Indian Journal of Forensic Medicine and Pathology

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Indian Journal of Forensic Medicine and Pathology

July - Sept 2010
Volume 3 Number 3

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Indian Journal of Forensic Medicine and Pathology
Volume 3, Number 3, July - Sept 2010

The Art of Designing and Presentation of Scientific Posters

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ABSTRACT

Communication skills are perhaps as ancient as the mankind itself. Teaching faculty of medical curriculum has the onus of upgrading oneself with the contemporary methodologies of scientific communications. In addition to the conventional 'oral presentations', the scientific gatherings are making a paradigm shift towards 'poster presentations'. The worthiness and pre-requisites of designing and presenting a scientific poster is discussed.

Key words: Communication, poster design.

INTRODUCTION

'It takes intelligence, even brilliance, to condense & focus information into a clear, simple presentation that will be read and remembered. Ignorance & arrogance are shown in a crowded, complicated, hard to read poster'

***MH Briscoe*[1]**

A scientific poster is a document that would communicate a research at a scientific gathering. A reasonably good poster shall be an effective tool of visual communication. It shall initiate conversation among the audience and transmit the message of the author/s. It may be achieved by focusing on a single message, self-explanatory graphs and images, sparingly used text matter and above all, an obvious, well ordered sequence of events.

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(Received on 15.05.2010, accepted on 17.06.2010)

DISCUSSION

Conceptualization of a poster: [2]

The scientific gatherings would essentially have three categories of audience. They include those in the presenter's own field of specialization, closely related fields of specializations and unrelated fields. Irrespective of the category, the poster presentation would allow a personal interaction with the 'interested audience'. A reasonably designed poster shall provide entire context of the work to the readers and shall be conveniently comprehended within 10 minutes. The language shall be lucid, avoiding jargons and acronyms. Interpretation of findings shall be convincing enough to all categories of readers.

Components of a poster: [3]

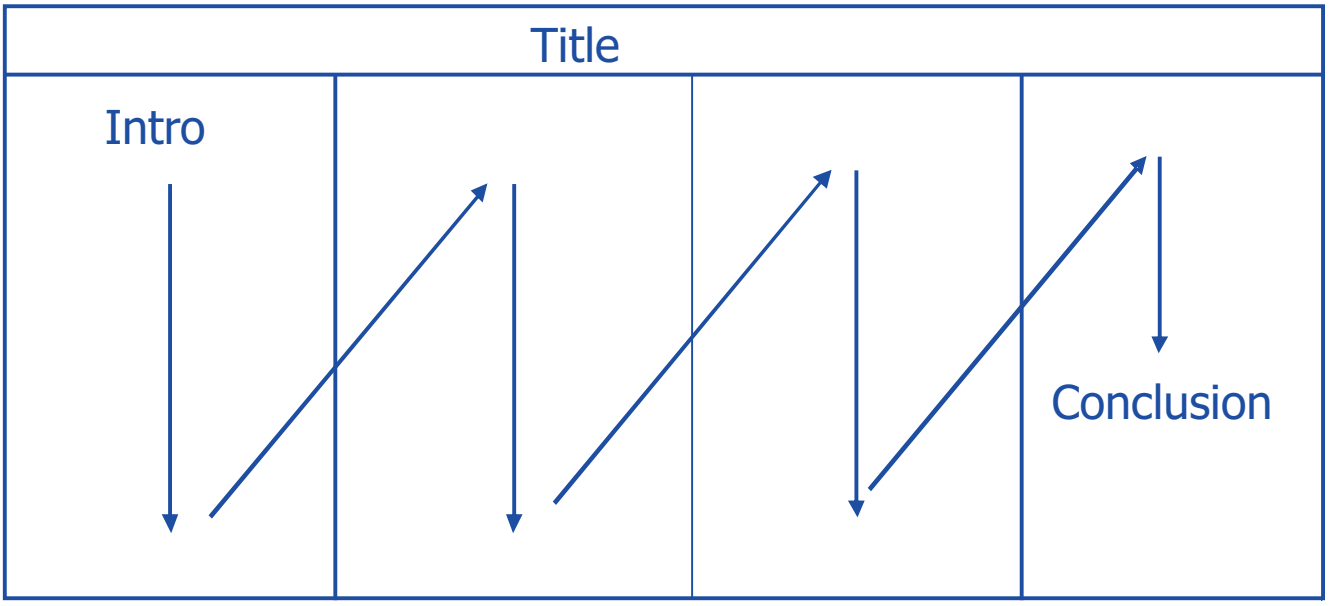
The title shall be short and catchy, not exceeding one line. It shall be bold with a size of 20-24mm and shall include the name/s and affiliations of the author/s. Abstract is not needed as a poster component, but may be sent to the organizing committee of the conference for prior approval and also for the possible inclusion in the

proceedings of the conference. Introduction shall be limited to an absolute minimum, with communicative illustrations and photographs, not exceeding 200 words. Elaborate and historical remarks may better be refrained from. A brief description of experimental equipments, methods adopted and statistical analyses would constitute 'materials and methods', which shall be limited to 200 words. Results shall be represented by qualitative and descriptive figures, tables and legends limited to 200 words. Concluding part shall provide a reasonable justification between the proposed hypothesis and achieved outcome in less than 200 words. A maximum of 10 citations would suffice in the reference list. Disclosures for conflicts of interest, funding sources may be put forth in 'acknowledgments' of not more than 40 words. Address of correspondence of the presenter in the form of mailing id, website may be indicated within 20 words.

METHOD OF DESIGNING

Advance planning of the contents have to be made based on a particular theme. Then the proposed size of the poster has to be determined. Poster orientation could be made either in portrait or landscape format. Style of the poster may vary depending upon the theme of the poster and specifications laid down by the organizing committee of the conference. It could be one large poster (33 x 44cm), individual columns (three 11 x 48 cm) or individual pages (twelve 8 x 11 cm). [3] The style of the poster could also be chosen from software programmes like powerpoint, LaTeX, framemaker and so on. [3]

It would be highly beneficial to have a drawing of a scaled model of the layout, typically using 3 to 5 columns. The material shall be arranged vertically from top left corner to bottom right corner. This would make it easier for the viewers to read, without having to move back and forth. Logical sequencing of the contents may be made into different sections with relevant numbering of each section to make the flow, obvious.



A general layout of the poster is depicted below.[4]

The background of the poster shall not only be a compliment to the font color but shall also offer a best contrast for graphics and photographs. Softer colors' like blue, white and grey suits more as a pleasant background. 'Intense colors' like black and red may be chosen as borders for emphasis and clarity.[3] Two or three related background colors may be used to 'unify' the concepts, like materials, methods, results and discussion with one background and rest of the

components in a different background. Sans serif is the suggested font style, which has a uniform thickness and hence makes the visibility clear. The font pattern may be chosen from the likes of tahoma, arial and century gothic.[3] The font size may vary to fit the space as allotted in the conference hall. On an average, the title shall have a size of 72 to 85 points, name/s and affiliations of author/s; 56 points, subject headings; 54 points, sub-headings; 36 points, body text; 24 – 34 points, captions/ legends; 18 points. [5] Figures, in the form of histograms, bar diagrams and pie charts may be used. Photographs may be used instead of a descriptive text. Irrelevant portions of the photographs shall be cropped up. The poster text shall be double spaced with left justification. It shall be conveniently comprehendible from a minimum distance of six feet.[3]

Umpteen number of software programmes are available for poster designing. One may choose them depending upon ones' requirements and affordability. QuarkXPress, InDesign, LaTeX may be used for page lay out applications of large format posters. Illustrator, CorelDRAW, Freehand, and Omnigraffle may be beneficial for posters using graphic packages. [6] Poster template files may be accessed from google.com. 'Template text' made available on various web sites provide further advice on poster designing. After being displayed at the conference, the poster may be converted to jpg format for further uploading it in free image hosting site, 'flicker.com'. Visitors of the site may be asked to communicate in the form of 'electronic post-it notes'.[6] This would allow further interaction of the presenter with the 'interested audience'. The poster may be printed in laser print, color inkjet print, plotter print, offset print or a digital collage. The suggested paper types for poster printing are bond paper, inkjet paper / coated paper, chart paper or poster paper.[6]

Installation and presentation: [6]

Poster components shall be light and portable, so as to shift, should there a need to relocate in a different hall in an ongoing conference. Accessories like velcro fastener, thumb tacks, double sided adhesive tapes/stickers shall always be supplemented with. A brief presentation of 2-5 minutes shall be made for a group of 8–10 viewers. Miniature handouts may be circulated among the viewers for better comprehension.

POSTER ETIQUETTE

The presenter shall always be available at the site of poster display, with a name tag, acknowledging the presence of audience. Extempore presentation would convey the command of the presenter over the subject matter displayed. The presenter, if 'wardrobe conscious', can choose to wear the outfits complementing the background color of the poster.

SUMMARY AND CONCLUSION

A poster allows casual comprehension of the subject matter, by the readers, unlike an oral presentation being made in a rather crowded conference hall. Since the presenter is addressing mini groups, the stage fear may be considered as eliminated. Well preserved poster may later be displayed in the departmental hallways of the presenter. It could also be submitted to scientific websites like e-poster.net and the like. Thus the main aims achieved in a poster presentation are; a complex research being conveyed in a simplest form and a discussion being held between presenter and audience in an 'informal atmosphere'.

CONFLICT OF INTEREST

The first author was an invited resource faculty for the 'Continuing Medical Education Programme in Forensic Medicine for the Southern States of India' (SIFCOM – 2), held on 27th September 2009, organized by the Dept of Forensic Medicine and Toxicology, Kasturba Medical College, Manipal, (Affiliated to Manipal University) Karnataka, INDIA, and had presented the contents of this article in the proceedings of the CME.

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Indian Journal of Forensic Medicine and Pathology
Volume 3 Number 3, July - Sept 2010

Knowledge about Medicolegal Problems Amongst the Interns and Residents from a Rural Tertiary Care Teaching Hospital in Western Maharashtra - A cross sectional study

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Phalke Deepak B***

ABSTRACT

Background: "Medico legal" is the term that incorporates the basics of two professions i.e. medicine and law. "Medical Jurisprudence" is the application of knowledge of law in practice of medicine in other words; it deals with legal aspects of medicine such as legal rights, privileges, duties, and obligations of a medical practitioner". The term medico legal has gained a lot of importance in the past years after the passage of the Consumer Protection Act in 1986. Although forensic medicine and medical jurisprudence is the part of curriculum during the second year of medical school in India, still many interns and residents lack the knowledge about medico legal issues. **Aims:** The aim of the present study was to assess the knowledge regarding medico legal problems amongst interns and residents at a rural tertiary care teaching hospital in western Maharashtra. **Material & Methods:** This was a cross-sectional study conducted at Rural Medical College and Pravara Rural Hospital, Loni Dist. Ahmednagar (Maharashtra) consists of total 160 doctors who included 80 interns and the same number of residents over a period of six months from July 2009 to December 2009. A predesigned and pretested questionnaire was used for the data collection. **Results:** In the present study, MLC (medico legal case) is a common abbreviation used by the residents and interns while working in the casualty and the wards, most of them (90%) knew what it stood for. More than 50% (n=52) residents were unaware of the cases to be informed to the police while among interns only 19% (n=15) were correct. 68 (78.75%) interns and 73 (91.25%) residents knew that post-mortem didn't mean that it had to be a police case. **Conclusion:** Overall knowledge of medico legal issues among our residents and interns had not shown upto the mark. There is a need to train these young doctors about various medico legal aspects, their role and responsibilities. The prevalence of certain misconceptions and void in the knowledge about medico legal issues can be done away be giving repeated trainings to them.

Key words: Medico legal, Knowledge, Interns, Residents

INTRODUCTION

India has developed a vast network of both rural as well as urban health care facilities following its independence from the colonial rule. It has shown a promising rise in both medical professionals and educational institutions. The literacy rate of India is fast catching up with that of the western world. This has brought a striking rise in the level of awareness about health and health care facilities among common people. Each patient is more responsible, aware and informed about his problem. The risks, benefits, alternatives to therapy and side effects are all known. One of the consequences of this change has been the use of judiciary to seek justice against the alleged malpractices of doctors/hospitals by the aggrieved patient or the relatives. The Mudaliar committee

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(Received on 16.07.2010, accepted on 14.08.2010)

in 1962 has recommended creation of a separate cadre of trained medical jurists in each state to look after such cases. The Madhya Pradesh govt. has established India's first Medico Legal Institute in Bhopal, taking cognizance of the Central Medico Legal Advisory Committee, set up by Union Ministry of Health in 1958.

The Government of India passed an act called Consumer Protection Act in 1986 (CPA) [1] with an aim to protect the interest of consumers. However dilemma persisted about the inclusion of medical services until the Supreme Court of India decided (in Indian Medical Association v VP Shantha) [2] in 1995 to bring it within the ambit of a "Service" as defined in CPA. Beside, medical profession is governed by code of medical ethics and etiquette as laid down by Medical Council of India[3]. The Supreme Court decision was followed by a sharp rise in number of litigations against doctors and hospitals.

"Medico legal" is the term that incorporates the basics of two professions i.e. medicine and law. "Medical Jurisprudence" is the application of knowledge of law in practice of medicine in other words; it deals with legal aspects of medicine such as legal rights, privileges, duties, and obligations of a medical practitioner". It includes questions of legal and ethical duties of physicians and medico legal assessment of patients for the smooth functioning of society. This field has gained a lot of importance in the past years after the passage of the Consumer Protection Act in 1986. Although forensic medicine and medical jurisprudence is the part of curriculum during the second year of medical school in India, still many interns and residents lack the knowledge about medico legal issues. In these days and age an ignorant doctor can easily make a grave mistake if he is unaware of his rights and responsibilities. The aim of the presented study was to assess the knowledge regarding medico legal problems amongst interns and residents from a rural tertiary care teaching hospital in western Maharashtra.

MATERIALS AND METHODS

A cross-sectional study was conducted during the period of July – December 2009 at Rural Medical College (RMC) and Pravara Rural Hospital (PRH), Loni, Ahmednagar, Maharashtra, India. Rural Medical College is a recognized institution for imparting medical education, both at under graduate and post graduate level. Pravara Rural Hospital is a tertiary level health care centre attached as a teaching hospital of RMC, Loni. The study population consisted of total 160 doctors who included 80 interns and the same number of residents. The medical professionals surveyed belonged to various departments of the Pravara Rural Hospital and medical college. A pre-designed, pre-tested self administered questionnaire in English was devised to collect data. The tool used had two parts; l) to obtain demographic data i.e. age, sex, marital status, academic qualification, work experience etc. and 2) Legal terms, basic rights, fundamental duties, admission/transfer/ discharge/ death, legal control, medico-legal cases. Data was analyzed in the form of percentages and proportions and Z- test was applied. Z values more than 1.96 were considered as statistically significant.

RESULTS

It was observed from Table-1 that out of total 160 participants, 110 were males (68.75%) and 50 were females (31.25%). There were 53, 70 and 37 participants in the age groups 22-25, 25-28 and >28 years respectively. Male to female ratio was 2.2:1 which shows male predominance. The percentage of first year residents participating in the study was very low. This was perhaps due to extra work load and non availability of time to get involved in the study.

It is evident from Table-2 that the MLC (medico legal case) is a common abbreviation used by the residents and interns while working in the casualty and the wards, most of them (90%) knew what it stood for. More than 50% (n=52) residents

Table 1: Demographic Characteristics of the Study Population

Particulars	Numbers	Percentage
Gender		
Male	110	68.75
Female	050	31.25
Marital Status		
Married	022	13.75
Unmarried	138	86.25
Age (in years), Mean (SD)		
Male	26.74 (1.70)	
Female	26.01 (1.45)	
Length of Service		
0 – ½ years	32	20.00
½ - 1 years	64	40.00
1 - 1 ½ years	12	06.87
1 ½ - 2 years	22	13.75
2 ½ - 3 years	30	19.37

were unaware of the cases to be informed to the police while among interns only 19% (n=15) were correct. 71.25% respondents knew that in which cases post-mortem can be done without informing the relatives. 68 interns (78.75%) and 73 residents (91.25%) knew that post-mortem didn't mean that it had to be a police case. In the present study, 13.5% respondents didn't know what to do with the dead body in case their hospital bills are due. 83.75% of the young doctors knew that all natural deaths within 24 hours should be sent for autopsy. 42.5% interns and 31.5% residents had no idea that there had to be two copies of death certificate in dying declaration. 86.5% of the interviewed were aware that in case of death of an unknown admitted patient, police has to be informed. More than half (61%) interns and (28%) residents were unaware of their responsibility of issuing an injury certificate. 61.8% respondents think that they can't do postmortem after they have given cause of death. In this world of mobile phones 71.0% interns and 26% residents consider telephonic orders to be legal. But beware doctors 'written orders are the real orders'.

DISCUSSION

There is a severe dearth of studies assessing the knowledge, attitude and practices about medico legal issues from the various sections of medical professionals. This study made an honest attempt to fulfill this void. Overall knowledge of medico legal issues among our residents and interns had not shown upto the mark. Our findings were in agreement with those of Mohite PM, et al[4] who performed a similar study in 2000 showing high level of ignorance about medico legal issues. This lack of knowledge is not restricted to professionals from India only. Even developed nations like USA have issues related to lack of knowledge about medico legal aspect of medicine. Darvall L, et al[5] concluded that there was a significant disjunction between legal standards and doctors' awareness of those standards, thereby creating a significant source of liability for doctors. Moreno-Hunt, et al[6] also observed significant lacunae in the knowledge of medico legal issues among obstetrics and gynecology residents in USA. Over 92% respondents were unaware of the laws related to their work as found by ER Walrond, et al[7].

Similarly Gebremariam and Hagos[8] concluded that health workers lacked the knowledge on the legal basis of their relationship with their clients. The changing face of the doctor-patient relationship and rapid commercialization of health services has posed new challenges[9]. There are a large number of misconceptions about various medico legal issues among interns as well as residents.

CONCLUSION

Legal aspects of medicine have always formed an important component of medical education.

Table 2: Assessment of Knowledge about medicolegal problems in the study population

	Interns (n = 80)			Residents (n = 80)			
Questions on Knowledge	**Response (%)**	**Correct responses (%)**	**Incorrect responses (%)**	**Response (%)**	**Correct responses (%)**	**Incorrect responses (%)**	**Z - value**
1. Which deaths will you inform to police?	80 (100%)	15 (19%)	65 (81%)	80 (100%)	28 (35%)	52 (65%)	6.11
2. Is an intern authorized to do post mortem?	80 (100%)	80 (100%)	00 (0%)	80 (100%)	74 (92%)	06 (8%)	3.03
3. According to law who can perform a post-mortem?	80 (100%)	64 (80%)	16 (20%)	80 (100%)	53 (66%)	23 (34%)	6.93
4. Should cases of attempted suicide be informed to police by private practitioner?	76 (95%)	19 (25%)	57 (75%)	75 (94%)	15 (20%)	60 (80%)	6.78
5. Is it necessary to inform all cases of tubectomy deaths to the police?	40 (50%)	15 (37%)	25 (63%)	69 (86%)	38 (55%)	31 (45%)	9.70
6. Do the staffs working in Govt. hospitals come under the ambit of "CPA"?	44 (55%)	25 (57%)	19 (43%)	73 (91%)	63 (86%)	10 (14%)	10.14
7. Can the police or the court compel a doctor to examine victims of rape in absence of valid consent?	52 (65%)	24 (46%)	28 (54%)	80 (100%)	41 (51%)	39 (49%)	8.88
8. Can the resident legally issue injury certificate in admitted cases?	67 (84%)	26 (39%)	41 (61%)	73 (91%)	53 (72%)	20 (28%)	7.94
9. In case of death due to drug reactions will you inform the police	63 (79%)	29 (46%)	34 (54%)	69 (86%)	46 (67%)	23 (33%)	8.45
10. Patient dies of air embolism caused by intern, who will be responsible?	80 (100%)	29 (36%)	51 (64%)	80 (100%)	44 (55%)	36 (45%)	7.72
11. Is it legally acceptable to write down orders given telephonically by seniors?	65 (81%)	19 (29%)	46 (71%)	61 (76%)	45 (74%)	16 (26%)	7.95
12. Whether consent from relatives is necessary in post-mortem of MLC?	80 (100%)	58 (72%)	22 (28%)	80 (100%)	56 (70%)	24 (30%)	7.17

Thus, from an early stage the future doctors and medical practitioners are made familiar with the legal issues attached to medical practice. The application of the Consumer Protection Act to the medical professionals has only served to bring into focus some of the legal liabilities of the doctors. There is a need to train these young doctors about various medico legal aspects, their role and responsibilities. The prevalence of certain misconceptions and void in the knowledge about medico legal issues can be done away be giving repeated trainings to them. The training programmed must be able to communicate the message in simple and lucid manner and devised in spirit of the local environment and culture. CMEs, workshops or lectures can be used efficiently to convey the broader message to the target professionals.

ACKNOWLEDGMENT

We deeply acknowledge the help rendered by medical Interns Mr. Niket Arora and Ms. Shilpa Kanakam. We also extend our gratitude to Dr. Y. V. Sharma, Ex-principal, Rural Medical College, Loni who granted permission and Pravara Medical Trust, Loni for the support.

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Indian Journal of Forensic Medicine and Pathology
Volume 3 Number 3, July - Sept 2010

Sociodemographic Profile of Fatal Poisoning in Gulbarga Region- A two year study

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ABSTRACT

Background: Poisoning is one of the common causes of unnatural deaths and continues to a major health problem in the developing countries. **Material & Method:** A prospective study of sociodemographic profile of poisoning cases of Gulbarga region from1st January 2004 to 31st December 2005 using the data from hospital admission papers, police records, postmortem reports, suicide notes if any, history from the relatives & friends accompanying the deceased and chemical analysis report from Regional Forensic Science Laboratory. **Results:** Out of 910 autopsies conducted in District Hospital of Gulbarga, during the study period, 188 were due to poisoning. Majority of the victims were in the age group of 20 to 30 years. More than three fourth of the victim were from rural areas. Distribution of suicidal cases showed male preponderance, majority of the victims being illiterate and agriculturist by occupation with maximum number of fatalities in the month of August. Most of the cases were suicidal in nature and financial problem was the most common reason for consumption of poisons. Chronic illnesses, harassment by in-laws, psychiatric illness, and academic failure were the other main reasons for poisoning. Chemical analysis report showed that Organophosphorus groups of compounds were the most commonly found poison. Organochlorines and carbamate compounds were the other commonly used poisons.

Key words: Poisonings, Suicide, Organophosphorus compounds

INTRODUCTION

Poisonings both accidental and intentional are a significant contributor to mortality and morbidity throughout the world. Acute poisoning forms one of the commonest causes of emergency hospital admissions. Majority of fatal poisoning cases occur in the developing countries particularly among the agricultural workers.

According to WHO, three million acute poisoning cases with 2,20,000 deaths occur annually. It has been estimated that about 5-6 persons per lakh of population die due to poisoning every year[1], mortality rate in developed countries due to poisoning is 1-2% whereas in India it varies from 15-35%.[2]

Considering these facts about the magnitude of the problem an attempt has been made in the present study to make an analysis of poisoning cases in terms of various epidemiological features. The results of study is based on the findings of a two year prospective study which is undertaken at the department of forensic medicine to study the impact of age, sex, domicile, educational status, marital status, seasonal variations on the poisoning fatalities in this region. The present study also aims to know substances commonly used by the victims. The present study may help different professionals to know the reasons for such fatalities and may help them suggest suitable preventive measures to limit such cases in the future if not totally eliminate such cases.

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(Received on 26.08.2010, accepted on 25.11.2010)

MATERIAL AND METHODS

The present is a prospective study comprises the profile of all 188 poisoning deaths that are subjected to autopsy at Government General Hospital, Gulbarga during the study period i.e., from 1st January 2004 to 31st December 2005. During the study period, the total 910 autopsies are conducted out of which 188 deaths are due to poisoning. A proforma was evolved to get detailed uniform information from different sources. These different sources are hospital case records, police records suicide notes left over by victims, postmortem reports of all poisoning cases, chemical analysis reports from Regional Forensic Science Laboratory and also by direct interrogation from the relatives, friends and other accompanying the deceased. Only cases with clear history of poisoning were included. All cases of acute alcohol /drug intoxication which contributed to the cause of death in road traffic accidents were also included in the present study.

RESULTS

Total 910 autopsies were conducted in the study period out of which 188 deaths are due to poisoning (20.66%). Poisonings are the second most common manner of unnatural deaths (20.66%) after the accidents i.e., 64.12% of all autopsies conducted.

As depicted in the table-1 that the maximum number of deaths due to poisoning are in the age group of 20 to 30 years (30.85%) followed by less than 20 years (23.41%). Poisoning deaths showed that the male are preponderance with male to female ratio of 1.47:1.00 (Table-1).

Majority of poisoning deaths are seen in married people i.e., 112 (59.57%) (Table-2). Rural victims are outnumbered the urban victims constituting 148 cases (78.72%) (Table-3). Majority of the victims are illiterate i.e., 95 (50.53%) (Table-4). Most of the victims 79 (42.02%) are agriculturists by occupation (Table-5).

The most common reasons for consuming the poison is due to financial problems the victim faced prior to death in as many as 37.23%. The other reasons are due to, chronic illnesses (15.96%), academic failure (5.32%), dowry related problems (4.79%), extramarital affairs of self /spouse (3.72%), love failure (2.66%), being infected with HIV (2.66%), sexual assaults (1.06%), etc. (Table-6).

Maximum number of deaths due to poisoning are documented in the month of August i.e. 28 (14.89%) followed by 22 cases (11.79%) in the month of December and least number occurred in the month of April (3.75%) (Table-7).

As per chemical analysis report, the most common poison which responsible for causing death is organophosphate compounds 63 (33.51%) followed by organochlorine compounds 39 cases (20.75%). Corrosives are the least common group of poisons used (1.06%) (Table-8). Although the chemical analysis report showed negative in 18 cases while the cause of death in such cases is

Table1: Age and sex wise distribution of poisoning deaths

Age	Males		Females		Total	
	No=112	%	No=76	%	No=188	%
<20 yrs	26	21.21	18	23.69	44	23.41
20-30yrs	33	29.67	25	32.89	58	30.85
30-40yrs	19	16.96	09	11.85	28	14.89
40-50yrs	12	10.71	08	10.68	20	10.64
50-60yrs	15	13.48	11	14.62	26	13.83
>60yrs	07	06.37	05	06.77	12	06.38

attributed to poisoning due to positive findings of poisoning which based on clinical signs and symptoms, hospital case records, inquest papers and other circumstantial evidences.

Table 2: Distribution of poisoning deaths according to Marital Status

Marital Status	Males		Females		Total	
	No= 112	%	No=76	%	No=188	%
Unmarried	26	23.21	19	25.00	45	23.94
Married	68	60.72	44	57.89	112	59.57
Divorcee/ Widower	18	16.07	13	17.11	31	16.49

Table 3: Domicile wise distribution of poisoning Deaths

Domicile	Males		Females		Total	
	No=112	%	No=76	%	No=188	%
Rural	87	77.68	61	80.26	148	78.72
Urban	25	22.32	15	19.74	40	21.73

Table 4: Distribution of deaths due to poisoning according to Educational status

Education	No =188	%
Illiterate	95	50.53
Primary	46	24.47
Higher Primary	23	12.23
Graduate	24	12.77

Table 5: Distribution of poisoning Deaths according to Occupation

Occupation	Total	
	No=188	%
Agriculture	79	42.02
Labourer	42	22.34
Business	22	11.70
Student	17	9.04
Govt/private service	21	11.17
others	07	3.72

Table 6: Reasons for consumption of poisons

Reason	Males		Females		Total	
	No=112	%	No=76	%	No=188	%
Financial problems	49	43.75	21	27.63	70	37.23
Chronic Illness (other than psychiatric illness)	18	16.07	12	15.79	30	15.96
Psychiatric Illness	07	06.25	03	03.93	10	05.32
Harassment by in-laws	00	00.00	09	11.84	09	04.79
Extramarital Affair of self or spouse	03	02.68	04	05.26	07	03.72
Love Failure	02	01.79	03	03.93	05	02.66
Sex Assault	00	00.00	02	02.63	02	01.06
HIV Positive	03	02.68	02	02.63	05	02.66
Academic Failure	04	03.57	06	7.89	10	05.32
Death of Family Member	00	00.00	04	5.26	04	2.13
Infertility	00	00.00	03	3.95	03	01.60
Not Known	03	02.68	02	2.63	05	02.66
Accidental exposure	23	20.54	05	06.58	28	14.89

Table 07: Month wise distribution of poisoning Deaths

Month	Males		Females		Total	
	No=112	%	No=76	%	No=188	%
January	11	9.82	07	9.21	18	9.57
February	08	7.14	05	6.58	13	6.91
March	08	7.14	07	9.21	15	7.98
April	04	3.58	03	3.95	07	3.73
May	06	5.36	04	5.26	10	5.32
June	07	6.25	06	7.89	13	6.91
July	10	8.93	07	9.21	17	9.04
August	18	16.07	10	13.16	28	14.89
September	11	9.82	05	6.58	16	8.51
October	06	5.36	06	7.89	11	5.85
November	08	7.14	09	11.85	17	9.04
December	15	13.39	07	9.21	22	11.70

Table 8: Distribution of poisoning Deaths as per autopsy findings and results of chemical analysis

POISONS DETECTED	Males		Females		Total	
	No=112	%	No=76	%	No=188	%
Organophosphates	36	32.14	27	35.53	63	33.51
Organochlorines	17	15.18	22	28.95	39	20.75
Carbamates	20	17.86	12	15.79	32	17.02
Benzodiazepines	03	02.68	03	03.95	06	03.19
Alcohol	08	07.14	00	00.00	08	4.26
Snake bites	08	07.14	04	09.26	12	06.38
Scorpion bite	04	03.58	01	01.32	05	02.66
Corrosives	02	01.79	00	00.00	02	01.06
Organic irritants	01	00.89	02	02.63	03	01.60
Negative results	13	11.61	05	06.58	18	09.57

DISCUSSION

Poisons are subtle and silent weapons, which can be easily used without violence and often without arousing suspicion. In recent times due to vast development in all fields of life like industries, medicine and agriculture a significant number of new poisonous compounds have appeared as new a poisonous substance which has resulted in more number of fatalities due to poisoning.

The present study consisted of 188 cases of fatal poisonings which were subjected to autopsy at Government General Hospital, Gulbarga. The results of the present study were compared with the studies by different workers from other parts of the country and abroad as well.

In the present study male victims (112) outnumbered the females (76). The male female ratio is being 1.47:1 and these tallies with the other studies [3, 4,5,6,7.] The high incidence may be because males are more exposed to stress, strain and occupational hazards compared to females[8, 9].

The most common age group involved in our study was between 20-30 years followed by the age group between 1-20 years. Thus there is a need for intervention program designed specifically for adolescents and young adults. A pattern similar to this has been reported else where in India and abroad [3, 4, 6,10,11,12]. This might be due to modern life style, stress, tension, family and social problems.

Maximum number of fatalities in the study was found in the married which was found to be similar with other studies[3, 13, 14]. More number of deaths in the married people can be explained by the fact that married people are more likely to come under the responsibilities and stress of life besides dowry related problems.

Farmers were most common group affected by poisoning in the present study accounting for 42.02% which coincides with other studies [14,15]. This is so because larger segment of our population comes from these groups. The study also shows that maximum number of victims were from rural areas with 78.72%. This can be explained by the fact that majority of people in these area are dependent on agriculture and this makes more accessible to agriculture related poisons. More than half the victims were illiterates (50.53%).

Analysis of poisoning deaths that took place in two year period shows that incidence of such cases are more in the months of August followed by December. Reason could be more usage of the pesticides for crops during these months making them easily available to the vulnerable people. But this is in contrast with study conducted by Dattarwal S.K in which more cases are found in the month of May and June.[14]

Majority of the poisonings are suicidal in nature except in 28 cases which are accidental in nature. Out of these 28 cases 17 are due to snake and scorpion bites. There is no single case of homicidal poisoning in our study. These finding is similar to the other studies conducted[16, 17,18,19,20,21]. This inference of manner of death is based on history given either by police or and relatives. The most common reasons for consuming the poison is due to financial problems the victim faced prior to death in as many as 37.23%. The other reasons are due to, chronic illnesses, academic failure, dowry related problems, extramarital affairs of self /spouse, love failure, being infected with HIV, sexual assaults, etc. No similar study is found in the literature for comparison.

The chemical analysis reports from Regional Forensic Science Laboratory indicate that the organophosphorus poisons are responsible causing maximum number of deaths. The next is organochlorines followed by carbamates. Similar types of findings are noted by the other workers[9,20, 22, 23]. This could be attributed to easy availability of these insecticides related to their occupation or otherwise. The viscera were not sending for chemical analysis in 17 cases of snake and scorpion bite since there are no facilities available in our region to test for the presence of such venom or toxins. In remaining 171 cases, the viscera were sent for chemical analysis. Out of 171 cases, the 21 cases showed negative results of which three cases are due to organic irritants which included two cases of poisoning by datura seeds and one by seeds of abrus precatorius. In these three cases seeds are recovered from the stomach of the deceased.

Most of the authors except Gupta B.D [20] and Nigam et al[24] have studied the incidence of type of poisoning based on history given to them by police, relatives of victim and medical case papers and not based on reports of chemical analyzer[16,17,18,19,21]. In the present study, we have tried to catagorise the poisons causing death based on autopsy examination and chemical analysis report.

LIMITATIONS OF THE STUDY

This is a study conducted in a tertiary care teaching hospital in the city of Gulbarga and may not reflect the complete scenario/ magnitude of the problem in this part of the country.

There may be good number of cases in the community, which might not have been reported at all. Some other cases might have been taken care of by primary health centres and hence exact incidence of the suicidal cases in the study cannot be determined.

CONCLUSION

Pattern of poisoning in present study is more or less similar to the pattern found in most of the other studies. Most poisoning is by agricultural poison. In that category the organophosphorus groups in tops of the list. This study helps to identify people at risk and the common scenario involved.

There is an urgent need to strengthen the legislature on availability of drugs and poisons substance in the market. This can regulate the manufacture, sale, transport and use of pesticides with a view to prevent risk to human beings. Establishing new poison information centers and developing the existing ones is the need of hour. Enlightenment through educating young people about harmful effects of drugs, introducing separate toxicological units in the hospitals and upgrading the peripheral health centers to manage cases of poisoning in emergency could possible help us to bring down the morbidity and mortality rate.

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Indian Journal of Forensic Medicine and Pathology
Volume 3 Number 3, July - Sept 2010

Delirium and Depression in Advanced Cancer: Forensic Aspects

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ABSTRACT

Background: Delirium and depression in people with cancer is important because of its relatively high prevalence, poor prognosis if undetected and the impact on the quality of life. Considering its importance, we have made this review article to know surprisingly little about the frequency of poor outcomes, or the factors which might predict poor outcomes. Often misdiagnosed by clinicians as a psychiatric disorder and the underlying cause is not focused on. The experience of delirium causes distress to patient and their care givers and has obvious implications for quality of life for both. Under diagnosis of delirium have serious implications as delirium may be a marker of potentially reversible pathology. Apart from being a cause of poor outcome, the delirium state may lead to difficulties with treatment, rehabilitation and interfere with activities of daily living. The presence of major depressive disorder should result in an automatic finding of incompetence. Psychiatrists with ethical objections to assisted suicide advocate a higher threshold for competence and more extensive review of a decision. The ethical views of psychiatrists may influence their clinical opinions regarding patient competence to consent to assisted suicide. The extensive evaluation of these terminally ill cancer patients is thus recommended by forensic psychiatrists.

Key words: Psychiatric disorder, Cancer patient, Forensic psychhiatry, Delirium & depression

INTRODUCTION

What is delirium?

Delirium has been recognized since antiquity and historical reference abound, starting notably with the writing of Hippocrates and celsus. Though recognized since ancient times, there has been a lack of consensus about the core features of the syndrome, leading to a general lack of progress in the area. Delirium is delivered from the latin word deliro (to be crazy). Recent international attempts at developing reliable diagnostic criteria have improved the situation, so that currently there is consensus that delirium is an acute syndrome in which a potentially

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(Received on 29.06.2010, accepted on 19.08.2010)

reversible cerebral dysfunction manifests as disturbance in the levels of consciousness, attention memory and orientation, with concomitant abnormalities of thinking, perception, psychomotor activity, sleep wake cycle and emotions. In this definition, the acute nature of onset the multiplicity of signs, symptoms and the presence of the demonstrable casual cerebral abnormality are worth focusing on. There is consensus that the state of the delirium is usually transient and fluctuates in intensity. Most of such episodes said to last from a few days to few weeks and progression beyond six months is thought to be rare. Delirium is also known as ICU Psychosis, acute confusional state, acute brain failure, encephalitis, encephalopathy, paraneoplastic limbic encephalitis, organic brain syndrome.

WHAT IS LIKELY TO DEVELOP DELIRIUM?

Historically, delirium has been associated with fevers, poisons and disease. More recently, delirium has been known to occur with extremes of age, acute and server systemic disturbance such as infection with high grade fever, cerebral disease, metabolic abnormalities, surgical operations and trauma. Generally it is known that delirium occurs more in elderly age and when multiple aetiological factors are involved such as wide spread disease involving different body systems, effects of treatment such as chemotherapy and radiotherapy and when there is drug and alcohol abuse. Other predisposing factors are vision impairment, polypharmacy, COPD, Preoperative use of Benzodiazepines. Preexisting dementia also makes the development of delirium more likely and frequently delirium goes unrecognized.

WHAT IS IT IMPORTANT?

Delirium in people with cancer is important because of its relatively high prevalence, poor prognosis if undetected and the impact on the quality of life. Considering its importance, we know surprisingly little about the frequency of poor outcomes, or the factors which might predict poor outcomes. Often misdiagnosed by clinicians as a psychiatric disorder and the underlying cause is not focused on. The experience of delirium causes distress to patient and their care givers and has obvious implications for quality of life for both. Under diagnosis of delirium have serious implications as delirium may be a marker of potentially reversible pathology. Apart from being a cause of poor outcome, the delirium state may lead to difficulties with treatment, rehabilitation and interfere with activities of daily living.

WHAT CAUSES DELIRIUM?

Based on the activity level, delirium has been classified into hyperactive and mixed. Clinicians may fail to recognize the hypoactive and mixed types, as the usual stereotype is of the overactive, confused, often hallucinating and agitated. Various theories have been proposed to explain the aetiology of delirium. The prefrontal cortex and sub cortical areas of the brain have been reported to be affected. We know that abnormal cerebral functioning leads to delirium but the exact pathophysiology remains obscure. Altered neurotransmission, changes in cerebral oxygenation and blood flow have been proposed to a number of individual factors such as hypercalcemia have been studied. Reduced cholingeric, dopaminergic non-epinephrine function and elevated cytokines changes endothelial permiability and result in delirium. Some of the common causes of delirium in cancer are - Brain involvement of cancer either primary or secondary, organ failure, electrolyte imbalance, treatment side effects from chemotherapy, radiotherapy and narcotic analgesics, infections, nutritional deficiencies and hematological abnormalities.

DELIRIUM IN CANCER PATIENTS AND FORENSIC PSYCHIATRY

Malignancy of any kind in its terminal stages is

one important area to be considered when dealing with a delirious patient. It is this altered state of mind that forms the basis of a medical defence. Offending in a state of delirium is indeed very rare. The appropriate disposal depends on the clinical need. What defence was adopted depends on the situation. It might be appropriate to plead not guilty because of lack of intent, or to ask for a hospital order or some other form of treatment on the grounds of mental illness. In some of the very serious cases, insanity can also be pleaded under the McNaughten Rules. A person in delirious state needs to be evaluated thoroughly for the competency to stand a trial. Charges are dropped in a majority of the cases in which an evaluator considers a defendant incompetent, most frequently in cases involving misdemeanor charges and/or the clinician considers it unlikely that the defendant could be restored to competence.

Lucid Interval

This is a period occurring in insanity during which all the symptoms of insanity disappear completely. During this period the patient will be held responsible for his criminal acts.

MANAGEMENT OF DELIRIUM

The management of delirium consists of treatment of the causes, where possible symptomatic treatment of the mental state to be given. All attempts should be made to identify the cause and to reverse it. Some time correction of simple problems such as constipation and urinary tract infection can lead to dramatic changes in the mental state. However, far too often, it is not so straight forward particularly if the patients are in advanced stage of cancer. There is also a reluctance to subject, patients to investigate when they are considered to be in a "terminal" stage. A careful balance has to be struck between ruling out treatable causes and subjecting people to painful procedures particularly when they are confused. However, it is important to remember that the experience of delirium can be terrifying and all efforts must be made to reverse it in order to help people to have the best quality of life.

Symptomatic management consist of using medications to alter the mental state and applying attention to the environmental factors to help in confusion. The most commonly used medication is Haloperidol. In general starting doses are low and are gradually titrated against side effects until the desired changes in mental state are achieved. Newer antipsychotics may eventually replace Haloperidol as the drug of choice as their side effects profiles are milder. Antipsychoptics are normally of help in dealing with agitation and psychotic symptoms such as delusion and hallucinations. For the hypoactive type of delirium, stimulants have been suggested but, studies are only beginning to be done in this area. The benzodiazepines are probably best avoided and if used should be short term and withdrawn immediately if there is a paradoxical increase in confusion and agitation. Parental lorazepam may be of use for same patient, especially when combined with Haloperidol.

DEPRESSION

Patients who are diagnosed as having cancer react with significant levels of stress. When the stress related to the diagnosis and treatment of cancer is severe or when patients emotional resources are insufficient to cope up with stress, psychological distress may result. This psychological distress may ultimately lead to anxiety, depression, even suicidal ideas.

PREVALENCE OF DEPRESSION

The prevalence of depression in the general population has been estimated to be six percent (Hock& Reigar 1985). The frequency of depression among cancer patients has been the subject of numerous studies and reported rates have raised from as high as 50% to as low as 4.5%. In the past depression was thought to be grater in patients with cancer than those with other illnesses. However Plumb & Holland (1977) feel that cancer

patients may not be more depressed than other equally ill medical patients.

VULNERABILITY TO DEPRESSION

The factors that increase the risk of depression are history of affective disorder or alcoholism, advanced stage cancer, increased physical impairment, poorly controlled pain and treatment with medications that produced depression symptoms. Numerous commonly prescribe medications can produce symptoms of depression e.g. alpha-methyldopa, reserpine, barbiturates, diazepam, steroids and propranolol. Some of the cancer chemotherapeutic agents also cause depression e.g., vincristine, vinblastine, procarbazine, L-aspariginase and interferon. Many metabolite nutritional, endocrine and neurological disorder produce symptoms that can be mistaken for depression. Cancer patients with abnormal levels of sodium, potassium and calcium may appear. Patients who are febrile, anaemic or deficient in vitamin B and folic acid may also appear depressed. Hyper-or hypothyroidism, Cushing syndrome, hyper parathyroidism and adrenal insufficiency must be considered in the differential diagnosis of depressed cancer patients. If the above are present, appropriate treatment should be given. Depression is also a common sequelae of chronic pain syndromes. Adequate pain control must be established before a diagnosis of major depressive disorder established.

DEPRESSION IN CANCER PATIENTS AND FORENSIC PSYCHIATRY

Severe depression may be mistaken for an irreversible dementia or a malignancy. Depression can lead directly to offending. A number of offences may be committed in the depressive state like homicide, infanticide, theft, sexual offences, alcoholism and offending, etc. The violent act may arise form the irritability associated with the disturbed affective state. Depression may have a disinhibiting effect undermining the subject's normal self-control. The disinhibiting combination of alcohol and depression may also lead to offending. The forensic psychiatrist is called on to evaluate the role of depression in terms of capacity to stand a trial or for its influence on other aspects of a legal situation. The major depressive disorder is a ground for a psychiatric defence and should lead to a psychiatric recommendation.

There are a number of legal and ethical considerations that mental health professionals will want to consider when being involved with people who are considering end-of-life care options and making end-of-life decisions, especially in terminally ill cancer patients.

The presence of major depressive disorder should result in an automatic finding of incompetence. Psychiatrists with ethical objections to assisted suicide advocate a higher threshold for competence and more extensive review of a decision. The ethical views of psychiatrists may influence their clinical opinions regarding patient competence to consent to assisted suicide. The extensive evaluation of these terminally ill cancer patients is thus recommended by forensic psychiatrists.

MANAGEMENT OF DEPRESSION

The cornerstone of good management of depressed cancer patients is the consistent emotional support given by the psychologist. The scale given by the Hamilton is the most popularly used scale to measure the depression and anxiety. Pre-treatment application of the scale is necessary to know the benefit resulting from the actual treatment. When depressive symptoms lasts longer than a week, when they start worsening rather than improving and when they interfere with the patient's ability to co-operate with treatment, a proper treatment of depression becomes necessary.

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Indian Journal of Forensic Medicine and Pathology
Volume 3 Number 3, July - Sept 2010

A Resuscitated Case of Attempted Strangulation

Patil Basavaraj*

Santosh S.G.**

Patil Devraj***

ABSTRACT

In the scenario of alarming increasing cases of unnatural deaths due to strangulation and throttling the determination of cause of death has become difficult in some cases to forensic pathologist. But a case of attempted ligature strangulation which was safely resuscitated has been registered and studied. In this article an attempt has been made to discuss in detail about the various findings in relation to ligature strangulation concerned therein.

Keywords: Strangulation, ligature, homicide.

INTRODUCTION

Strangulation is one of the oldest and widely used methods of committing murder in Indian sub-continent. It is usually carried out by constricting the neck either with the hands or ligature. The motive behind all these cases is either homicide, sexual assault or robbery[2]. The extent and type of pathological findings can often be correlated with the specific circumstances of the fatal event. While such correlations are never perfect, their use in forensic scientific investigations forms an important component of the substance of the experience investigators expertise. Deaths resulting from violent asphyxia demonstrate a relative paucity of anatomic findings, nevertheless it is important to document the pathology present in such cases for the purpose of excluding other forms of trauma from the manner of death.

Strangulation and smothering are common methods in case of females for homicide and is usually associated with sexual assault. Ligature mark[3] around the victims neck constitutes an extremely precious piece of evidence to arrive at a conclusion as to whether hanging or strangulation. Other important findings in cases of ligature strangulation are the marks of struggle over other parts of body.

Case Study

A rare case of attempted strangulation has been reported to Basaveshwar Teaching & General Hospital attached to M.R.Medical College, Gulbarga on 09.09.2009. A young girl aged about

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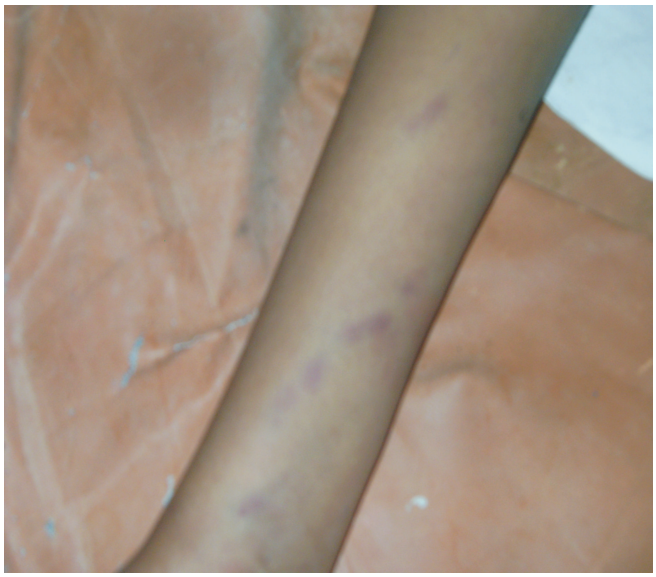
(Received on 15.05.2010, accepted on 17.06.2010)

18 years was brought to the casualty of Basaveshwar Teaching & General Hospital attached to M.R.Medical College, Gulbarga on 09.09.2009 by her mother and relatives with history of unconsciousness, convulsions and difficulty in breathing.

On Examination, clothes were torn, smeared with mud and grass. Scalp hairs were disturbed admixed with grass, mud and leaves. There was a conspicuous ligature on the neck, transversely placed measuring 17 cm x ½ cm x ½ cm, 8 cms below the ear lobe and over the thyroid cartilage in the front. Ligature mark was present only on the anterior and sides of the neck and was absent on the back of the neck possibly due to thick hairs. Bruises (4-5 in number, reddish in color) over the right forearm were noted. Clinically she was cyanosed, tachycardia, difficulty in breathing and had altered consciousness. Genital examination showed no signs of recent sexual intercourse.

Treatment was immediately started by securing airway, IV fluids, antibiotics, steroids and suctioning was done to keep the airway clear. When enquired to the parents, they said that she



was mentally unsound and narrated that an attempt of rape has been committed. During that attempt she started shouting and screaming, during this conjuncture the accused have strangulated her. When she became unconscious he left the scene thinking she is dead. By listening the scream her relatives and parents rushed to the spot and found her in an unconscious state with difficulty in breathing. They rushed to the hospital. However, she made a dramatic recovery after intensive care and treatment and was discharged from the hospital after 10 days.

CONCLUSION

With the present findings on the neck and other parts of the body, it is possible to ascertain that it is case of ligature strangulation along with an attempt of rape. This opinion would not have been possible without evidence of marks on neck and other struggle marks on other parts of the body suggestive of homicidal circumstances and misruling the modesty. With this, we can conclude that strangulation is usually attempted on females, specially with an intention of sexual assault and robbery.

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Indian Journal of Forensic Medicine and Pathology
Volume 3 Number 3, July - Sept 2010

Rare Anomaly of Bifurcated Rib and Costal Cartilage: A case study

Kshirsagar S. V.*
Pawar S. D.**

ABSTRACT

The study of bifurcated rib and costal catrtilage was done at S. R. T. R. Medical College, Ambajogai. Total 30 cadavers were studied during 1997 to 2001. Bifurcation of rib and costal cartilage was found in one cadaver. Left third rib bifurcated and joined with its bifurcated costal cartilage to create an additional intercostals space. This additional intercostals space bears the intercostals muscles. The muscle fibres were in two layers and in the direction of that of the external intercostal and internal intercostal muscles respectively. These intercostal muscles were supplied by a branch of left third intercostal nerve. This bifurcated rib and costal cartilage created an additional intercostals space, which is important for the forensic expert while doing post mortems examination & describing the thoracic injuries. It may prove very useful for a forensic expert to establish identity of a person.

Key words: Rare Anomaly, Bifurcated Rib, Costal Cartilage, intercostals space, forensic

INTRODUCTION

The various developmental anomalies are found during the routine dissection of the body for demonstration of the undergraduate students. The anomalies of the soft tissues like tributaries of the veins, branches of the arteries, formation and course of the nerves and external features of various organs are commonly seen. But the anomalies of the bones are less common to find. The anomalies of the ribs found are cervical rib, lumbar rib and bifid rib. The bifid rib may be found isolated or may be associated with other pathologies.[1]

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(Received on 16.09.2010, accepted on 25.10.2010)

The most of the cases of bifid ribs reported so far are from radiological findings.[2] Hence detailed morphological study including the muscles, vessels and nerves of the additional space created was not possible. Very few cases have been reported in a cadaver.[2] In the present case, during dissection of the cadaver, it was observed that the left third rib and costal cartilage was bifurcated to create an additional intercostals space.

Case Study

The present case study was done at S. R. T. R. Medical College Ambajogai. Six cadavers dissected per year and were observed for the rib anomaly, over a span of five years from 1997 to 2001 during which 30 cadavers were dissected. Bifurcated rib and costal cartilage was found in one cadaver. The third rib on the left side bifurcated near its anterior end to form one superior and one inferior parts of the third left rib. Also the third left costal cartilage bifurcated laterally to form one superior and one inferior part of third left cartilage. The superior part of third

left rib fused with the superior part of the third left costal cartilage and the inferior part of the third left rib fused with the inferior part of the third left costal cartilage. Thus an additional intercostals space was created anteriorly between the second and the third intercostals space. The dimensions of this additional intercostals space were 6.4 cm transversely x 1.7 cm verticaly.

This additional intercostals space thus formed showed – muscles, vessels and nerve. The muscle fibres were in two layers and in the direction that of the external intercostal and internal intercostal muscles respectively. That is the fibres of the superficial layer directed medially and downwards and that of the deep layer directed laterally and downwards.

The left third intercostal nerve passed over the lower part of bifurcated rib and entered the additional intercostals space, gave branches to the muscles and again re-entered the 3rd intercostals space.

The third rib and costal cartilage on the right side were found to be normal. Also all other ribs and costal cartilages on both sides were normal. No other anomaly was found in the remaining axial skeleton.

DISCUSSION

The bifid rib may be seen as an isolated anomaly, where it remains asymptomatic and its existence is revealed either by radiograph or at dissection. On the other hand bifid rib may be associated with Gorlin-Goltz syndrome[3] often presents itself in an early age. Multiple basal cell carcinomas and multiple P-OKC are the main hallmarks of this syndrome; however, there are other manifestations that are grouped into the following five categories. (A) Cutaneous anomalies (B) Dental and osseous anomalies (C) Ophthalmic anomalies (D) Neurological anomalies (E) Reproductive system anomalies.[3]

Bifid ribs are more common in males than females, and occur most frequently in the third and fourth ribs (incidence: third >fourth > fifth > sixth > second).[4]

In the present case, as no other anomaly of the Gorlin-Goltz syndrome was found, case must be of isolated asymptomatic type. This anomaly is formed due to the anomalous development of costal cartilage and the rib. The third left costal arch formed by the left costal element of the third thoracic vertebra grows first laterally then forwards and medially.[5] Here, the medial end of the left third costal arch has bifurcated and reunited to form the above mentioned anomaly.

The bifurcated costal cartilage and rib to create an additional intercostals space is an important developmental anomaly from the point of view of a forensic expert. The presence of an additional rib and intercostal space can mislead in rib and intercostals space counting during the post morteum examination & may lead to incorrect interpretation especially while describing the thoracic injuries. The presence of an additional rib may prove very important identifying point while establishing the identity of a person especially in cases where other identification points like facial features are lost.

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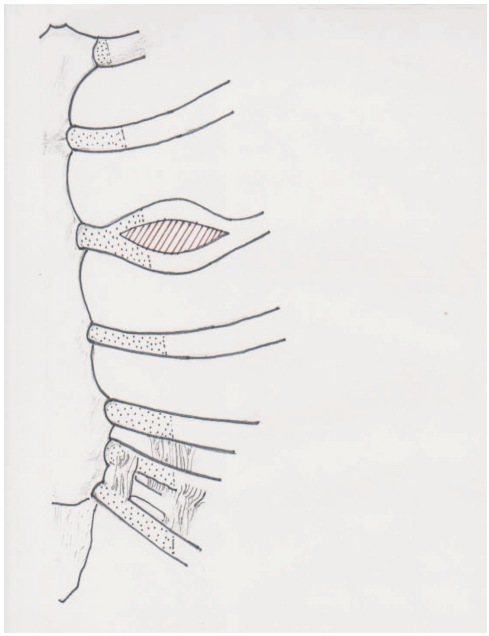

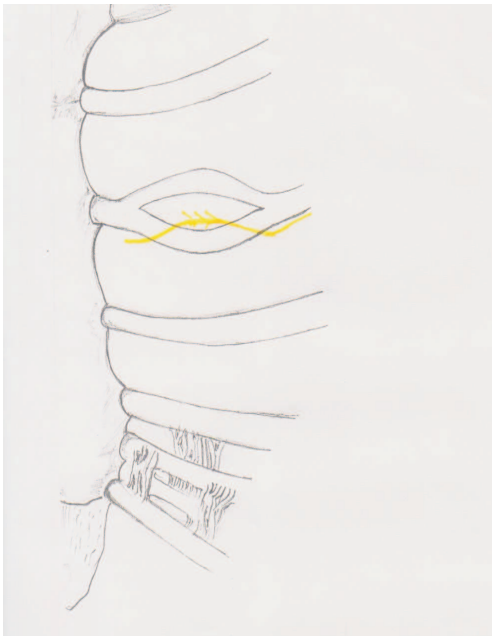

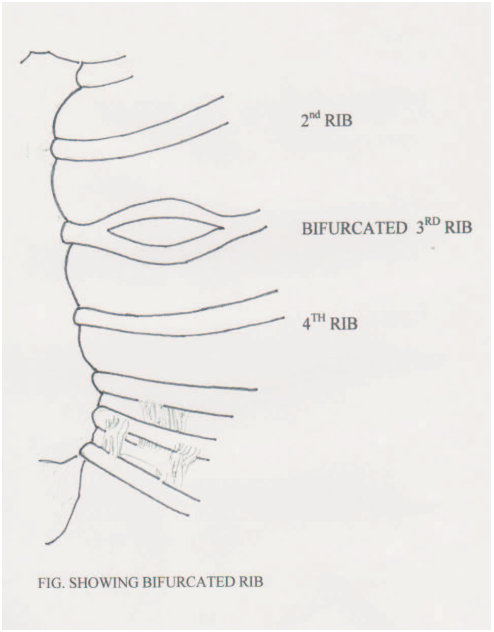

FIG. SHOWING BIFURCATED RIB

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