has seen tremendous advances in the fields of agriculture, industrial technologies and medical pharmacology. These advances have been paralleled with remarkable changes in the trends of acute poisoning in developing countries, including India. [3]

Among the important matters of concern to the state economy, reports of distress among farmers coming from most of the districts of the State cause deep concern. The ugly climax of such distress is in the form of suicides reported in the state. The major policy concern here is whether the suicides could be related to economic distress and, if so, how such a situation can be averted.

It is essential to understand a few changes that have occurred in rural India in the span of the last five

decades. First of all, the village as an institution has crumbled under the pressure of commercialization, whereby the 'weak' in the villages are left to fend for themselves, and the village institutions which hitherto took care of the distressed have slowly receded and vanished. The pressure of commercialization has not only fuelled the weakening process of village institutions but also compartmentalized the classes and even impacted the technology or information transfer. Second, the process of land reforms has created more distortions than it has solved. The trends in marginalization of landholding are frightening and have increasingly made an average farmer non-viable. The demographic pressures have added to this process creating marginalization of landholding, thereby affecting the economic viability across the farm groups. Against this background and in view of the spate of suicides taking place in the State, it was felt that an in-depth study of the situation is warranted. The study mainly focuses on locating the remedial measures to avert future incidence of suicides. Our focus, therefore, is not on exclusively locating the causes of suicides that have taken place but more on learning lessons from them so as to derive a proper policy framework.

### Material and Methods:

The material for the present study comprises 28 cases of alleged suicide subjected to medicolegal autopsy at the department of Forensic Medicine and Toxicology, M.M. Institute of Medical Sciences and Research, Mullana (Ambala) (a rural institute) from 25<sup>th</sup> March, 2005 till 28<sup>th</sup> Feb, 2007. Data on the relevant factors was collected from various sources such as case papers or hospital records, the inquest

papers and the information furnished by the relatives.

Out of total number of 97 cases of unnatural deaths or deaths under suspicious circumstances, 28.9% had allegedly committed suicide.

**Results:**

**Modes of unnatural deaths:**

**Age and gender distribution of suicides  
Table No. I**

Years	Male	%	Female	%	Total	%
11 to 20	2	7.1	1	3.6	3	10.7
21 to 30	12	42.9	1	3.6	12	46.5
31 to 40	5	17.8	0	0.0	5	17.8
41 to 50	2	7.1	0	0.0	2	7.1
51 to 60	4	14.3	1	3.6	5	17.9
<b>Total</b>	25	89.3	3	10.8	28	100.0

Adults belonging to age group 21 to 40 years (64.3%) were most prone to suicide, followed by the

age group 51 to 60 years (17.9%). Male predominance was observed among the suicide deaths, the male and female ratio being 8.3:1.

**Preferred methods of suicide  
Table No. II**

	Male	%	Female	%	Total	%
Self-Immolation	1	3.6	2	7.1	3	10.7
Hanging	6	21.4	1	3.6	7	25
Poisoning	18	64.3	0	0	17	64.3
	25	89.3	3	10.7	28	100

Poisoning (64.3%), hanging (25%) and self-immolation (10.7%) were the most common methods adopted to end one's own life in this rural part of

Haryana. The male: female ratio of various methods of suicides was 18:0.0 for poisoning, 0.5:1 for self-immolation, and 6:1 for hanging.

**Occupation distribution in suicides  
Table No. III**

	Male	%	Female	%	Total	%
Farmers	21	75	0	0	21	75
House Hold	2	7.1	3	10.7	5	17.8
Students	2	7.1	0	0	2	7.1

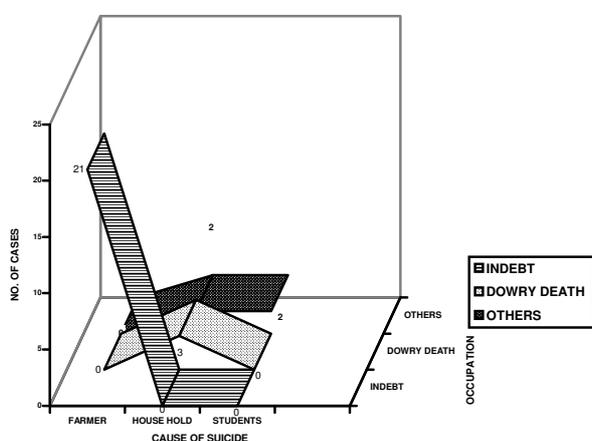
Farmers 75% predominates in ending their own lives, followed by household 17.8%, and students 7.1%.

**Underlying Causes  
Table No. IV**

	Male	%	Female	%	Total	%
<b>Indebt</b>	21	75	0	0	21	75
<b>Dowry Death</b>	0	0.0	3	10.7	3	10.7
<b>Others</b>	4	14.3	0	0	4	14.3

Indebtedness (75%) was the underlying cause for the person to take such a drastic step to end his own life.

**Relationship between occupation and cause of suicide**



Farmers (21) have taken their lives due to indebtedness, house hold (5) have different cause of death (3 dowry deaths & 2 others).

**Discussion:**

The present study reveals that the percentage of suicides is 28.9%, which is comparable with other studies. The reported suicide rate in India is 28.57 per 100,000[4] 29 per 100,000 [5] and 22.3 per 100,000[6]. The age group 21 to 40 years was most prone to suicide, accounting for 62.9% suicidal deaths. This is in conformity with the various studies conducted worldwide. [7, 8, 9, 10]

The ever-increasing demands and stress of the modern life could be the most probable factor responsible for increase in suicides amongst the young.

Methods used by individuals bent on self-destruction. It depends upon the availability of lethal

methods. Use of poisons, hanging and self-immolation account for most of the suicides in this rural part of India. As in rural area, the majority of people are farmers so easy availability of pesticides at their homes or at their farms, may be the most common reason that poisoning is dominating method for suicide.

As in India, two third of populations economy is based on agriculture, of which majority lives in rural area. The reason of suicides by farmers is indebtedness, which may be due to the entry of cheap primary products from the EU and the US, while our own farmers struggle to sell their produce. The reason that the imported grain is cheaper is the high level of support that developed countries' governments provide to their own farmers, as well as the economies of scale that large farming conglomerates have realized. Furthermore, our own government's calculation of a minimum support price for agricultural procurement has largely been flawed, and has failed in providing relief to farmers who find it unremunerative to sell in the market. The low cash flows that have resulted from agricultural sales have forced farmers to seek loans. However, most corporate money-lenders like banks require collateral, especially if the prospective borrower has a history of defaulting on loans. Often the collateral requirement is such that only the wealthiest of the agrarian community can meet it. Thus, most farmers are left with little recourse but to borrow from local traders, who also act as providers of liquidity, at usurious interest rates. Particularly exploitative examples of the latter are the commission agents-cum-moneylenders. These agents advance loans to farmers at the beginning of a season, with the condition that the farmer will have to sell them his produce at a price significantly lower than the market price. This scheme makes sure that the farmer stays indebted year after year, especially as his income from selling his produce is never enough to invest in next season's sowing. Added to this is the possibility of crop failure due to the late arrival of the monsoon, which can ramp up the level of indebtedness several notches. Most of the farming community is so deeply in debt that a single event like an illness in the family can push a household into the realm of food insecurity. [11, 12]

### Conclusion:

To summarize, the following were drawn:

1. Adults of the age group 21 to 40 years are most prone to suicide.
2. Poisoning was the most prominent method of suicides.
3. Farmers commit suicide more often than others.
4. Indebtedness was the main reason to commit suicide by farmers.

### Suggestions:

1. Suicide is one of the commonest causes of death and presents a serious social and public health problem. Its prevention is still a challenge, and accurate and definitive fact finding is essential for the detection of high-risk groups.
2. Popularizing vocational courses suited to individual needs will go a long way to reducing the insecurity of the unemployed, thereby boosting their self-confidence and will power.
3. The storage and sale of commonly used chemicals in the agricultural sector (agrochemicals) should be controlled through strict regulations and implementations by the relevant authorities.
4. The rural sector requires credit policies that lead to formation of cooperatives and creation of actual productive assets rather than mere employment creation, which can only be the first stage of the rural developmental process. Further, the planning process in India has always been fraught with errors in not just the implementation of policies but in their actual conceptualization.
5. This includes providing the vulnerable sections of the population the avenues to participate in economic life rather than be stuck in an exploitative informal labour sector and risky rain-fed agriculture.

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## Finger Nail Abrasions in Manual Strangulation (Throttling)

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### Abstract

Autopsy surgeons, often observed that the nail abrasions produced over the neck of victims in manual strangulation are almost straight and do not resemble the shape of nails, which are semi-circular/crescentic. A study is undertaken to know the reason for the same. During the study it is observed that the skin gets stretched while the assailant is applying pressure and only then nails produce indentations. Once the pressure is removed the stretched skin reverts back to its original position. Thus the semicircular indentations caused over the stretched skin appear straight after the skin regains its original position.

**Key Words:** Nail Shape, Nail Abrasions, Throttling.

### Introduction:

Abrasions seen over the neck in manual strangulation could be that of either victim/assailant [1, 2] and often do not correspond to their shape. This is particularly seen in cases of pressure exerted by the assailant. Nail abrasions caused by the victim are usually found horizontally placed, whereas those caused by the assailant fingernails are often vertically/obliquely placed. The nail abrasions caused by the fingernails of the assailant often do not correspond to their shape i.e. crescentic (Fig.1). Some times this causes confusion about the causative agent of these abrasions. The present study is undertaken to know, why the pressure abrasions caused by Nails often do not correspond to their shape.

### Materials and Methods:

One of the staff members of the department volunteered for the present study. Left fore arm of the subject was chosen as a target instead of neck because of the inherent dangers. Pressure is applied, by squeezing the forearm from the lateral to medial side as shown in (Fig.2). Pressure is maintained by the fingers for few seconds.

### Observations:

In the Fig. No.3, pressure abrasions caused by finger nails are clearly seen. But the surprising findings are that the indentation caused by the finger nail of index finger is almost horizontal, the indentations of middle finger is opposite to that of what presently believed. The convexity should have been towards lateral side but in the Fig 3 it is seen on the medial side. The ring finger nail indentation is in normally expected shape, whereas the little finger indentation is faintly visible but crescentic.

Though one expects all the four indentations caused by finger nails would be in crescentic or at least similar but the study proved that both beliefs are always not correct.

The reason for such findings can only be due to stretching of the skin when pressure is being

applied and the pressure abrasion occurs when the fingers get a grip i.e. when skin can not stretch any more. Once the pressure is removed the stretched skin regains its original position and the indentations caused by the nails thus appear. The fingernails, which caused the maximum stretching i.e. the nail indentations of index finger and middle finger, are different from that of ring and little finger, because the stretching of skin by the latter is minimal, hence typical crescentic shaped abrasion resembling the causative agent is seen.

### Conclusion:

The present belief that in manual strangulation crescent or semi circular abrasions are seen on the neck of the victim, which result from the finger, nail indentation of assailant is not true in all cases. Sometimes the shape of the indentations may be straight or the arc is seen in the opposite direction depending upon the stretching of the skin in the region of neck of the victim by the fingers of assailant.



Fig. No. 1



**Fig. No. 2**



**Fig. No. 3**

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## Personal Apparel Endangering Life

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### Abstract

Survival after accidental pressure exerted over neck is not common. In the literature also only few cases are available. Further, the victims or their relatives seek medical assistance only if complications arise and also it is not mandatory on the part of treating private practitioner to report such cases to the police.

Findings in the living on the 4<sup>th</sup> day after accidental compression of the neck by the personal apparel are described in this article. Red eyes due to scleral haemorrhages are the most striking feature and the position of knot with ligature mark is also well marked.

**Key Words:** Personal Clothing, Pressure Over Neck, Survival Features.

### Introduction:

Deaths due to accidental hanging, strangulation among different age groups are reported in considerable number. Only few cases of accidental compression of the neck by self-clothing and survival are available in the literature. A case of accidental hanging and survival and also how a ligature mark after 7 days appears was reported. [1] In the present case, findings on the 4<sup>th</sup> day after accidental compression of neck are described.

### Case report:

A girl aged 12 years wearing salwar kameez and the chunni placed over shoulders with both ends tied was playing on a fine evening with friends near her residence. Suddenly she lost balance and had fallen on the ground. Friends tried to help her but found her unconscious and sought help. Neck compression can cause helpless black out in 10 seconds. [2] The residents including the girl's parents rushed to the spot and sprinkled water over her face. One of the resident noticed that the chunni, which was over her neck, was tight, and the same was removed. After few minutes she regained consciousness. Parents did not seek medical assistance as she behaved normally.

On the 4<sup>th</sup> day after the incidence parents sought consultation with the ophthalmologist of Mamata General hospital as the redness of the eyes persisted. On examination the eyes showed scleral haemorrhages, a one-inch wide ligature mark was seen at the middle of the neck, in front and sides (Fig.1). The imprint of the knot was seen on the right side of the neck (Fig.2) No ligature mark was seen on the back of the neck.

### Discussion:

Women to cover their chest & head usually wear Chunnis. Sometimes both ends of chunni are tied together particularly during play or cooking to prevent slipping of chunni. In the present case the girl tied the ends of chunni together. While playing she had accidentally fallen down in such a way that part of the chunni was caught between her

back and the ground. This resulted in knot and adjacent part of chunni compressing the front and sides of the neck. This case once again shows that apparel of a person can sometimes become a lethal weapon.



Fig. 1 & Fig. 2

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## Positive Autopsy: A Case Report

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### Abstract

The Postmortem examination of bodies brought to mortuary can be conducted by medical officers or by Forensic experts. Usually this job is conducted by medical officers and in doubtful cases dead body is referred to Department of Forensic Medicine to conduct autopsy. Many a times the medical officer fails to see wounds or injuries, they not able to differentiate antemortem injury from Postmortem injury, sometime they are not able to differentiate hanging from strangulation and in cases of multiple injuries, they are not able to draw opinion regarding cause of death, mode of death and manner of death. At most of time these cases remain unnoticed and unobjectionable but in few cases in which relatives of deceased are not satisfied with Postmortem finding and they demand for Re-Postmortem examination by help of Forensic experts. Most of time Second autopsy is not able to draw any opinion regarding cause of death, mode of death and manner of death because of serious alteration and artifact during First autopsy, but one thing which is always highlighted here that First autopsy was not complete. In this paper is discussed a case report in which the medical officer at a district hospital conducted a Postmortem examination on the dead body of a young male, he has preserved viscera for chemical analysis and he was not able to draw opinion regarding cause of death. Later on Re-Postmortem was conducted at the Department of Forensic Medicine and Toxicology, Govt. Medical College and New Civil Hospital Surat, revealed the cause of death as intracranial hemorrhage.

**Key Words:** Re-Postmortem, Intracranial hemorrhage, Mortuary, Autopsy.

### Introduction:

*"A surgical operation is attended with pain, and is for the benefit of the individual, An autopsy is free from pain, and is for the benefit of humanity" ---Paul H*

#### **Broussard**

The word "Autopsy" is derived from two terms "autos" i.e. self and "opsis" i.e. examination (self examination). Usually autopsy is conducted when death occurred in suspicious circumstance to find out cause of death, mode of death, manner of death, time since death, to establish identity of a person if body unidentified and to collect evidence in order to identify the object causing death and to identify the criminal. In every case autopsy must be complete, all the body cavities should be opened, and every organ must be examined, because evidence contributory to the cause of death may be found in more than one organ. Partial autopsies have no place in Forensic pathologic practice.

A complete autopsy is necessary to substantiate the truth of the evidence of eyewitnesses. A poor autopsy is worse than no autopsy at all, as it is more likely to lead to a miscarriage to justice.

In India, the Postmortem examination is mainly conducted by medical officers, working at primary

health centre or community health centre of various parts of country. Most of them are not having basic knowledge of Forensic Medicine and Toxicology. In some cases relative of diseased or investigating officer are not satisfied with the First autopsy report and they go for Second autopsy in higher centres.

#### **Case history:**

A dead body of young male, aged about 25 years was brought to the Department of Forensic Medicine and Toxicology, New Civil Hospital, Surat, for Second autopsy on dated 01-07-2006. Two to three persons in his farm had assaulted the individual, about 1 month ago from the date of Second autopsy. Alleged history which is given by relative of deceased and police suggest that from the site of incident, he was brought to near by community health centre in unconscious state for purpose of treatment. His consciousness not recovered after the treatment and due to financial reason or some other reason, body was not subjected for CTscan. At last patient died on 28-06-06 in night and body send for Post Mortem Examination. On next day Postmortem examination was conducted by medical officer of same community health centre. He did not found any injury over the body and cause of death, so he preserved viscera for

chemical analysis. The relative of deceased were not satisfied with the report from First autopsy. They made request to superintendent of police for Re-Postmortem examination by Forensic experts. Initially police was not ready to do so but finally body was brought to the Department of Forensic Medicine and Toxicology, New Civil Hospital, Surat, for Second autopsy on dated 01-07-2006 by Forensic experts in penal. Investigating officer also made request for videography during whole Postmortem examination.

### **Details of the Second autopsy:**

As is the mandatory procedure in all cases, we received and studied the inquest papers and First autopsy report in great details and made inquiries from both the police and relatives. There was no positive finding from the first report. The autopsy report had shown no evidence of any types of injury all over the body.

During naked eye, external examination of the dead body, we found body-showing signs of decomposition (rigor mortis passed off, faint Postmortem lividity, greenish colour decomposing fluid coming out from mouth and both nostril and greenish discoloration over the abdomen).

The First autopsy incision, one was in midline extending from suprasternal notch to symphysis pubis, and another one in Para median position over left lumbar region (to remove left kidney separately?). There was no scalp incision and no incision to examine neck structure.

### **On external examination we found three contusions over the body:**

1. One contusion over right side of chest, front and lower part, 3cm X 1cm in size, grayish yellowish in colour.
2. Second contusion over left side of chest, front and outer aspect, 5cm X 1cm in size, grayish yellowish in colour.
3. Last contusion over right side of abdomen, front and upper part, 3.5cm X 1cm in size, grayish yellowish in colour.

### **During internal examination:**

- We found that cranial cavity and neck structure were intact, not opened and examined during first Post Mortem Examination.
- Important positive finding which we noticed was thin layer of subarachnoid hemorrhage over right frontal, temporal and parietal region.
- Other findings include 100 cc Hydrocele fluid in each Testis, all body organs were soft and in state of decomposition.
- Stomach and its content, left kidney, whole heart missing from the body at the time of Second autopsy.

After completion of Second autopsy cause of death given was intracranial hemorrhage and viscera preserved for histopathology report and for chemical analysis report. The report from histopathology and chemical analysis did not show any positive finding and final opinion was given that person died due to intracranial hemorrhage.

### **Summary and Discussion:**

During the First autopsy all bodily cavities were not opened and examined. Autopsy surgeon did not find any injuries over the body which was very obvious at the time of Second autopsy. So it was because of partial autopsy that First autopsy surgeon could not reach to the conclusion about cause of death. This raised doubt for relatives of the deceased that they should go for Second autopsy at the higher institute

This case report raised so many questions in my mind, is partial autopsy "negligence or crime or mere lack of knowledge of the subject". Who is responsible for this injustice to the dead person? Is it sole responsibility of First autopsy surgeon or to some extent our system is also responsible? As we all know so many programmes are running at national and international level among these is any programme running to update medicolegal knowledge of medical officers who are working at the Root level? We know that under the Medical Termination of Pregnancy Act, 1971, there are certain criteria for place and person (person should assist at least 25 MTP cases), who can conduct termination of pregnancy. I think some important guidelines and qualifications must be decided before a person is allowed to do Post Mortem Examination.

The Department of Forensic Medicine and Toxicology of various part of our country should start training programme with necessary permission from concerned authority at the Root level to update medicolegal knowledge and to improve quality of medicolegal work. Government has to take this matter seriously and support, facilitate and fund various Forensic Medicine Departments for their work at the Root level. Government should also create a post at district level for M.D. Forensic Medicine so that quality and quantity of medicolegal work can improve. This will help in early crime detection and to prevent travesty of justice.

### **Conclusion:**

The medicolegal autopsies are conducted for the investigation of sudden, suspicious, obscure, unnatural, litigious or criminal deaths. As already mentioned partial or incomplete autopsies are very commonly done by inexperienced doctors in peripheral hospitals. Partial autopsies have no place in Forensic practice. The first post mortem examination should be conducted in proper manner

because performing a second autopsy, in addition to being emotionally traumatic to the decedent's family and expensive. According to Bernard Knight, 1991, medicolegal autopsy should ideally be only performed by a Forensic pathologist who has been trained in the techniques. Sadly in our country, Forensic medicine is not a preferred specialty and there are few specialized Forensic experts, the number even fewer in district and peripheral hospitals. Today it is need of time that quality of medicolegal work has to be improve because if one come to know about Root of crime than only it can be extracted. To start training programmes in form of workshop, seminar, conference and demonstration to upgrade and update knowledge regarding various medicolegal aspects including postmortem examination, certification and complication of different legal and illegal procedure, government should decide some policies and for their implementation various Department of Forensic medicine and Toxicology should be promoted, supported, facilitated and funded, so that this types of programmes can be implemented effectively and successfully.

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We usually see top of the plant and comment on it but we rarely try to find out the root and methods to evaluate it.

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## Reconstruction: A Recipe of Forensic Medicine

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### Abstract

Mostly in medicolegal cases for the purpose of investigation in the right direction it is important to know and see whether findings or injuries present over the body are consistent with the history or not. This becomes more important in certain cases like death in police custody and death in police encounter, where the integrity of law enforcing agencies is at stake and for that consistency of findings with the history given by them is important. This is only possible by meticulous examination of the body and then reconstruction of the findings, which leads to a particular outcome. And that is why it is said, that "Reconstruction of the crime is like a recipe of forensic medicine".

**Key words:** - Firearm-injury, Police-encounter, Reconstruction.

### Case history:

In a case of kidnapping and murder the police party was shifting the arrested person from one place to another place for the purpose of investigation. On the way they took dinner in a hotel and about half an hour later the accused asked to go for attending the natural call (defecation). One police person was accompanying him with his gun while the others were standing at the distance of about 10-15 feet. Suddenly, the accused tried to take over the charge of gun from the accompanied police person and in response; the other police personals fired at him and injured him, while he was in squatting position. The deceased was immediately rushed to the hospital where he was declared dead.

### Post-mortem examination:

Magistrate inquest was done and post-mortem was conducted on the body of the deceased. Before starting the dissection X-rays were taken to locate the position and direction of the bullet. Five entry wounds were found over the front part of trunk and left thigh while only one exit wound was there on the lower back of the body. A rim of abrasion collar was present around all entry wounds and no signs of singeing, blackening and tattooing were found. Four bullets were recovered from the body. Details of the injuries present over the clothes and body in reference to their size, site and direction were noted.

### Reconstruction of Events:

At the end on the basis of findings, reconstruction was done and it was found that the findings were consistent with the history given by the police. Following findings which justify the consistency with the history after reconstruction:

1. On examination of the clothes we found that corresponding injuries were not present over the clothes of lower part of the trunk and thigh region (pent & underwear), suggesting that the clothes were not in position at the time of infliction of injuries and consisting with the squatting position of the deceased for attending the natural call.
2. Direction of firearm injury present over the thigh region was upward, backward and inward which is either possible in squatting position or if the fire received from the lower level as compared to the level of the deceased, which was excluded after considering the scene of crime at ground level.
3. Distance of the fire was almost same as described by the police in the history.
4. The shots fired by the police were same in number as recovered from the body and place of crime.
5. The semi-digested food was found in the stomach and particles of food identified were same as given in the history.

### **Conclusion:**

Above findings and reconstruction suggest that whatever the history given by the police was consistent with the findings. In such cases it is difficult for the police to prove their innocence, as sufficient and scientific grounds are not available. But meticulous examination of the body and relevant reconstruction of the events can be helpful to come out with the truth, which has a great social and medicolegal implication. The present case also highlights the importance of examination of clothes in medico-legal cases, especially in firearm injuries.

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## Fracture of the Temporal Bone: A Tomographic V/S Autopsy Study

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### Abstract

The present study was conducted in the Department of Forensic Medicine & Toxicology, SMS Medical College Jaipur (Raj), in the period from December 15, 2001 to April 4, 2002. With the aim to find out the correlation of X-ray (Skull), CT scan (Head), surgical intervention findings with the autopsy findings in the cases of acute Head trauma. Total of 140 cases of acute head trauma were selected irrespective of age, sex, religion caste etc. who had been admitted in Neurosurgery dep't. And X-ray, CT scan head and /or surgical intervention had been done, subsequently died & autopsy was performed. X- ray skull gave batter information on fracture of skull than CT Scan, particularly when the fracture is located on the vault or base of skull and is of linear variety. [1] Twenty seven cases of fracture of the temporal bone were specially studied, out of these 140 cases. All these cases had the features of triad, indicating of fracture of petrous part of temporal bone i.e. CSF Otorrhoea 14(51.1%), 7<sup>th</sup> nerve palsy 9(33.3%), serve middle ear bleeding 18(66.6%) & conducting hearing loss 5(85%). The plain X-ray demonstrated the fracture of temporal bone in 21 cases (79%) and the CT Scan demonstrated their in 24 cases (88%) Longitudinal fractures are common in 18 cases (66%) and procedure of choice for their demonstration is lateral tomography, Transverse fracture alone was uncommon (2cases) and can only be demonstrated in anterior posterior tomographic projections and is usually associated with occipital fractures.

CT Scan Examination give better information in detection of fracture of temporal bone as well as the type of fracture [2] which is essential for planning the surgical intervention or treating the patient conservatively in order to avoid the complications like, persistent CSF otorrhoea, posterior meningitis or even death.

**Key Words:** RTA (Road Traffic Accident), CT Scan (head) Temporal bone fracture, Head trauma, Autopsy Head.

### Introduction:

The CT scanning is said to reveal promptly, accurately and non invasively the intra cranial and parenchymal abnormalities in acute cranio-cerebral trauma that were previously recognized only at autopsy therefore the CT scan (head) is indispensable in the diagnosis of the various traumatic lesion and their management I, it also carries prognostic value. Fracture of petrous and tympanic part of temporal bone is not uncommon. Fracture of petrous and tympanic part of temporal bone was identified with the aid of CT Scan and the finding was confirmed and correlated with autopsy findings. [3, 4, 5]

### Clinical Material:

The present study was conducted on 140 cases of Acute Head Trauma admitted in the Neurosurgery Department of the S.M.S. Hospital, Jaipur (Rajasthan) who died there and subsequently postmortem examination was performed, during period December 2001 to April 2002. [6]

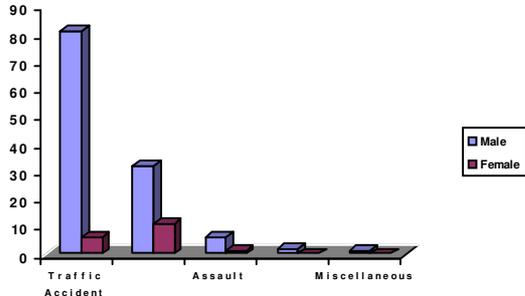
**Table-1**  
Age & Gender Wise Distribution of Cases

Age in Years	Male		Female		Total	
	No.	%	No.	%	No.	%
> 10	21	17.2	9	50	30	21.4
11-20	12	9.8	-		12	8.5
21-30	27	22.1	1	5.5	28	20
31-40	26	21.3	2	11.1	28	20
41-50	19	15.5	1	5.5	20	14.2
51-60	10	8.2	3	16.6	13	9.2
61-70	6	4.9	1	5.5	7	5
70 <	1	0.8	1	5.5	2	14
Total	122		18		140	100

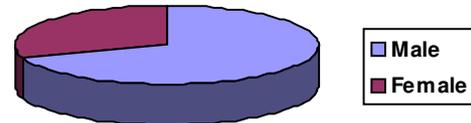
**Table-2**  
Manner of Injury in Acute Head Trauma

Manner of Injury	No. of Cases	%	Male		Female	
			No.	%	No.	%
Traffic Accident	87	62.1	81	93.1	6	6.8
Fall	43	30.7	32	74.4	11	25.8
Assault	7	5	6	85.7	1	14.2
Unknown	2	1.4	2	100	-	-
Miscellaneous	1	0.7	1	100	-	-
Total	140	100	122	89.1	18	12.8

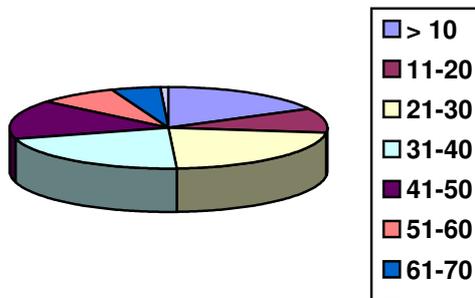
**Bar Diagram – 1**  
**Distribution of Cases According to Manner of Trauma Vis-À-Vis Age & Gender**



**Pie Diagram – 3**  
**Distribution of Cases According To Gender**



**Pie Diagram –2**  
**Distribution of Cases According To Age**



**Table No 4**  
**Clinical Manifestation Suggestive Of Temporal Bone Fracture**

Presenting Feature	Number Of Cases
Otorrhea	14
7 <sup>th</sup> Nerve Palsy	9
Severe middle ear bleeding	18
Conductive Hearing Loss	5

The over all incidence of Roentgenographic demonstration of fracture of the petrous bone 79% i.e. in 21 cases out of 27 cases on Plain X-ray. And in CT Scan 88% in 24 cases out of

27 cases.

The cases of Head injury were suspected of temporal bone fracture with presence of one or more signs of the triad of: Cerebrospinal fluid otorrhoea, Facial nerve Palsy & severe bleeding from ear along with additionally conducting hearing loss.

The fracture of pterous part of temporal bone was demonstrated in 27 (19.2%) cases out of 140 cases of

acute head trauma. All the 27 cases were presented with feature of triad, indicative of fracture pterous part of temporal bone. CSF Otorrhea-14 (51.1%), 7th Nerve Palsy-9(33.3%), Severe middle ear bleeding-18 (66.6%), Conductive hearing loss-5 (18.5%).

**Table-3**  
**Manner of Acute Head Trauma Vis-À-Vis Age**

Age Group	Traffic Accidents	%	Fall	%	Assault	%	Unknown	%	Miscellaneous	%
> 10	5	3.5	25	17.8	-	-	-	-	-	-
11-20	8	5.7	4	2.8	-	-	-	-	-	-
21-30	26	18.5	1	0.7	-	-	1	0.7	-	-
31-40	20	14.2	6	4.2	1	0.7	-	-	1	0.7
41-50	11	7.8	4	2.8	4	2.8	1	0.7	-	-
51-60	12	8.57	1	0.7	-	-	-	-	-	-
61-70	4	2.8	2	1.4	1	0.7	-	-	-	-
70 <	1	0.7	-	-	1	0.7	-	-	-	-
Total	87		43		7		2		1	

**Table – 5**  
**Location of Fractures of Skull on X-Ray Film**

Location of #	Fracture Side			Linear #	Depressed #	Comminuted # Left
	Left	Right	B/L			
Frontal	16	9	3	24	4	-
Parietal	18	16	5	29	10	-
Temporal	10	13	2	25	-	-
Occipital	3	3	-	6	-	-
Anterior Fossa	-	-	-	-	-	-
Middle Fossa	-	-	-	-	-	-
Posterior Fossa	-	-	-	-	-	-
Total (88 cases)	47	41	10	84	14	-

**Table – 6**  
**Location of Fractures of Skull on CT Scan**

Location of #	Fracture Side			Linear #	Depressed #	Comminuted #
	Left	Right	B/L			
Frontal	16	9	1	19	7	-
Parietal	20	15	-	26	9	-
Temporal	10	14	-	20	3	1
Occipital	-	-	-	-	-	-
Anterior Fossa	-	-	-	-	-	-
Middle Fossa	-	-	-	-	-	-
Posterior Fossa	-	-	-	-	-	-
Total (85 cases)	46	38	1	65	19	1

**Table – 7**  
**Location of Fractures of Skull Detected At Autopsy**

Location of #	Fracture Side			Linear #	Depressed #	Comminuted #
	Left	Right	B/L			
Frontal	12+4+2	6+2+1	1	18	6	3
Parietal	20+3+0	16+2+1	-	36	5	1
Temporal	13+0+1	10+3+0	2	23	3	1
Occipital	6+1+0	3+1+1	2	9	2	1
Anterior Fossa	21	4	2		-	-
Middle Fossa	26	16	6		-	-
Posterior Fossa	7	3	2		-	-
Total (118 case)	116	69	15	86	16	6

Table – 7 depicts the anatomical location of the fractures of the skull as well as their types i.e. linear, depressed and comminuted. There were linear fractures in 86 cases, depressed in 16 cases and comminuted in 6 cases. The side of the fracture (right, left or bilateral) has also been depicted in this table and the type of the fracture is depicted with (+) signs to describe the linear/ depressed/ comminuted type of the fracture.

Because at autopsy the fractures of the skull were seen and demonstrated therefore the percentage of fracture detection was considered cent percent (100%) and as per the aims and objectives of the present study, taking this fact into consideration the findings of the x-ray skull (Table - 5) and CT scan (head) (Table - 6) are compared.

Accurate demonstration of pattern of the fracture of petrous bone is important in those cases having persistent CSF otorrhoea / facial nerve palsy / middle

ear bleeding, if surgical intervention is contemplated. The localisation of the entrance of fracture into one or other intra cranial fossa will determine the operative approach. [7] Demonstration of the site of involvement of facial canal will aid to the surgeon for the decompression of facial nerve.

Anatomically the tympanic bone forms the anterior wall floor and part of posterior wall of external auditory canal and is attached to the rest of the temporal bone at the tympano-mastoid fissure and the petro-tympanic fissure. [8]

Fracture of the petrous bone was demonstrated by tomography in 24 boys and girls between the age of 13 months and 14 years. [9] All had a history of head injury one or more of CSF otorrhoea, 7<sup>th</sup> nerve palsy, and severe middle ear bleeding or conductive hearing loss. (Table - 4) Severe middle ear bleeding was judged to be severe only if it was marked and persistent. [10] Fracture of petrous part of temporal

bone was demonstrated by CT Scanning in 24 cases out of 27 cases no fracture of petrous bone was demonstrated in 3 cases and in plain x-ray, in 21 cases fracture was demonstrated out of 27 cases. 2 Children with CSF Otorrhoea and 3 children with 7<sup>th</sup> nerve palsy had the presenting symptom and these signs get resolved spontaneously but child had died due to some other cause. The history or clinical evidence of trauma to jaw was specifically excluded in all cases in this study.

### Technique and Results:

Computerized Tomography at interval of one mm was performed in every cases, Lateral tomography was performed on all cases, antero-posterior tomography in 23 cases and basal tomography in 20 cases. The entire petrous bone from external auditory meatus to the foramen lacerum area was visualized in all cases. B Conventional roentgenogram demonstrated associated fracture of the vault in 25 out of the 27 cases. Associated tympanic fracture was demonstrated in 23 cases, in 21 cases fracture passed into the middle cranial fossa of the skull and in 3 cases it extended into the posterior cranial fossa, in two cases both the middle and posterior cranial fossa were fractured. Precise pattern of fracture of petrous bone has been studied at operation /postmortem, and they were labeled as longitudinal /transverse and combined fracture.

Longitudinal fractures are most common 66% i.e. 18 out of 27 cases and the procedure of choice for their demonstration is lateral tomography (16) cases. They are not visible in anterior-posterior projection, and they passed from temporal squama or from the posterior parietal bone into the petrous bone along its longitudinal axis.

The posterior longitudinal fracture involved both the posterior superior portion of petrous bone and the sinus plate inferiorly and posteriorly in eight cases out of 18 cases of longitudinal fracture of petrous bone.

Transverse fracture alone was uncommon and was found in two cases and involved either the roof or floor of middle ear cavity. This fracture could be demonstrated in the antero-posterior but not in the lateral projection. Transverse fracture was typically associated with occipital fracture.

Combined fracture i.e. the longitudinal and transverse fracture leading to fragmentation of petrous bone associated posterior parietal fractures were found in three cases.

### Discussion:

In this study the Tomographic characteristic of petrous bone fracture in injured are similar to those found at operation and in the cadaver skull. The fractures are longitudinal, transverse or a combination of both. The autopsy feature revealed

that the longitudinal fracture involved either the anterior or posterior portion of the roof of petrous bone. [11] These fracture commonly extended to one or another neighboring foramina e.g. jugular, internal auditory meatus, foramen lacerum or roof of Eustachian tube with associated and adjacent fracture of parietal or occipital bone .Pure longitudinal fracture was not found.

Combination fracture are common due to road traffic accident and that such fractures having large fragment of bone lying free of the posterior –superior and posterior-inferior portion of bone .They certainly produce persistent CSF otorrhea and are usually fatal. Fractures involving the cochlea were difficult to detect by tomography and even at routine post-mortem examination. The high incidence of CSF Otorrhea, persistent middle ear bleeding, 7<sup>th</sup> nerve palsy are the alarming sign which should prompted CT Scan investigations.

Therefore the CT Scan examination gives better information in detection of fracture of temporal bone as well as the type of fracture which is essential for planning the surgical intervention or treating the patient conservatively in order to avoid the complication like Severe conductive deafness, persistent CSF Otorrhea, posterior meningitis or even death.

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## Age of Consent in Medical Profession: A Food for Thought

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### Abstract

The concept of 'consent' comes from the ethical issue of respect for individual dignity as well as right to self determination. Indian Constitution covers issue of consent under Article 21 dealing with right to life with dignity. In law, the tort of battery is defined as 'Application of force to the person of another without lawful justification' and there in lies the essence of requirement of consent for any medical treatment. Consent has been defined to mean "voluntary agreement, compliance, or permission for a specified act or purpose". [1]

This paper deals with review of literature on the issue of 'age of consent' in medical profession, Civil and Criminal Laws in India, judicial pronouncements, medical literature, etc. some textbooks mentioned age of consent as 12 years and others 18 years, while others used the words like: major, adult, minor, child and guardian, etc. author has made a sincere effort to reach at a consensus about the age of consent in medical profession.

**Key Words:** Age, Consent, Major, Adult, Minor, Child, Guardian, Medical Profession.

### Introduction:

The circumstances of medical practice do not ordinarily call for formal consent to medical examination because the patient conducts himself in a manner, which implies consent. When he attends at a surgery, consulting room or outpatient's department, or when he agrees to be admitted to a hospital or nursing home, he thereby implies that he will submit to routine physical examination.

The conduct of the greater part of medical practice is on the basis of implied consent, although entirely correct, is apt to lead medical practitioners to overlook the fact that medical examination is subject of consent, which in the appropriate form, is necessary. Moreover, it is easily forgotten that any step beyond routine physical examination calls for express consent, **oral or written**, according to the circumstances.

Each individual has a legal right to do what he likes with his body in order to preserve and protect his health and personal privacy. Medical examination, which is made without consent, is at once an **assault and a tress pass upon the person** of the patient and **can be the source of criminal and civil proceedings**. Today aggrieved patients may well institute proceedings.

The **M.P. High Court** observed, In **Medical Negligence by Nathan, 1957 Edition**, it has been observed at **page 156** as follows: The intentional interference with the person of another without legal justification amount to an actionable assault and battery for which damages may be recoverable by the injured person. Such damages will of course include compensation for actual injuries suffered as the result of the assault but in addition a Judge or Jury is at liberty in a proper case to award the plaintiff exemplary damages in respect of an assault or

battery as a means of punishing the defendant for reprehensible conduct in invading the Plaintiff's personal right without justification. Bodily interference which would otherwise amount to an assault or battery may, however, be justified by showing that the "patient" voluntarily submitted to the conduct in question. No action lies, therefore, against a medical man who interferes with the person of a patient if the patient's consent to the interference has been obtained. But for a medical man to administer treatment to or perform an operation upon a patient without the latter's consent amounts, subject to some exceptions which will be noticed in due course, to an actionable assault **Glanville Williams** in his **Textbook on Criminal Law, 7th Edition**, at **page 568**, has discussed this topic as under:

**Although English authority is lacking, the operation is clearly lawful.** This was stated by an eminent member of the United States Supreme Court, **Cardozo, J.:**

"Every human being of **adult years** and **sound mind** has a **right to determine** what shall be done with his own body..... this is true **except in cases of emergency** where the **patient is unconscious** and where it is **necessary to operate** before consent can be obtained". [Para 15] [4, 23, 24, 35, 36]

In **Moss v. Rishworth**, her **two adult sisters took an eleven years old girl** to surgeon for removal of tonsils and adenoids. The child died under anaesthetic. The Court held that there was no emergency, which would excuse the need for parental consent, and the father could recover damages. [11]

**Drummond's case:** Drummond sued a woman patient for recovery of fees. The patient

counterclaimed damages as a drug was administered to her, without her consent. She alleged that phenobarbitone, which she refused to take, was mixed in soup and meat and given to her daily, which prolonged her stay in the nursing home, as a psychological consequence for 16 weeks. The Court held that the administration of a drug to a person without that person's knowledge and consent was assault, and awarded nominal damages, as the drug did not cause substantial harm. [11]

### Definitions:

Consent (**Co= Mutual, Common; Assent= Agreement**) means voluntary agreement, compliance or permission.

Section 13 of the Indian Contract Act [3] lays down that "two or more persons are said to consent when they agree upon the same thing in the same sense".

Consent, with reference to the medical treatment, can be defined as the voluntary and continuing permission of the patient to receive a particular treatment, based on adequate knowledge of the purpose, nature, likely effects and risks of that treatment, including the likelihood of its success and any alternative in it. [4]

Consent is an act of reason, accompanied with deliberation, the mind weighing as in balance, the good and evil on each side. [5, 6]

Consent means an active will in the mind of a person to permit the doing of the act complained of, and knowledge of what is to be done, or of the nature of the act that is being done, is essential to a consent to an act. [6, 7]

Consent may be defined as a concurrence of will; to agree; to yield; to comply; compliance; permission. [8] "Consent" includes both express and implied. [9]

### Doctor-patient relationship and contract:

Doctor-patient relationship is based on certain principles of contract law [3] in true commercial sense in addition to trust and faith. An agreement enforceable by law is a '**contract**'. [Section 2(h)] [3] When one person signifies to another his willingness to do or to abstain from doing anything, with a view to obtaining the assent of that other to such act or abstinence, he is said to make a **proposal**. [Section 2 (a)] [3] When the person to whom the proposal is made signifies his assent thereto, the proposal is said to be accepted. A proposal, when accepted becomes a **promise (here refers to medical examination, diagnosis, procedure or operation, etc.)**. [Section 2 (b)] [3] The person making the proposal is called the "**promisor**" (here refers to "**doctor**") and the person accepting the proposal is called the

"**promisee**" (here refers to "**patient**"). [Section 2 (c)] [3] when, at the desire of the promisor, the promisee or any other person has done or abstained from doing, or does, or abstain from doing or promises to do or abstain from doing, something, such act or abstinence or promise is called a **consideration (here refers to "doctors fee")** for the **promise**. [Section 2 (d)] [3] Every promise and every set of promises forming the consideration for each other is an agreement. [Section 2 (e)] [3]

### What agreements are contracts?

All agreements are contracts if they are made by the **free consent of parties competent to contract**, for a **lawful consideration** and with a **lawful object**. [Section 10] [3]

### What is legally valid consent?

Legally valid Consent consists of three related aspects:

1. Voluntaries
2. **Capacity to consent (age and mental capacity)**
3. Knowledge

### Capacity to consent:

The patient should be in a position to understand the nature and implication of the proposed treatment including its consequences, in this regard the law requires following special considerations:

### Age of consent:

In India only a person who is a major by law i.e. above the age of 18 can give valid consent for the treatment. Hence any person, who is a minor, cannot legally give consent. In the case of minor consent may be given by the guardian. [2]

### Review of literature on age of consent:

#### Who can give consent?

The question naturally arises that who is a '**competent adult**'. A competent adult has been defined as a person **who has reached the age of 18 years** and has **capacity to make treatment decision** on his own behalf. [4]

### Who are competent to contract?

Every person is competent to contract who is of the **age of majority** according to the law to which he is subject, and who is of **sound mind**, and is not disqualified from contracting by any law to which he is subject. [Section 11] [3]

### What is the age of majority?

A person deemed to have attained his majority on the completion of 18 years, when he assumes full civil rights and responsibilities. [10]

### Review of Textbooks on Forensic Medicine:

Most of the Indian textbooks [1, 10, 11, 12, 32] defined consent as per **the Indian Contract Act**, according to which the age for entering into contract is 18 years, but mentions age of consent either 18 years or 12 years. One textbook mentions that in case of termination of pregnancy, written consent by the women is necessary. The patient's permission is necessary if the girl is below twelve years of age. [12] "A child below 12 years cannot give consent. A child above 12 years can give consent only for medical examination but not for any procedure. A consent for mentally defective patient can be given by a near relative / friend". [32]

"Consent of the guardian should be taken for an act to be done in good faith for the benefit of a child under 12 years of age or an insane person". (Section 89, IPC) A person above the age of 18 years can give a valid consent to suffer any harm which may result from an act not intended and not known to be likely to cause death or grievous hurt. (Section 87, IPC) Consent for examination and treatment is necessary from the inmate of a hostel or a lodge for his treatment if he is above 12 years of age. If such an inmate does not give consent then he can be asked to leave the hostel or the lodge but can not be compelled to the treatment. If the inmate is below the age of 12 years, then the superintendent of the hostel or the lodge gives the consent in his place". [33, 34] "Consent is to be obtained from the following persons for examination and treatment:

1. Conscious, mentally sound adults.
2. **Children above 12 years of age.**
3. The spouse of a person who is undergoing sterilization, termination of pregnancy, etc., (not always essential legally).
4. The parent or guardian of a **child who is less than 12 years of age**". [1]

Consent of the inmates of the hostel, etc., is necessary if they are above 12 years. Within 12 years, the **Principal or Warden** can give consent. If an inmate above 12 years refuses treatment, and he is likely to spread the disease, he can be asked to leave the hostel. However, if he stays in hostel, he can be treated without his consent. [Point 20, Page No.42] [11]

#### **Ethical aspect:**

It is also one of the ethical obligations of the doctor to obtain consent before performing operation, etc. "Before performing an operation the physician should obtain in writing the consent from the husband or wife, parent or **guardian** in case of **minor**, or the patient himself as the case may be. In an operation which may result in sterility the consent of both husband and wife is needed". [Point 7.16, Chapter

**VII]** [14] This most authenticated document [14] from medical profession point of view in recent times although doesn't mention about the age of consent but used the term '**minor**' and '**guardian**' which needs explanation to come to a conclusion.

Since consent is defined in Section 13 of the Contract Act [2] which mentioned about in its Section 11 that "Every person is competent contract who is of the **age of majority** according to the law to which he is subject, and who is of sound mind, and is not disqualified from contracting by any law to which he is subject". [2]

#### **Points in favour of eighteen years of age for consent:**

##### **The Majority Act provisions:**

Law, Justice and Company Affairs Minister, Mr. Ram Jethmalani introduced the Indian Majority (Amendment) Bill, 1999. **The Bill prescribes a uniform age of 18 years for attaining majority for all including minors under guardians appointed or declared by a Court of justice.** It seeks to remove certain archaic provisions in the Indian Majority Act, 1875 including the fixation of 21 years of age for reaching majority for minors under guardians while it is 18 years for others.

Mr. Ram Jethmalani said that the Government had received representations from various quarters in this regard and had found out that **there was no justification for the discrimination against minors under Guardians.** The nearly 125-years-old law had been reviewed and found to contain certain archaic and redundant expressions and provisions which the amendment Bill would seek to remove. [20]

##### **Age of majority of persons domiciled in India:**

(1) Every person domiciled in India shall **attain the age of majority on his completing the age of eighteen years and not before.** [Section 3(1)] [13]

(2) In computing the age of any person, the day on which he was born is to be included as a whole day and **he shall be deemed to have attained majority at the beginning of the eighteenth anniversary of that day.** [Section 3(2)] [13] Thus, age of majority of a person domiciled in India is on his completing the age of eighteen years and not before. In computing the age, the day on which he is born is to be included as a whole day.

##### **The Guardians and Words Act provisions:**

From the early Roman days to the present day, the King and the State is **under a duty to care for the class of persons who are incompetent to take care of themselves because of their immature intellect and imperfect discretion arising from their age.**

Under the Hindu Law as in English Law, the King is regarded as '*parens patriae*'. The Hindu sages made it clear that the King as the ultimate protector of the State may give suitable directions for the protection of the estate of the infants. The protection of infants by the King is now taken by the Court as representative of the sovereign.

"**Minor**" means a person who, under the provisions of the Indian Majority Act, 1875 (9 of 1875), is deemed not to have attained his majority. [**Chapter I, Section 4 (1)**] [15]

"**Guardian**" means a person having the care of the person of a minor or of his property or both his person and property. [**Chapter I, Section 4 (2)**] [15]

"**Words**" means a minor for whose person or property or both there is a guardian. [**Chapter I, Section 4 (3)**] [15]

**Duties of guardian of the person:** A guardian of the person of a word is charged with the custody of the word and must look to his **support, health and education**, and **such other matters** as the law to which the word is subject requires. [**Section 24**] [15]

**Types of guardians:** guardian includes every kind of guardian known to law and that not only actual physical custody but also constructive custody of the guardian. [18]

The term 'guardian' according to the section implies that it includes testamentary, certified, natural (father and mother) or defecto guardian too and not only statutory or legal guardian. [19]

The term 'guardian' does not necessarily imply that it has to be a natural person; even registered Societies too can act as guardians in case of orphans

### **The Indian Contract Act provisions:**

Applicability of provisions of the Contract Act in medical profession is further emphasized in another Section 16, according to which "Undue Influence" is defined as follows:

1. A contract is said to be induced by "undue influence" where the relations subsisting between the parties are such that one of the parties is in a position to dominate the will of the other and uses that position to obtain an unfair advantage over the other. [Section 16(1)] [2]
2. In particular and without prejudice to the generality of the foregoing principle, a person is deemed to be in a position to dominate the will of another: [16(2)] [2]
  - a. Whether he holds a real or apparent authority over the other, or where he stands in a fiduciary relation to the other; or [16(2) (a)] [2]
  - b. Where he makes a contract with a person whose **mental capacity is temporarily or permanently affected by reason of age, illness, or mental or bodily distress**. [16(2) (b)] [2]

3. where a person who is in a position to dominate the will of another, enters into a contract with him, and the transaction appears, on the face of it or on the evidence adduced, to be unconscionable, the burden of proving that such contract was not induced by undue influence shall be upon the person in a position to dominate the will of the other.

One of the Illustration make the position further more clear about the applicability of this Act to medical profession. "A, a man enfeebled by disease or age, is induced, by B's influence over him as his medical attendant, to agree to pay B an unreasonable sum for his professional services. B employs undue influence". [Illustration (b) of Section 16 of the Act] [2]

### **Judicial pronouncement in favour:**

The **M.P. State Commission** observed in a case [21] [**R-6- Punjab Nursing Home v. Kailash Marodia, Ill (2003) CPJ 194-M.P. State Commission**] that 'in medical field the word 'consent' carries a great importance. The concept of consent is not new to the modern world. Consent plays a remarkable legitimate role in the field of medical negligence. The consent should be a **free consent** as envisaged by **Section 10 of the Indian Contract Act** in the context of medical negligence. A duty is cast upon a medical practitioner to provide that he did not use any **undue influence** in order to get a legally valid consent from a patient and he has at no point of time utilized his **dominant and superior position** in obtaining consent from **patient** who is always practically in a **precarious need and difficult position**. In case the consent is not obtained that will give rise to cause of action for seeking a remedy criminally for making any invasive procedure without consent of patient amounting to assault, with criminal force under **Section 350 IPC** [22] and also seek civil remedy for compensation for the injury occurred to the patient in accordance with Law of Tort. According to **Law of Tort**, if the doctor does not seek a legally valid consent, and even if there are no damages in the form of negligence, the patient can sue the doctor for injury upon his personal or private rights encroached upon which has been endowed upon him by legislative enactment.

The Commission further observed that the **principle requiring consent** applies in all the cases except in certain circumstances in which a doctor may be entitled to proceed without patient's consent, **firstly**, when the patient's balance of mind is disturbed; **secondly**, when the patient is incapable of giving consent by reason of unconsciousness; and **finally**, when the **patient is a minor**. [4]

### **Provisions of Other Acts:**

### **The Medical Termination of Pregnancy Act, 1971:**

"No pregnancy of a woman, who has not attained the age of eighteen years, or, who, having attained the age of eighteen years, is a mentally ill person, shall be terminated except with the consent in writing of her guardian". [Section 4(a)] [25]

"Save as otherwise provided in clause (a), no pregnancy shall be terminated except with the consent of the pregnant woman". [Section 4(b)] [25]

### **The Transplantation of Human Organ Act, 1994:**

"Donor" means any person, not less than eighteen years of age, who voluntarily authorizes the removal of any of his human organs for therapeutic purposes under sub-section (1) or sub-section (2) of Section 3. [Section 2(f)] [26]

Similarly minimum age for donating blood as mentioned is eighteen years for blood donor. [27]

### **Age of consent in UK:**

In United Kingdom, Section 8 of the Family Law Reforms Act, 1969 has prescribed the legal age of consent as 16 years, and in such cases there is no need or legal requirement to obtain the consent of the parents or guardian. However, if major or hazardous elective surgery is contemplated on such a person over 16 years of age, it is wise to discuss the decision with parents, but only if the patient permits for it. If the patient refuses such a discussion, the parents may not be consulted. [4]

"Section 8 of the Family Law Reform Act, 1969 provides that the consent to medical, surgical or dental treatment of a minor who has attained the age of 16 years shall be effective consent and that in such cases it is not necessary to obtain the consent of the parent or guardian". [37]

"The written consent of the patient who is to undergo a termination of pregnancy should always be obtained. If the patient is married and living with her husband the proposed operation should be discussed with him if time and circumstances permit. Every endeavour should be made to the termination of the pregnancy unless the patient expressly forbids it. If the doctor in attendance honestly believes that the grounds for termination are reasonable despite an objection from the husband he need have little fear. If the patient is single, no consent is required from the putative father. It is not considered necessary in law to obtain the consent of the parents to terminate the pregnancy of an unmarried girl who has attained the age of 16. Prudence dictates, however, that the doctor should endeavour to obtain the consent of the parents of such girl if she is living with them. The practitioner must obtain the girl's authority before he seeks the consent of her parents as her wishes must

always be respected. If the girl is under 16 her parents should always be consulted even if she herself forbids the doctor to do so. In such cases written consent of the parents should be obtained but their refusal should not be allowed to prevent a lawful termination to which the patient herself consents and which in the doctor's opinion is clinically necessary. A termination should never be carried out in opposition to the girl's wishes even if the parents demand it". [37]

"In so far as adults are concerned (in this context 'adult' means that the patient has attained the age of 16) the practitioner must appreciate that the adamant refusal of the patient to permit the administration of a blood transfusion in any circumstances places a restriction upon him". [37]

### **Age of consent in USA:**

"In the case of children the position is more complicated. Up to the age regarded by the courts as the 'age of consent' the parent or guardian must give the consent. From the 'age of consent' to the age of majority-21 years- it is safest to have consent from the parents of the minor if this is possible". [35]

### **Consent and criminal law in India:**

The term 'consent has found mention in many Sections of the IPC (Like: 87, 88, 89, 90, 91, 92, 313, 375, etc.)

Certain Sections of the Indian Penal Code (IPC) [6] are providing protection to the doctors in special circumstances. It appears to proceed upon the maxim '**volenti non fit injuria**'. **He who consents suffers no injury**. This principle is founded on upon two very simple propositions:

- (i) That every person is best judge of his own interest;
- (ii) That no man will consent to what he thinks hurtful to himself.

### **Summary and Conclusions:**

Issue of consent is a low priority area for most of the doctors due to lack of awareness on legal rights of others and illiteracy of patients and as well as no awareness about their rights and no faith on judiciary due to complexity of legal procedures and cost of litigation.

Medical science and human body is of very complex nature and to achieve capability of understanding it and **of forming a rational judgment regarding treatment / operation / procedure, and as to its effect upon his interests** require at least 18 years of age to be attained by the patient.

Keeping in view the complex nature of medical science and human body, the MCI the highest body in India for making standard of medical education has

fixed 17 years of age for entering into medical profession.

No minor can enter into a legal contract until he attains the age of majority or adult years i.e. 18 years in India. [2]

A child above twelve year of age is considered capable of giving a valid consent for clinical examination, diagnosis and treatment, u/s 88 IPC. [6] The usual convention is that a person can give consent for general physical examination after 12 years of age and for surgery after 18 years of age. The difference in these views needs an explanation. Section 88 of the IPC, which is specifically meant for doctors –when read with Section 90 IPC –, suggests that the valid age of consent is 12 years, if the act is done in **good faith** for the **benefit of the person** (e.g. surgery). Thus, it would appear that a person could give valid consent for surgery at 12 years. However, in such cases, although a criminal charge cannot be brought against him, but civil suit can be initiated for damages because a child below 18 years cannot enter into a valid contract. [6] Criminal law in India put doctors on different footings and provided protection from criminal cases in General Exceptions which cannot be basis of routine medical practice in India.

The concept of a “**mature minor**” i.e. a minor who is mature enough to understand the implications of his or her treatment though well established in some western countries is not routinely recognized in India. It is also important for a **Doctor to remember that even though a minor may represent himself/herself as a major even the onus of finding out whether the patient is minor or not is on the physician.** [2]

Either by filing a PIL under Article 32 or 226 in the Supreme Court of India or any of the High Courts this issue of age of consent in medical profession can be solved. Alternatively Medical Council of India in consultation with Indian Medical Association and other professional and ethical bodies can come to a consensus about the age of consent. Accordingly authors of the books dealing with this topic edit their books to provide clear information about this human rights issue.

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