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मेलेसन (MELESON) के हो ?

मेडिको लिगल सोसाइटी अफ नेपाल (Medico - Legal Society Of Nepal) एक व्यवसायीक व्यक्तिहरूको सँगठन हो । यस सँगठनमा कानुनी चिकित्सा विषयमा अध्ययन वा तालिम प्राप्त चिकित्सकहरू गोलबन्द हुने छन् । यसको मुख्य उद्देश्य नै वर्तमान समयमा चिनारी नै नपाएको (Unidentified) मेडिको लिगल सेवा (Medico - Legal Service) लाई चिनाउनु र यसको महत्व बारे सम्बन्धीत निकायहरू तथा आम जनसमुदायमा प्रकाश पार्नु हुनेछ । यो संस्था कुनै नाफा कमाउने वा आर्थिक गतिविधि गर्ने संस्था भन्दा फरक यो अर्थमा छ कि यसले खाली सेवा सम्बन्धी वैज्ञानिक धारणा सहीतको बौद्धिक (Academic) छलफल, सुभाव, सल्लाह तथा परेको समयमा तालिम जस्ता कार्यक्रमको आयोजना गर्ने गर्दछ ।

Forensic Medicine वा कानुनी चिकित्सा क्षेत्रमा कार्यरत चिकित्सकहरूले आफ्नो कार्यक्षेत्रमा काम गर्दै गर्दा धेरै महत्व भएको यस क्षेत्रलाई राज्य वा अन्य कहीं कतै बाट पनि बुझेर वा अन्जानमा हाल सम्म पूर्ण रूपमा वेवास्ता गर्नाले वेवारिसे अवस्थामा रहेको र यसका धेरै नकरात्मक परिणामहरू सधैं टुलुटुलु हेरेर बस्न नहुने दायित्व मनन गरी एक संगठित आवाज तयार गर्न (Meleson) को जन्म भएको हो ।

Forensic Medicine वा Medico Legal काम भनेको के हो ?

चिकित्सा विज्ञानका विविध क्षेत्रका तथ्य तथा ज्ञानहरूको अदालती उपयोग सम्बन्धी अध्ययन गर्ने विज्ञानलाई Forensic Medicine वा Legal Medicine भनीन्छ । यस विषयसंग सम्बन्धित कामहरू स्वास्थ्यकर्मी तथा अस्पतालसंग जोडिएका हुन्छन् । यसका निम्न लिखित विविध क्षेत्र छन् :

- (क) अप्राकृतिक मृत्यु भएमा गर्नु पर्ने शव परीक्षण वा Autopsy जो पुरा शव पनि हुन सक्दछ वा मानव शरीरका कुनै भाग वा अस्थिपञ्जर (Skeletal Remains) पनि हुन सक्दछन् ।
- (ख) गैरकानुनी प्रकृयाबाट परेका चोटपटकहरूको जाँच (Injury Examination)
- (ग) यौनजन्य हिंसा (Sexual Violence) का पीडित वा पीडकहरूको शारीरिक तथा मानसिक जाँच ।
- (घ) उमेर विवादमा पर्न गएको व्यक्तिको उमेर संबन्धी जाँच ।
- (ङ) मादक पदार्थ सेवन वा कुनै औषधी सेवन गरिएका अवस्थाका

जाँचहरू (Drunkenness Examination)

- (च) यातना बाट पीडितहरूको (Torture Victim) शारीरिक तथा मानसिक जाँच ।
- (छ) मानसिक अवस्था खुलाउनु पर्ने विभिन्न गैरकानुनी अवस्थामा परेका व्यक्तिहरूको मानसिक जाँच (Mental State Examination)
- (ज) कुनै पनि महिला गर्भवती भए-नभएको, बच्चा जन्माएको-नजन्माएको वा गर्भपतन गराएको-नगराएको विवादीत भएमा गराउनु पर्ने चिकित्सकीय जाँचहरू ।
- (झ) अन्य अवस्थामा कानुनी रूपमा आवश्यक परेका जाँचहरू ।

नेपालमा Medico Legal Service को अवस्था के छ ?

जुनसुकै समाजमा विविध प्रकारका गैरकानुनी घटनाहरू घटी रहेका नै हुन्छन् । खास गरी मानव शरीर बिरुद्ध हुने अपराधहरूमा कानुनी चिकित्सा विषय आकर्षित हुन्छ किनकी अदालतलाई सबुत प्रमाणको रूपमा चिकित्सकले जाँच गरी यो वा त्यो प्रकारका प्रतिवेदन (Report) दिनु पर्ने हुन्छ । यदि त्यस्ता Report नभएमा विवादको निर्व्यौल गर्न असम्भव हुन्छ । अपराधिक कार्यको अनुसन्धान तथा न्याय निरूपण गर्न प्रहरी प्रशासन, अदालत तथा पक्ष विपक्षका कानुन व्यवसायीहरू सहभागी भएका हुन्छन् तर ती कुनै पनि निकायमा मानव शरीर र शरीरमा परेका चोट, पिडा वा मृत्यु जस्ता अवस्थालाई सही ढङ्गले पुर्ण रूपमा बुझ्ने जनशक्ति हुँदैन । त्यसैले विवादीत विषयको सही निष्कर्षमा पुग्नको लागि व्यक्तिको जाँच वा स्वास्थ्य परीक्षण र त्यस्को सही तथा वैज्ञानिक व्याख्या समेत गरी चिकित्सकको राय अनिवार्य रूपमा नभई नहुने विषय हो ।

नेपालमा भने जनतालाई दिने स्वास्थ्य सेवाका लागि मात्र निती, योजना तथा कार्यक्रम बन्ने गरेकाले Medico Legal सेवा ओभरेलमा परेको देखिन्छ । यो सेवा सम्बन्धी खास तथा पूर्ण रूपमा कानुन पनि बनेका पाईदैनन् । चिकित्सक तथा अन्य स्वास्थ्यकर्मीको काम कर्तव्यको सुचीमा पनि स्पष्ट रूपमा यो सेवा यसरी दिनु भनी निर्देशन गरिएको देखिँदैन । चिकित्सक तथा स्वास्थ्यकर्मीहरूले अध्ययन गर्ने विषयहरूमा पनि चाहिने जति सैद्धान्तिक तथा व्यवहारिक पक्ष नसमेटिएको कारणले गर्दा अदालतमा पुग्नु पर्ने प्रतिवेदनहरू विषयवस्तुको ज्ञाननै नभई वा पुर्ण रूपमा प्रशिक्षित नभईकन जबरजस्ती चलेको चलन (Tradition) अनुसार बनेका पाईन्छन् । कानुनी रूपमा त्यस्ता जाँचका लागि चाहिने अर्को पक्ष





भनेको भौतिक पूर्वाधार हो । नेपालमा गरिने गरेका Medico Legal कार्यका सम्बन्धमा निम्न तथ्यहरूको जानकारी हुने हो भन्ने जो कोहीले पनि कस्तो गुणस्तरको सेवा नेपाली जनताले पाई रहेका रहेछन भन्ने कुरा आफै स्पष्ट हुन्छ ।

(क) मुलुकमा रहेका सबै जसो अस्पतालमा शवपरीक्षण (Autopsy) गर्नको लागि नभई नहुने Mortuary वा शवपरीक्षण गर्ने स्थान नभएको र भएका स्थानमा पनि न्युनतम पूर्वाधार नभएको । दैनिक जसो Autopsy भईरहने अञ्चल अस्पताल जस्तो व्यस्त स्थानमा समेत लास जाँच कोठा नभएका अञ्चल अस्पताल छन् ।

(ख) कुनै पनि अस्पतालमा Medico Legal Examination (MLE) को लागि छुट्टै कोठा हाल सम्मको Building Code मा समेत व्यवस्था गरिएको छैन जसले गर्दा Emergency बिभागको व्यस्त स्थानमा नै त्यस्ता जाँच आवश्यक प्रकृया नपुन्याई गर्ने गरिन्छ ।

(ग) घाउ जाँच फारम तयार गर्ने काम धेरै जसो स्वास्थ्य संस्थामा Paramedics, Health Assistant, CMA द्वारा गराउने गरिन्छ । ती स्वास्थ्यकर्मीहरूको Course मा विषयवस्तुको जानकारी मात्र हुने सम्मको समेत कुनै विषय वा Chapter राखिएको पाईदैन ।

(घ) MBBS Course मा Forensic Medicine विषय भएता पनि अध्ययन गर्ने कलेजमा Medico Legal काम गर्न कानुनले नै बन्देज लगाएका कारण विद्यार्थीहरू एउटा मात्र पनि Practical Case नहेरि वा नगरी स्नातक परीक्षा उत्तीर्ण गर्दछन् र लोक सेवा आयोगबाट अस्पतालमा नियुक्ती पाउँछन् । अनिवार्य रूपमा थप तालीम वा Orientation नै नपाई दैनिक Medico Legal सेवा दिन थाल्दछन् । यो उनीहरूको लागि एक बाध्यात्मक अवस्था बन्न जान्छ ।

(ङ) नेपालमा हाल संचालन भएका २० भन्दा बढि Medical College हरूमा Forensic Medicine बिभाग अनिवार्य रूपमा रहेको छ । नेपाली नागरिक Forensic Medicine विषयमा स्नातकोत्तर गरी Specialist License जाँच पास गरी Lecturer देखि Professor सम्मको पदमा कार्यरत हुदाँ हुदै पनि स्तरीय विशेषज्ञ सेवा दिनबाट बञ्चीत गराईएका छन् । यसको कारण कानुनमा सरकारी स्वास्थ्य संस्था वा सरकारी अस्पताल भनी उल्लेख गरेकोले नै हो । त्यस्ता विशेषज्ञ एकातिर वेरोजगार हुन थाली सकेका छन् भने अर्को तर्फ पुरानो प्रचलनलाई निरन्तरता दिँदा आवाश्यक ज्ञान तथा सीप नभएका स्वास्थ्यकर्मी हरूले मन नलागी वाध्य भएर दैनिक कार्य गरीरहनु परेको

विडम्बनाको अवस्था छ ।

(च) Medico Legal सेवा सम्बन्धी कुनै समस्या कसलाई भन्ने र यस प्रति को जिम्मेवार हुने भन्ने विषय आफै अन्यालमा छ । स्वास्थ्य सेवा सम्बन्धी उच्च निकायलाई ध्यानाकर्षण गराउँदा यो त प्रहरीले ल्याउने case भएकोले गृह मन्त्रालयले व्यवस्था गर्नु पर्ने हो भनी देखाइन्छ र गृह मन्त्रालयमा गुनासो गर्दा अस्पताल वा स्वास्थ्य संस्थाका समस्या हेर्ने गृह मन्त्रालयको काम नभएको जानकारी गराईन्छ । यसरी पुरै सेवा क्षेत्र वेवारिसे Unidentified or Unrecognized बन्न पुगेको देखिन्छ ।

MELESON का खास उद्देश्य के हुन् ?

नेपालमा मेडिको लिगल क्षेत्रमा रहेका विद्यमान अवस्थाले गर्दा अनाहकमा एक निर्दोले दशकौं जेलको जीवन जीउनु पर्ने र एक अपराधीले निर्धक्क संग आफ्ना गतिविधी संचालन गरी रहन पाउने अवस्था भएको तथ्य माथि उल्लिखित Medico Legal सेवा र यसको गुणस्तरको अवस्था बाट पुष्टी हुन आँउछ । अपराध भनेको एक सामाजिक रोग (Social Disease) पनि हो जसलाई विभिन्न तरिका द्वारा रोकथाम अवस्य गर्न सकिन्छ । यही खास दयालाग्दो अवस्थालाई सुधार गर्नु नै Meleson को प्रमुख र एकमात्र उद्देश्य हो भन्दा खासै फरक पर्दैन । निम्न प्रकारका Activities बाट मुख्य उद्देश्य प्राप्त गर्न मद्दत पुग्नेछ ।

(क) कानुनी चिकित्सा क्षेत्रमा हाल बिद्यमान ३ दर्जन भन्दा बढी नेपाली विशेषज्ञहरूले नेपालका जनतालाई आफ्नो विशेषज्ञ सेवा प्रदान गर्ने बातावरण तयार गर्न लागि पर्ने ।

(ख) कानुनी चिकित्साको महत्व र यसको ठिक व्यवस्थापन गर्न अपराध अनुसन्धान वा न्यायिक प्रकृया संग सम्बन्धीत निकाय लाई घच्चच्याउनुको साथै आम जनमानसमा पनि यसको महत्व र अवस्थाको बारेमा जानकारी गराउने

(ग) विभिन्न तहका अदालत तथा सरकारी वकीलका कार्यालयहरू लाई आवश्यक परेको समयमा कुनै पनि case को प्रतिवेदन वा अन्य Documents अरूको अध्ययन गरी त्यसबाट निस्कन सक्ने वैज्ञानिक राय उपलब्ध गराउने ।

(घ) कानुनी चिकित्सा (Forensic or Legal Medicine) विषयमा समय समयमा छलफल, सेमिनार, गोष्ठी आदी कार्यक्रम गरी यस क्षेत्रमा उचीत तरिकाले कार्य गर्नको लागि आवश्यक कार्य विधि (Standard Operating Procedure) तयार गरी लागु गर्न



पहल गर्ने ।

(ड.) सबै स्वास्थ्य संस्थाहरूमा Medico Legal विभाग नभए पनि कमसेकम एक Unit को व्यवस्था गर्नको लागि पहल गर्ने ।

माथिका गतिविधिहरूले कम्तीमा पनि हालको दयालाग्दो अवस्थाको Medico-Legal सेवालाई एक चिनारी दिन मद्दत गर्नेछ ।

(च)स्वास्थ्य मन्त्रालय तथा स्वास्थ्य सेवा विभागमा स्वास्थ्य क्षेत्रका विविध पक्ष समेटन विभिन्न शाखा महाशाखाहरू वा विशेष परियोजनाहरू (Projects) स्थापना गरी कार्यक्रमहरू संचालन गरीए जस्तै कानुनी चिकित्साको क्षेत्रमा पनि छुट्टै केन्द्रीय स्तरको एक ईकाई वा शाखा स्थापना गर्नु पर्दछ । जसले

यो क्षेत्रमा भएका समस्या तथा यस क्षेत्रलाई स्थानीय तह सम्मको स्वास्थ्य संस्थासंग सामन्जस्यता (coordination) राखी गुणस्तरीय सेवा आम पहुँचको विषय बनाउन सकिनेछ ।

यदि यो क्षेत्रको वर्तमान अवस्थाको बास्तविक चित्रण गर्न सकिएमा धेरै छोटो समयमा नै अपेक्षित सुधारहरू नेपालका Medico Legal क्षेत्रमा गर्न सकिन्छ भन्ने कुरामा MELESON विश्वास राख्दछ ।

डा. हरीहर वस्ती,
मेडिको लिगल बिशेषज्ञ

Report on the Workings of the Department of Forensic Medicine, Maharajgunj Medical Campus

The Department of Forensic Medicine is responsible for most of the medico-legal cases of the Kathmandu District and for education of medical students in the three districts that make up Kathmandu Valley. The department is also actively involved in the conducting of medico-legal trainings and for DVI operations through-out Nepal. This department conducted 1638 medico-legal autopsies in the last year, 2072 B.S.

In the Nepalese year 2072 B.S., in addition to DVI operations following the earthquake and two plane crashes, the department was involved in training undergraduate medical students from 6 medical colleges (over 550 medical students) and 1 dental college (over 50 students). These students undergo a compulsory two-week rotation during the third year of medical school and observe and assist in medico-legal autopsies and clinical forensic cases including age estimations, sexual assault victim and perpetrator examinations, etc.

During the year, the department conducted 9 medico-legal trainings for police personnel (over 200 police personnel), ranging from constable to inspector, including Scene of Crime Officers. These included

lectures on forensic topics including post-mortem changes and estimation of post-mortem interval, findings in cases of different types of deaths, etc.

The department also conducted 3 medico-legal trainings for government medical officers (over 60 medical officers) ranging in medico-legal experience and designation from fresh medical school graduates to medical superintendents. This is an ongoing training program run with the assistance of the Ministry of Health, Government of Nepal. It includes 14 working days of full-time training that includes lectures as well as practical sessions. Several senior government officials including lawyers, judges and police officers give lectures and have a discussion with the medical officers to advise them on their queries and complaints. One of the training was for government medical officers with specific focus on medico-legal investigation of gender-based violence and sexual assault.

The department assisted in 2 medico-legal trainings at the National Judicial Academy with faculty members from the department taking lectures and chairing discussions. One of the trainings was conducted for

25 district court judges while the other was attended by 25 government advocates. These trainings were conducted for 1 week each and were geared towards training the judiciary on the interpretation of forensic findings.

The department with assistance from the ICRC conducted 3 trainings:

- 2 weeks' training on Forensic Anthropology for its graduate students conducted by Dr. Derek Benedix.
- 1 week training on Forensic Odontology attended by dentists and forensic graduates from around Nepal and with 15 participants was conducted by

Dr. Jayanie Weeratna.

- 3 day training on Mortuary Practices was conducted at the department and was attended by 18 forensic professionals from around Nepal and was chaired by Dr. Uwom Eze.

The faculty members at the department have also been active in the formation of MeLeSoN and conducting the first Annual General Meeting on Baisakh 25, 2073.

The department has become an institutional member of APMLA – Asia-Pacific Medico-Legal Agencies.

Dr. Rijen Shrestha

The Department of Forensic Medicine of the B.P. Koirala Institute of Health Sciences (BPKIHS)

The B.P. Koirala Institute of Health Sciences (BPKIHS) was established on Jan 18, 1993 and subsequently upgraded as an autonomous Health Sciences University on Oct 28, 1998 with a mandate to work towards developing a socially-responsible and competent health work force, providing health care and being involved in and helping to advance innovative health research. The institute, in Dharan in south-eastern Nepal, has extended its continued health services through the teaching-district concept to the primary health care centers, district hospitals and zonal hospitals of the Eastern Development Region. This University is aptly named after Bisheshwar Prasad Koirala, who was Nepal's visionary leader in social uplifting and a firm believer of national integration.

The BPKIHS is one of the most successful examples of Nepal-India co-operation. The Health Ministers of the two countries signed the Indo-Nepal agreement for the establishment of the BPKIHS on the Hindu auspicious day of Mahashivaratri (10 March, 1994).

BPKIHS has a vision of a self-governing, self-reliant

Professor B.N. Yadav

Prof. BPKHS, Dharan

international health sciences university attracting students and teachers from all over the world to its constantly innovative educational programs.

Department of Forensic Medicine and Toxicology

The Department of Forensic Medicine was established along with the medical college in 1994. The Department of Forensic Medicine is involved in academic activities (teaching-learning) for MD, MBBS, BDS and B.Sc. Nursing students and is involved in the day-to-day medico-legal work of autopsy services, age estimation, examination of injuries, alleged torture, alleged sexual assault, and alleged drunkenness and their reporting, and in the formulation of expert opinions in unnatural death cases and in many others clinical forensic services. The department aims to establish a digital forensic laboratory which would strengthen forensic digital photography, computerized age estimation, computerized superimposition and computerized fingerprint comparison analysis. Steps have already been taken to establish a toxicology laboratory and



a forensic pathology laboratory. Expansion and upgrading of the current forensic museum is going on. Digital X-ray facilities will be available at the department in the very near future.

Professor Dr. T.D. Dogra (on deputation from AIIMS, New Delhi), Dr. Pravir Vodka and Dr. B. N. Yadav were the pioneer faculty members of the department. Later on, Dr. Manoj and Prof. Dr. C. B. Tripathi also headed the department. At present, Professor B. N. Yadav heads the department, with Additional Professor Dr. Shivendra Jha and Assistant Professor Dr. Bikash Sah making up the faculty. We also have 10 other

supporting staff and two junior residents in the department. Till now, 10 students at the department have been awarded the MD Degree in Forensic Medicine.

The Department of Forensic Medicine of the BPKIHS has the potential to develop into the nucleus of the development of the medico-legal services for the whole of the Eastern Development Region of Nepal as a whole. How this can be realized in the present context of federal Nepal is a discussion that all of us members of MELESON need to be immediately engaged in.

Forensic Medicine- Insight to Parsa

Birgunj in Parsa District is an economic hub, almost regarded as the economic capital of the country. It was till a year ago the major gateway for goods that need to be imported into Nepal from India, but this custom responsibility has now been more evenly shared with other cities along our southern border. And as crimes and criminal activity is nothing new in the whole country, this district too has its fair share of an ever-increasing rate of unnatural and suspicious death and other criminal activities many of which are passed on to the medico-legal work force, police and doctors in the district.

Almost all of the medico-legal work, including autopsy work, is carried out at the Narayani Sub-Regional Hospital. This is the system followed in practically all the districts of the country. Due to the lack of proper infrastructure and qualified manpower for medico-legal services in all the district and zonal government hospitals in Nepal, everyone here agrees that the medico-legal service sector in the districts is just as bad as the crime situation in the whole of the country.

How is the infrastructure? Well, the autopsy room itself is a small 12 by 10 feet dark chamber almost suffocatingly resembling a dark haunted room from a horror movie. Everything is done with the instrument available - one scalpel; but, thank God, there is at least a two-door freeze available in the room of this two-roomed mortuary. This infrastructure might be sufficient in the government's perspective, but everyone else knows that this situation cannot be worse than it is. It is all the more difficult for

me to witness this dire situation here in Birgunj, having worked at the BPKIHS mortuary while undergoing my post-graduation.

And the manpower? Well, they perform autopsies out of compulsion. Conducting autopsies is a responsibility of all government doctors, even if they do not have any medico-legal training or a post-graduate degree in forensic medicine. Given the infrastructure and their busy schedule at the hospital and at the private clinics, the doctors' disinterest is obvious, and justifiable. They are not to blame for this poor situation.

And how are the autopsies done? Well, trying to determine the cause of death depends much more upon the history than upon the findings of the dissection performed.

Now, what is my problem? Claiming to be an expert in medico-legal work and being a helpless duck as an observer while the medico-legal work is being conducted in this pitiful situation brings tears to my eyes. I am not exaggerating. As an honest citizen of this country, I just wish one thing, proper justice to all, dead or alive. And this is not possible without things being done in a proper way. In simple words, an autopsy should not be performed by medical graduates without post-graduate training in forensic medicine when there is an adequate pool of forensic medicine graduates in the country today, in this 21st century!

What else? Well, undergraduate medical students in our medical college need proper exposure to proper autopsy

work. This is impossible here at the Narayani Hospital at present.

What have we done to help things out? We had requested the government of Nepal, via our chairman often times, to allow medico-legal work to be performed at the NMCTH. I personally talked about it with the doctor involved in autopsy work at the Narayani Hospital. Well, the truth is that all of us members of MeLeSon are not up in the policy making ladder! I agree my efforts are minimal compared to what some of our colleagues did and continue to do for the same. Hats off to you for setting an example. I wish this could happen here too.

What is the solution? Well, upgrading the infrastructure at the Narayani Hospital and having an expert to work

there for better exposure to our students would be very desirable. Giving the responsibility of the medico-legal work of the Parsa District to the NMCTH would be a better solution if the government is truly committed to law and order, to abolishing 'dandahinta' and to providing justice to all, to both the living and the dead.

Last but not the least, I would like to thank our president of MeLeSon for encouraging me and helping me to lighten up the situation of medico-legal work here to some extent. And no offence to anybody is intended while expressing my thought in this article.

Dr. Firoj Khan, MD

National Medical College, Birgunj

Departmental activities of Forensic Medicine and Toxicology at College of Medical Sciences, Bharatpur

The department of Forensic Medicine and Toxicology, as a routine has been continuously engaged in teaching MBBS and BDS students. The department consists of an office complex, a well set museum and a mortuary in collaboration with Bharatpur Hospital (A central level government hospital).

As highlighted by Bernard and Knight, a serious defect in the education of the subject; Forensic Medicine and Toxicology is separating the professionals who practice medico legal works from those who profess to teach in universities. It is impossible to be a credible and convincing teacher unless one has continuing practical experience of the subject. Understanding the problem, we tried to collaborate with Bharatpur hospital by providing the expertise of forensic experts from our department on on-call basis. The management of College of Medical Sciences and Bharatpur hospital were also supportive in this initiation. The college has helped Bharatpur hospital to construct a well-equipped modern mortuary complex. Finally, the agreement was done and the forensic experts of CMS started to serve the government hospital on on-call basis from July 2015. Currently, Dr Nuwadatta Subedi and DrTej Prakash Chataut are performing the medico legal duties. Performance of medico legal works also

obviates the experts to attend the courts whenever requested. It is also beneficial to the medical students as medico legal works including the autopsies can be demonstrated by their own teachers.

The Dept. of Forensic Medicine & Toxicology had organized a workshop on Medico-legal update on 17th and 18th October 2014. The workshop was unique in that it was the first of its kind in Nepal organised by any private medical colleges and institutions. The program had covered almost all important aspects of Medico-legal field. The faculties from Institute of Medicine, BPKIHS, CMS and Chitwan Medical College delivered different topics on medico legal issues. The CDO of Chitwan, Chief Justice of Chitwan and the chief of Bharatpur Police training centre so delivered lectures of their field. Sixty doctors from different parts of the nation had actively participated in the event.

The faculties of the department are also engaged in research activities and delivering trainings on the related field. The forensic experts of the department also serve as resource persons to the police training center of Bharatpur where the on the job police officers and the officers on training are trained on medico legal matters like autopsies, injuries, crime



scene examination etc.

The forensic medicine department is involved in orienting the medical officers, post graduate residents and faculties of other specialities in handling medico legal cases including preparing injury reports, death certificates, consent forms, intimation letters on medico legal issues etc. We also guide the doctors in preparation of their court visits in medico legal issues.

In conclusion, the department of Forensic Medicine and Toxicology in the College of Medical Sciences is not only engaged in teaching learning process but also serving the hospital in medico legal activities. We

also collaborate with adjoining government hospital to serve as forensic experts on on-call basis, provide our expertise to train the police officers and are involved in research activities.

Dr Nuwadatta Subedi

Assistant Professor

College of Medical Sciences, Bharatpur

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फरेन्सिक मेडिसिन विभाग महाराजगंज

मिति २०७२ फागुन १२ मा पोखराबाट जोमसोम जाँदै गरेको तारा एयरको विमान म्याग्दी जिल्लाको विकट स्थानमा दुर्घटनामा पर्‍यो। चालकदलका ३ सदस्य सहित २३ जना यात्रुहरूको मृत्यु भयो। मृत लासहरू छोटो समयमै फेला परे र तीन मृतकको घटनास्थलमै सनाखत गरी आवश्यक Documentation बिना नै त्यहीँबाट आफन्तलाई जिम्मा लगाइयो। बाँकी २० जनाका भनिएका शवहरू पश्चिमाञ्चल क्षेत्रीय अस्पताल पोखरामा ल्याइयो। उक्त अस्पतालमा केही समयको छानवीन पछि अन्य नौ जना मृतकका आफन्तले शव बुझेर लगे। बाँकी रहेका ११ वटा शव पहिचान गर्न नसकिएको भनी दुर्घटनाको भोलीपल्ट र पर्सीपल्ट काठमाण्डौ पठाइयो।

काठमाण्डौको महाराजगंज स्थित फरेन्सिक मेडिसिन विभागले २०७२ फागुन १५ - १७ सम्म

जाँच गरी आठ जनाको शव आफन्तलाई बुझाउन सफल भयो। यस विभागले हाल सम्म दर्जनौं हवाई दुर्घटनाको अनुसन्धानमा सहभागिता जनाईआएकोमा सधैं चिकित्सकीय

अनुसन्धान सफलताका साथ सम्पन्न गरिरहेको थियो तर यस पटकको अनुसन्धानमा एउटा हुन नसक्ने तथ्य उजागर हुन पुग्यो। त्यो के भने २३ जना व्यक्ति मध्ये पहिलो क्रममा नै पहिचान हुनु पर्ने एक व्यक्तिको शवको पहिचान कहिल्यै पनि नहुने भयो र एउटा लास सधैं वेवारिसे अवस्थामा रहन पुग्यो। हवाई दुर्घटनामा मृत्युहुनेहरूको सनाखत (Identification) गर्दा सामान्य व्यक्तिगत सुचनाहरू हरेक मृतकका आफन्तबाट

Ante - Mortem Data को रूपमा संकलन गरी मृत शरीरबाट पाईएका सूचना वा Post - Mortem Data संग तुलना गर्दै सुरु गरिन्छ। यसको विश्लेषण अत्यन्त सूक्ष्म तवरले हुन्छ र धेरै व्यक्तिका

लासहरू लाई टुकाटुका भएको अवस्थामा पनि यसै प्रविधिबाट पहिचान गर्न सकिन्छ। यदि यसले पनि सम्भव नभएमा अन्य तरीकाहरू जस्तो औठा छाप वा DNA जस्ता अलि जटिल प्रविधिको सहारा लिनु पर्ने हुन्छ।

पोखराबाट पठाईएका ११ वटा शव प्रायशः टुक्रिएका र जलेका समेत थिए। करिब साढे एक दिनको अध्ययन पश्चात् आठ व्यक्तिहरूको पहिचान माथि भनिएकै Ante - Mortem / Post - Mortem Data हरूको

विश्लेषण पश्चात् गर्न सकियो यसमा दाँत सम्बन्धी सूचना र Dental Record को समेत ठूलो भूमिका रह्यो। एक व्यक्तिको सूचनामा केहि समय अगाडि उपचारको क्रममा Spinal Column को हड्डीमा स्टीलको पाता स्कुले Fix गरेको धेरै वटा X-Ray Plate नै हामीलाई बुझाइएको थियो तर हामीले जाँचेका ११ वटै शवका ढाडका हड्डीमा त्यस्तो केही पाईएन। सबैका ढाडका हड्डीहरूमा चोट परे पनि तिनका कुनै टुका हराएका थिएनन्। हाम्रा हात तथा आँखाले धोका दिए कि भनी सबै शवका उक्त भागको Portable X-Ray बाट X - Ray गरियो तर X - Ray मा पनि कुनै पनि लासको ढाडको हड्डीमा स्टीलको प्लेट पाईएन। बाँकी तीनवटा शवहरूको पहिचान अझ गर्न सकिएन र आफन्तहरूलाई अब DNA को लागि नमूना प्रयोगशालामा दिन भन्यो र सनाखत नभएका ती तीन शवबाट समेत नमूना संकलन

गलत प्रक्रियाको जिम्मेवारी कसले लिने ।

गरी पठायौ । करिब तीन हप्ताको समय पश्चात् DNA को प्रतिवेदनले तीन मध्ये दुई शवको पहिचान भयो भने बाँकी एउटा शव सधैको लागि वेवारिसे बन्न पुग्यो । तर सबै भन्दा बिडम्बना र दुःखको कुरा यो भयो कि एउटा व्यक्तिको परिवारले मृत्यु भएका आफन्तको शवको केही कुनै टुक्रा पनि नपाउने भयो । जुन नपाउनुको कारण लास हराएर

वा टुक्रा टुक्रा भई विलय भएर होईन । यसको एक मात्र कारण गलत पहिचान गरी एउटाको लास अर्कै भनी जिम्मा लगाउनाले नै हो ।

गलत कार्य कहाँ भयो र कसले गन्यो भनी सोध्ने अधिकार ती आफन्तलाई छ कि छैन ? जसले लास पाएनन् । यदी यसमा संलग्न अनुसन्धानकर्ता, हवाई प्राधिकरण, गृह मन्त्रालयका

केन्द्रीय देखि क्षेत्रीय तथा स्थानीय तहका निकायहरू, क्षेत्रीय अस्पताल पोखरा र यस्तो कार्यमा अगाडी आउने स्थानीय तथा केन्द्रीय तहका राजनीतिक नेता तथा ठूला-बडा भनिने व्यक्तिहरूका आफन्तहरू मर्दा यस्तो अवस्था आएमा के गर्दा हुन् भनी सोधिएको प्रश्नमा ईमान्दारिता साथ आउने उत्तर खोज्ने हो भने पक्कै पनि

यसको उत्तरदायित्व कसले लिनु पर्ने भन्ने प्रश्नको उत्तर आउँछ । २१ औं शताब्दीको समयमा पनि पुरातन ढुङ्गेयुगवादी सोच पालेर नेपालको Medico – Legal Sector लाई पहिचानमा नलिने र भएको स्रोत साधनको उचित उपयोग नगर्ने हो भने यस्ता अति दुखदायी र मर्मस्पर्शी घटनाहरूको सिकार नेपाली जनताहरू सधै भइरहनु पर्दछ ।

My Perspective of Forensic Medicine

The day I chose forensic medicine as a subject for my postgraduate degree was both a happy and a sad one. Firstly, I was happy thinking about what I then thought would be not a very busy career, and a less competitive one as well. Secondly, I was sad thinking about how I was going to cope with the subject matter, not about the theory of the subject but with the practical aspects of a forensic medicine. It is said that deciding to do something takes time, but that once the decision is made, the inertia of motion takes over. This was true with me too, though the adaptation to the work my choice entailed was at a tortoise pace. I started getting used to handling dead bodies and to examining medico-legal cases of alleged sexual assault and physical assault, age estimation and the like. I started to take classes on topics relating to death, for students and the police. I could read the question 'What is this lady doing?' many in the audience of my classes had in their confused looks.

Eventually, I started loving this subject as it started unfolding its true colors. This was very similar to what one of my friends had once told me that any subject you chose for your postgraduate or other studies happens to be like an arranged marriage where you start loving the subject as time passes by. Each time I performed an autopsy, I felt the dead body was trying its best to communicate with me regarding the reasons it had landed onto the mortuary table,

and waiting for me to help in the process of peeling off all suspicions surrounding the death one by one. Beside this, I also got trained in handling cases of alleged sexual assaults, examining both the alleged victims and perpetrators. Each case had a unique story of its own which made the immense pain and sufferings that the victim could have undergone and the pleasure and satisfaction the disgusting mind of the perpetrator was seeking almost painfully palpable to me! Oh! was this 'less travelled' road that I was making a career of worth it?

With this subject, I got a chance to feel that 'everything that glitters is not gold'. And almost all hangings are suicidal. But not all. And that 'truth is far beyond our expectation of reality'. There were cases where the voices generated by the people and media unnecessarily hyped the cases whereas there were genuine cases which in fact needed a voice and did not have any. Sometimes the tears and moans of the loved ones of the deceased were capable of making me weep and forcing me to hide my face so as not to be seen as a 'weak' doctor.

At first I couldn't believe that decomposition of bodies could produce such offensive odors and such frightening features. But I now understand that that is natural, the norm! The 'offensive' and the 'frightening' are the abnormal! It was next to impossible for me to



believe that a person could be inflicted with dozens of stabs or chop wounds or with a decapitation by another human being like us. But that is the truth, the reality.

Dead bodies in the mortuary are so much like the anaesthetized bodies on the operating table. The only difference is that they are permanently anesthetized. We, who have chosen forensic medicine as our career are, in the true sense, their representatives. Our reports are their voices. Voices of those who now cannot speak but who were just like us not very long ago.

During my three years of residency at the Institute

of Medicine, I learnt that a small input from our side can strongly enhance the administration of justice in a court of law.

Even till my mid-teen years, a sense of fear would well up in me when going to use the bathroom at night in my very secure home. I have now become much more fearless, both physically and mentally, and the credit goes to this fascinating subject of ours, Forensic Medicine.

Dr. Nilu Hirachan, MD
Lecturer
Gandaki Medical College

फरेन्सिक मेडिसिन मा रगतको भूमिका

डा. आलोक आत्रेय

चिकित्सा शास्त्रमा रोग पत्ता लगाउन र रोगको निदान गर्न रगतको परिक्षणले महत्वपूर्ण भूमिका निर्वाह गरेको जगजाहेर नै छ । अपराध अनुसन्धानमा पनि रगतको अपरिहार्य भूमिका हुन्छ । कुनै पनि घटनास्थलमा प्रायस रगत भेटिन्छ। एक थोपा रगतको अन्वेषणले थुप्रै फौजदारि अपराधका तथ्य उदाङ्गो भएका उदाहरणहरू प्रशस्त छन् । कुनै कुनै अपराधिहरूले बढ्याई गर्न खोजेर घटना लुकाउन रगत पुछपाछ गरेका घटना पनि नघट्ने होइनन्। कहिले काँहि रगत जस्तै देखिने दागहरूले अन्वेषणकर्तालाई भुक्त्याउन पनि सक्छन्। पान, खिया, फलफूल (केरा, आँप) र तरकारिका दाग, मेहेन्दि, रूखको चोप पुरानो रगत को दाग जस्तो देखिनसक्छ । गाँडा लुगामा लागेको ग्रीज पनि रगत जस्तो देखिन सक्छ।

घटनास्थलमा अनावश्यक मान्छे पसन् दिनु हुन्ना कुनै कुरा छुनु पूर्व यथास्थिति फोटो खिच्नु पर्छ। घटनास्थलमा रातो दाग देखिए

अन्वेषणकर्ताले सफा पन्जा लगाएर यदि आलो छ भने फिल्टर पेपर, गज पिस वा कपासमा सोस्ने र त्यो स्याम्पल लाई लेबल गरेर सुरक्षित राख्ने। कुनै कपडामा रगत जस्तो देखिने दाग लागेको छ भने त्यो कपडा पुरै वा काटेर लेबल गरि सुरक्षित राख्ने। यदि फलाममा रगत जस्तो देखिने दाग लागेको छ भने त्यसलाई धारिलो वस्तुले कोट्याएर सिसाको कन्टेनरमा लेबल गरि सुरक्षित राख्नु पर्दछ। यसरी जम्मा गरिएको स्याम्पल फरेन्सिक ल्याबमा पठाउनु पर्दछ।

Ultra violet लाईट (टर्च) बाल्यो भने आँखाले नदेखिएका रगतका दाग प्रष्ट देखिन्छन्। त्यस्तै लुमिनोल स्प्रेले पनि घटनास्थलमा अपराधिले मेटाउन खोजेको रगतको पर्दाफास गरिदिन्छ।

फलाम वा स्टीलमा लागेको खिया हाईड्रोक्लोरिक एसिडमा घुल्छ। स्टीलको चक्कुको दाग रगत हो कि होईन भनेर पत्ता लगाउन चक्कुलाई उल्टाएर दाग नभएको

सतहमा ततायो भने रगतको टाटो पत्र पत्रमा उफिन्छ। खिया उफिन्ना खियाले रगत जस्तो कपडालाई कडक पनि दिन्छ।

वनस्पतिको दाग हो कि रगत भनेर छुट्याउन फेरिक क्लोराईडको थोपाको प्रयोग गरिन्छ । वनस्पतिमा पाईने ट्यानिन नामक तत्व फेरिक क्लोराईडको संपर्कमा आएपछि कालो हुन्छ तर रगत हुँदैन । रगत जस्तो देखिने डार्क नाईट्रक एसिडमा पहेंलो हुन्छ।

बेन्जिडिन टेष्टले कुनै तत्व रगत हो कि हैन पत्ता लगाउँछ । प्रेसिपिटिन टेष्टले जनावर र मान्छेको रगत छुट्याईदिन्छ। मान्छेको रगत ग्रुपिड गरिन्छ । घटनास्थलमा पाईएको रगत ग्रुपिड पश्चात कसको होईन भनेर छुट्याउन मद्दत गर्छ । (द्रव्यः कसको हो भनेर छुट्याउने आधिकारिक टेष्ट ग्रुपिड होईन । जस्तो बच्चाको रगत ए पोजेटिभ र आमाको ओ पोजेटिभ छ भने बाउ बि पोजेटिभ वा ओ पोजेटिभ कदापि हुन सक्दैन । बाउ ए पोजेटिभ वा एबि

पोजेटिभ हुनुपर्छ तर आधिकारिक पुष्टि डिएनए टेष्टले गर्छ ।)

हेमिन क्रिस्टल टेष्ट वा टाकायामा टेष्ट मार्फत शुक्ष्मदर्शक यन्त्रमा परिक्षण गरिएको रातो तत्व रगत हो र मान्छेको नै हो भनेर पुष्टि हुन्छ । अत्याधुनिक स्पेक्ट्रोस्कोपिक पद्धतिले सियो को टुप्पो जति सानो रगतको कण पुरानो वा आलो हो, कति पुरानो हो र त्यो रगतको कणमा रगत बाहेक अरु तत्व जस्तै मदिरा वा विष भए नभएको पनि पत्ता लगाउँछ ।

रगतलाई शुक्ष्मदर्शक यन्त्रमा हेर्दा श्वेत-रक्तकोषमा डेभिडसन बडि (Davidsons body) देखियो भने त्यो रगत महिलाको हो भनेर किटानका साथ भन्न सकिन्छ। यतिमात्र होईन रगत शरिरको कुन भागबाट आएको हो भन्ने पनि पत्ता लगाउन सकिन्छ । महिनावारिको रगत प्रायस महिलाको भित्री वस्त्र वा कपडाको टुक्रामा लागेको पाईन्छ। यसको खरो गन्ध हुन्छ । यसलाई शुक्ष्मदर्शक यन्त्रमा हेर्दा भने पाठेघर र योनीका तन्तु पनि

भेटिन्छन् । नाकबाट आएको रगत शुष्मदर्शक यन्त्रमा हेर्यो भने म्यूकस (सिंगान) सँग मश्रित देखिन्छ । उल्टि सँग निस्केको रगतलाई पेटको अम्लले गाढा खैरो रङ्गको बनाईदिन्छ र रगतमा खानेकुराका कण भेटिन्छन् । दिसासँग आउने रगत प्रायस कालो हुन्छ र शुष्मदर्शक यन्त्रबाट हेर्दा पचेका खानेकुरा देखिन्छन् । उडुस, लामखुट्टे, जुम्रा आदि मार्दा पनि हातमा रगत टाँसिन्छ तर यो रगत शुष्मदर्शक यन्त्रमा हेर्यो भने रगतमा ती परजीविका अंग पनि देखिन्छन् । शिराको रगत धमनिको भन्दा चहकिलो हुन्छ । शिरामा रक्तचाप बढिहुने भएकोले यसबाट निस्केको

रगत स्प्रे जस्तो टाढा उछिटिन्छ । धमनिबाट निस्केको रगत शिथिल हुन्छ र थोपा थोपामा खस्छ रगतको थोपा ध्यान दिएर हेर्यो भने रगत कुन दिशाबाट खसेको पत्ता लाग्छ । केहि सेन्टिमिटर माथि बाट सिधा खसेको रगतको थोपा गोलो हुन्छ । एक फिट वा त्यो भन्दा माथिबाट खसेको थोपा पूर्णरूपमा गोलो नभएर बाहिर पट्टि ससाना खाँच जस्तो देखिन्छन् जति उँचाई बढ्यो त्यति नै रगतको थोपाबाट ती खाँच आकृति छुट्टिन्छन र सूर्यको किरण जस्तो देखिन्छ छड्के भरेको रगतको थोपा विश्मयादिबोधक चिन्ह(!) जस्तो देखिन्छ चुच्चोर साँघुरो किनाराले कुन दिशाबाट रगत भरेको हो त्यो बुझाउँछ ।

घटनास्थलमा रगत जमेको छ भने त्यसमा पाईतालाका वा जुत्ताका डाम हेरेर कति जना त्यहाँ उभीएका थिए भन्न सकिन्छ ती डामलाई राम्ररि हेर्यो भने घटनास्थलमा संदिग्ध व्यक्ति कुन दिशाबाट प्रवेश गर्यो र निस्कियो पनि किटेरे भन्न सकिन्छ हतियारमा लागेको रगत, झ्याल-ढोकाका चुकुलमा लागेका रगत बाट औठाछाप निकालेर दोषि पत्ता लगाउन सकिन्छ । यदि कर्तव्यज्यानको घटनामा मृतकलाई भुईमा घिसारेको भए कुन दिशाबाट कता कति घिसारेको भन्न सकिन्छ रगत लागेको लुगा धोएपछि पनि रगतका कण लुगाबाट पुरै निखिदैन माथि उल्लेखित रसायनले परिक्षण गर्यो

भने त्यो पनि पत्ता लाग्छ । कतिपय अवस्थामा रगतले मृत्युको कारण पनि पत्ता लगाईदिन्छ । मदिरा वा अन्यकुनै विष मृत्युको कारण भए नभएको रगतको परिक्षणले थाहा पाउन सकिन्छ । रक्तश्रावले मरेको मानिसको शरिरको छाला फिक्का रङ्ग उडेको जस्तो देखिन्छ । अपराध चाहे जुनसुकै होस् घटनास्थलको राम्ररी अध्ययन र जाँच गर्ने हो भने शायदै कुनै अपराधी फुत्किन पाउला! घटनास्थलमा भेटिएको रगतको थोपा चाहे त्यो जतिनै सानो किन नहोस् त्यसले घटनाको सत्यतथ्य उदाङ्गो पारेर अपराधि नजिक पुर्‍याईदिन्छ ।

Forensic Medicine-The NMC View

I would like to introduce myself as Dr. Barsika Katwal. I received my post-graduate degree in Forensic Medicine (MD) from Kathmandu University in 2015. Since then, I have been working as a full-time lecturer at the Nepal Medical College Teaching Hospital (NMCTH), Attarkhel, Jorpati, Kathmandu.

The Nepal Medical College (NMC) was established in 1997-1998, with the Department of Forensic Medicine as one of its departments. However, in its first decade and a half, the faculty members of the department had to be recruited from India due to the scarcity of experienced teachers in the field of Forensic Medicine. Gradually, as the number of medical colleges in Nepal increased, Forensic Medicine emerged as the subject of interest to many MBBS and BDS graduates. This has resulted in an increasing number of Nepali doctors with a post-graduate degree in Forensic Medicine now working in the different medical colleges of the country.

The NMC is an established medical institution of the country, and it follows that it should have a forensic department that is capable of providing the medico-legal needs of the community it is in. The Jorpati-Attarkhel-Sundarijal area is practically a mini-valley in the Kathmandu Valley and the population of this area is increasing at such a rate that the strengthening of the Department of Forensic Medicine of the NMC is fully justified. I wish to extend my services as a lecturer at the NMCTH and help the nearby community by offering forensic medicine services related. I am also extremely interested in gaining experience in the field of toxicology and serology.

I am sure that I will get the help, good cooperation and motivation from the NMCTH and from all the Meleson members so that I can play my part in helping the overall development of the medico-legal system of the country.

Dr. Barshika Katuwal, MD
Lecturer, Nepal Medical College



Forensic Medicine-The KIST VIEW

“To create competent, humane and compassionate health care professionals through excellence in holistic education, health care and research” is the vision of the KIST Medical College and Teaching Hospital which was established in 2006. Situated at Imadol, with a beautiful view of the mountains, the college strongly believes in creating a good academic environment.

I joined the KIST Department of Forensic Medicine as a lecturer in 2010. It was a great challenge to establish a new department in an emerging private institution. Since the KIST Medical College is affiliated to the Institute of Medicine (IOM) of the Tribhuvan University and is in the Kathmandu Valley, our students have the opportunity of their forensic practical posting at the Department of Forensic Medicine of the IOM.

Our department has a laboratory with specimens for teaching and learning purposes. With the increase in the number of doctors with a post-graduate degree posted in the departments of forensic medicine of the different medical colleges of the country and the birth of MELESON, we now have a goal not just to nourish our students but to help strengthen the overall medico-legal services that our departments can provide to a greater segment of the country's population.

Whatsoever the challenges we may face, our future plan is to begin autopsy and other medico-legal services that can help both the criminal and civil justice systems of the country. We have already forwarded a proposal to the management of the institution for establishing a competent medico-legal department with the necessary manpower, infrastructure and required equipment. This first newsletter, which has the aim of introducing ourselves, our institutions, MELESON, and of convincing all the stake holders of the medico-legal system of the country that this field has been neglected for far too long, will certainly help in this common endeavor of ours.

I would like to take this opportunity to thank MELESON and applaud the hard work by the executive members. We now have a base-camp platform to begin our common journey from, the journey of developing the field of forensic medicine in Nepal that we all have chosen to pursue.

Dr. Amshu Pradhan

Assistant Professor, Department of Forensic Medicine,
KISTMCTH

KMC View

Trying to build bridges and solve puzzles for the development of Forensic Medicine teaching and practice in Nepal for almost three decades, we have now reached a stage where we at least have enough experts to take better care of the Medico-legal (ML) services in Nepal. From a handful to a crowd of nearly 40 adult experts, which is itself a national achievement, this is an example of how far our field has moved ahead with time. Judges and lawyers, SOCOs and other police personnel and officers, and

MBBS students as well as graduates employed in the Health Service continue to be trained by various government and non-government bodies. But, are we anywhere even near THERE yet?

The latest milestone along this journey was that these 40 adult experts decided to help lighten the “dilemma-producing-non-scientific-evidence” workload of the stake holders of criminal-justice system by giving birth to MeLeSon, the Medico-Legal Society of Nepal. All of us working at different medical colleges all around Nepal then departed with a promise to



establish an autopsy and ML examination centre in private medical colleges where we work, keeping in mind the disheartening quality of services provided in government hospitals next door.

The forensic manpower that we at the Kathmandu Medical College have is certainly adequate to start a ML centre where medical students can achieve firsthand knowledge on the dead teaching the living.

But regarding the necessary space for such a step, we are worse off than the MMC, IOM itself. But the journey continues. The KMC will have such a center in Duwakot, Bhaktapur in the near future.

Dr. Jenash Acharya, M.D.

Lecturer,
KMC, Sinamangal

THE POOR STATE OF THE MEDICO-LEGAL SERVICES IN NEPAL

Medico-legal services in Nepal are not yet fully recognized as a 'service' sector and are treated as if they were an 'unidentified dead body', sadly, by all the stake holders of the medico-legal system of the country. Medico-legal cases are investigated - that is, examined, documented and reported - following almost century-old practices rather than based upon the scientific and legal guidelines necessary to the present generations.

There is no record of when the first medico-legal autopsy was done in Nepal. All the government hospitals are utilized for the investigation of all medico-legal cases, which are mostly brought by the police, but the investigation of which can be initiated through other mechanisms as well, when necessary.

Until about 16 years ago, the Ministry of Home Affairs had a health facility named the Police Surgeon's Office attached to the Central Jail in Kathmandu. The Chief of this facility was always neither a police nor a surgeon, but a senior medical officer, a physician. The prime duties of this facility were to provide medical care to the prisoners in the various jails located in the Kathmandu Valley, admitting them to the different hospitals when necessary. The autopsy of bodies from Kathmandu and Kavre Districts were conducted at the Bir Hospital by the medical officers from the Central Jail Hospital. One small room with a concrete table was allocated for the medico-legal autopsy and an adjacent room of about 12 x 10 feet and with no tables, and no refrigeration of course, served as the body storage area.

In 2056 (1998), when I was a Medical Officer of the Central Jail Hospital after having returned from Sri Lanka with my training in Forensic Medicine, I had to strongly refuse

Dr. H. Wasti

to continue to conduct autopsies in such a poor facility without the minimum basic facilities. A search for a better facility was then made by the Health and Home ministries. Ultimately, the Cabinet of the Ministers of the government decided to shift the medico-legal autopsy service of Kathmandu District from the Bir Hospital to the Forensic Medicine Department of the Maharajgunj Medical Campus, Institute of Medicine, Tribhuvan University. The Forensic Medicine Department started to handle the medico-legal autopsies on 15 Bhadra 2057, using the mortuary there, constructed for the demonstration to medical students. The only medical officer trained in forensic medicine in the government service - that was me then, and the situation is the same now after 16 years - with four other mortuary assistants working at the Bir Hospital mortuary were deputed to the IOM Department of Forensic Medicine.

There were about 65 autopsies performed every month at the Bir Hospital 16 years ago, that is almost 800 a year. There were almost 1,638 autopsies conducted at the Department this last year, in 2072, about four a day, on average.

The three of us at the Forensic Medicine Department, Dr Pramod, Dr Tulsi and myself, handled all the autopsy cases and some of the clinical forensic medicine case in the first ten years. Right from the beginning, dead-body-site visits with the police were quite regularly done. The number of age estimation and torture victim examination cases was higher in the first four years. Examination of cases of alleged sexual assaults began about six years ago. The MD



in Forensic Medicine was started in 2067.

Though the government shifted the medico-legal services of Kathmandu from Bir Hospital to the IOM 16 years ago, it has totally failed in developing the overall medico-legal services in the country during these years. The fact that I am still the only government employee with a post-graduate degree in forensic medicine and that the other almost 40 such graduated are employed in the different medical colleges of the country is a proof of this failure. It seems to have shifted its 'burden', and not its 'responsibility', as the IOM feels that this is the responsibility of the Home Ministry. Thus, our field of forensic medicine and medico-legal services is still, practically, an UNIDENTIFIED and

UNRECOGNIZED field in our country.

Today, there is no government ministry or department that is fully responsible and accountable for the management of the medico-legal services throughout the country. This 'tri-shankhu' state of the medico-legal services in the country has to be addressed immediately, by all the stake holders of the medico-legal system of the country.

The birth of MELESON is a result of the poor state of the medico-legal services of Nepal. Let us all MELESON members do what we can to build a strong foundation upon which a competent and efficient medico-legal system can be built upon in the next 15 years, at the latest!

Some Experience from the VIFM, Australia

Dr. Eugene and I got an opportunity to witness the work of the Victorian Institute of Forensic Medicine (VIFM) in Melbourne, Australia, for a six-week forensic medical fellowship in 2014. This visit was supported by the Australian Leadership Awards Fellowships Program and was funded by the Australian Department of Foreign Affairs and Trade. We thank both of these sponsors for such a beautiful educational experience.

VIFM is an institution focused on how forensic medicine and science can serve the community and the courts. Their statutory responsibilities are to provide independent forensic medical and scientific expertise to the justice system, tissues for transplan-

tation and to both teach and undertake research that will benefit the community. It also serves to provide the justice system with the crucial evidence that underpins safe convictions and appropriate acquittals. Their doctors and scientists investigate deaths reported to the coroner, examine sexual assault victims and alleged offenders and medically assess, treat and support victims of crime.

VIFM is regulated primarily by the Victorian Institute of Forensic Medicine Act 1985. It has a significant degree of autonomy, and for government administrative purposes, it is within the Attorney General's portfolio in the department of Justice and Regulation. I believe es-

tablishing an Institute of Forensic Medicine (IFM) in our country along similar lines would be the ideal alternative to the present state of affairs of the medico-legal system of our country. This IFM would have a fair degree of autonomy and would be 'governed, monitored and supported' by the Board of the Medico-legal Commission which is formed from policy-makers from the Home, Law, Health, and Education Ministries and from the universities that are given the responsibilities of providing medico-legal service. If this is possible, then the field of forensic medicine could develop quite rapidly and people working in this field as well as the general public could get quite a sense of

relief. This provision will also help to address the issue of lack of development funds for forensic medicine and will establish prompt communication links among the police, prosecution, defense lawyers, the media and the IFM, which can then enhance the overall justice system in the country.

The VIFM infrastructure and facilities are modernized, well-equipped and up-to-date. It seemed that they have made no compromise in any aspect of forensic medicine which is critical for maintaining a fair justice system. They have forensic pathology, clinical forensic medicine, histology, forensic anthropology, forensic radiology, toxicology, DNA analysis, tissue bank for

transplantation services and forensic entomology all under one roof. This naturally makes the investigation process very prompt, not like our system, where even mere communication among the existing departments is difficult, and often impossible, delaying the overall verdict in the courts for years and years. They have a huge mortuary where at least 500 bodies can be stored at one time, and always ready for immediate use. Their autopsy room is large enough to perform at least 20 autopsies simultaneously. There is no shortage of mortuary assistants, running water and electricity. Cleanliness and order is the norm there. The floor of the mortuary was clean and dry at all times, with the high-tech cleaning and drying proceeding simultaneously with the autopsy work. They have a state of the art toxicology

lab and radiology facilities. They are equipped with a 256-slice CT scan which is used to scan the body brought for autopsy examination. Simultaneously, a blood sample is taken from the femoral vessel for toxicology. If a cause of death is evident, through CT scan and toxicology, an open autopsy procedure is not carried out.

Here, I am not trying to imply that a CT scan and similar state-of-the-art resources should be available in our mortuaries in Nepal, when these resources are not even accessible for the overwhelming majority of our citizens when they visit the hospitals for their health problems. I am simply trying to convey that at least the basic needs required for an autopsy examination, for example, an autopsy room, a running source of water, adequate lighting, a table, a set of instruments the total cost

of which would not exceed NRS. 10,000.00, and adequate gloves and a few sets of reusable protective autopsy garments should be a guarantee even before an autopsy examination can begin!

One of the reasons that I see for our not having a developed forensic medicine practice is the lack of will power among us who have, willingly or as a personal necessity, chosen this field as our career. And even if we do manage to generate the will power, the political leaders and the policy makers of the government, have - forgive me - no idea whatsoever about how to develop an efficient, low-cost and sustainable medico-legal system in the country.

The prospects for the development of the field of forensic medicine in Nepal are very poor because the political situation of the country is deteriorating and there are

no political leaders who are honest and knowledgeable enough about the field and who have enough time at their disposal to acknowledge the importance and necessity of forensic medicine for a fair justice system. Having said this, does this mean that we don't have any chance of developing our professional field? Not exactly! Think again. If everyone of us does what we can from our respective work place and if all of us combine our efforts to address this problem, all the stakeholders of the criminal justice system as a whole will be 'motivated' to be positively involved in doing their best for the development of the medico-legal system of Nepal.

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Forensic Dentistry in Nepal

A disaster is considered to be any unexpected event leading to loss of human lives and property which may be due to human activity or any natural calamity (Dumancic et al., 2001). In any such event, a forensic dentist has a significant contribution in identification of an individual. Any identification to be confirmed needs scientific basis. This can be done by two methods of identification, primary and secondary. The identifiers DNA, finger prints and dental comparison are the three primary identifiers, and provide a strong basis for identification. In a developing country like Nepal, DNA usage is limited due to financial constraints. Fingerprints provide limited applicability owing to its scanty chances of retrieval in cases of burnt bodies or extensive post-mortem changes. Thus the third type of identifier tooth can be easily used due to its unique properties. The tooth being the hardest element of human body, and being unique to each individual can serve as the most reliable element in identification of the deceased (Ermenc and Renner, 1999). Forensic dentistry is considered to be an integral part of forensic science, as it contributes to identification of disaster victims (Shekar and Reddy, 2009) which is a priority for social, ethical, and legal reasons (Dagalp et al., 2014).

Nepal has a long history of aircraft disasters. There have been more than sixty air crashes over the years 1956 to 2014 and yet no odontologist was involved in the process of DVI. The year 2012 marks the date in the history of forensic dentistry in Nepal. As in the year 2012, the first post-mortem dental examination was conducted for Disaster Victim identification (DVI) in Nepal. The attempt was quite commendable as the victims were completely charred and visually unidentifiable with the first timers working on it. The two consultants without DVI background took the initiative to perform the dental charting. Then the dental charts were compared to ante mortem findings to identify the victims. This air crash also has another important addition to the history of identification in Nepal as the co-pilot was the first Nepali to be identified on dental findings. The total of 16 out of 19 victims was identified on dental findings collaborated with other secondary identifiers and the remaining on medical grounds (Dahal et al., 2014). Similarly, post-

mortem dental examination had a significant contribution in identification during Nepal airlines crash (2014), mountain air helicopter crash (2015), Nepal earthquake (2015) and Avalanche following earthquake (2015). Other than DVI the Kathmandu autopsy center, Maharajgunj is involved with various other aspects of forensic dentistry on day to day practice such as identification, age estimation, bite mark analysis and research. The services provided by the center are quite commendable due to its unmatched contribution to judicial system.

Though forensic dentistry has made a significant contribution in Nepal and established itself as an integral component of justidical proceeding in such a short span of time. It still is in budding stage in Nepal which will certainly bloom with time by joining hands with various other specialties of forensic science.

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The Time since Death and Chemical Changes

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mortem interval (PMI) is the time interval from the death of an individual to the time of examination. In medico-legal autopsies it is very important to give a reliable time-frame since death as it can help include or exclude the suspects involved in the crime, especially when no witness is present. An erroneous PMI can lead the investigation into a wrong path. Unfortunately, no definite or precise method which can fairly accurately estimate the PMI has been devised till now.

- The traditional methods of estimation of the PMI are based on post-mortem physical changes, like rigor mortis, livor mortis, algor mortis and corneal haziness. These physical changes are highly influenced by various external as well as internal factors. So, these methods are now considered unreliable, or they give a wide range of time frame that is impractical in its use in the investigation of crime.
- So, the recent studies of the estimation of the PMI are based on chemical changes that occur in the body after death, on thanatochemistry. Post-mortem chemical analysis can be helpful in:
 - Estimating the time since death,
 - Finding the cause of death, and in
 - Toxicological analysis.

Since 1960, many studies have been carried out to estimate the time since death by chemical analysis. The various analytes that can be studied for the PMI estimation are:

- Potassium, Sodium, Chlorides,
- Hypoxanthine, Xanthine, Lactates,
- Glucose, and
- Amino acids.

The study of these analytes are based on the principles that after death there is a rise or fall in

the concentration of the analytes, and that this is time-dependant. This rise or fall is because of the following reasons:

- Electrolyte (Sodium, Potassium and Chlorides):
- Dysfunction of the Na-K ATPase pump: After death, there is depletion of ATP, hence, the ATP-dependant pumps begins to fail. So, the concentration gradient of sodium and potassium which is maintained by the Na-K ATPase pump by the active transport of the electrolyte against its concentration gradient is lost.
- Autolysis: Autolysis is the aseptic enzymatic breakdown of body tissue. After the breakdown of the cell membrane, the selective permeability that maintains the concentration difference inside and outside the cell is lost. This is the Fick's law of diffusion.
- So, there will be diffusion of electrolytes along its concentration gradient. Potassium, being in high concentration in the intracellular compartment, will diffuse out into the extracellular fluid. Sodium and chloride, being in higher concentration in the extracellular fluid, diffuse into the intracellular compartment. So, with an increase in time, there is a gradual increase of potassium and a fall in sodium and chloride concentrations in the body fluid.
- Metabolites (Hypoxanthine, Xanthine, Lactate):
- Metabolic activity doesn't cease immediately after death. Anaerobic metabolism continues for some time after death, so the product of metabolism can also be studied to estimate the time since death. There is a progressive fall in the glucose and a rise in the lactate level in the body fluid.



- The oxypurines, hypoxanthine, xanthine and uric acid are the terminal products of purine catabolism in man. Hypoxanthine is also a biochemical marker of hypoxia that accumulates in body fluids during hypoxic degradation of adenosine monophosphate (AMP) within minutes after a hypoxic event.
- Product of protein breakdown:
- There is an increase in amino acids due to protein breakdown.
- Other products of bacterial metabolism:

Among these analytes, the most extensive studies have been done on potassium and hypoxanthine.

Biological Samples that can be used are:

- Blood ,
- CSF,
- Vitreous humor,
- Synovial fluid, and
- Pericardial fluid.

Among these body fluids, before 1960, more studies were carried out on blood and CSF. But it was soon realized that the semi-permeability of the cell membrane in these fluid is lost soon after death. Hence, these fluids are now not used for estimation of the PMI.

The concentration gradient after the loss of selective permeability is lost after a few hours in blood, after 15 to 20 hours in CSF and after 120 hours in vitreous humor.

Ideal fluid/sample

The ideal sample for chemical analysis for the estimation of the PMI should be stable, inert, easy to obtain, well-protected from bacterial contamination, and should have a slow rate of decomposition.

Vitreous humor

- Vitreous humor fulfils almost all the criteria for an ideal fluid; so, after 1960, more studies were based on vitreous humor. Vitreous humor is an

inert, colorless, viscous, gel-like substance which is present in the posterior chamber of the eye ball which is bound anteriorly by the lens and ciliary body and posteriorly by the retina. It is around 4 ml in volume, which is approximately two-thirds of the entire globe [1, 3]. Vitreous humor is composed of 99 % water, collagen fibers, hyaluronic acid, soluble protein, sugar, ascorbic acid, lactic acid, and electrolytes.

- The first study on vitreous humor was done by Naumann NH in 1959. In 1963, Sturmer first studied vitreous potassium for the estimation the PMI.
- Vitreous humor is collected with a 5 ml syringe and an 18 gauge needle by a sclera puncture made as much laterally as possible by retracting the lateral canthus. The needle is directed towards the centre of the globe with an angulation of 60 degrees. Around 1.5 to 2 ml of vitreous humor is collected by gentle and slow traction on the syringe. To maintain the contour of the globe, the same amount of normal saline should be replaced into the globe
- Pre-analytical procedure:
- Since vitreous humor is viscous, it can pose difficulty in pipetting during the analytical procedure. Thus, a pre-analytical treatment is used to reduce its viscosity. Various pre-analytical procedures are available, but the simplest method is to centrifuge it at 3,500 rpm for five minutes.
- The formulae for the estimation of the PMI obtained by the various authors are as follows:

Author/year Formula obtained

Sturmer (1963)	$PMI \text{ (hours)} = 7.14 [K^+] - 39.1$
Madea et. al. (1989)	$PMI \text{ (hours)} = 5.26 [K^+] - 30.9$
James et. al. (1997)	$PMI \text{ (hours)} = 4.32 [K^+] - 18.35$

Synovial fluid:

- Synovial fluid is a colorless viscous fluid present in all synovial joints of the body that helps lubricate





the joint. It is well-protected by the synovial membrane of the joint. It is secreted by the cells lining the synovial membrane. It is a derivative of plasma with a higher amount of hyaluronic acid

- It is widely used in clinical rheumatology.
- Before 2001, it was studied for the estimation of alcohol concentration, drug distribution and cause of death. In 2001, Madae B studied the PMI using synovial fluid and found that the accuracy is similar to that of vitreous humor.
- Thus, synovial fluid can be used in mutilated bodies, when the head or eyes are missing and in cases of ocular trauma.

Drawbacks:

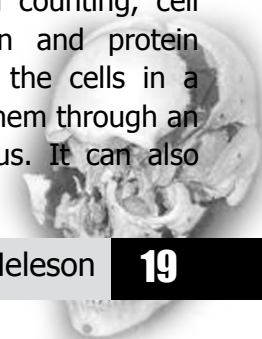
- No reference values.
- Lack of standardized pre-analytical procedures.
- Lack of a standardized analytical procedure. The values differ according to methods applied.
- The instruments used are validated and calibrated for the use of blood and urine.
- Poor reproducibility.

Recent advances

- H magnetic resonance spectroscopy (H MRS)
 - Once putrefaction is apparent, estimation of the PMI becomes even more difficult and unreliable.
 - Thirty years ago, protein degradation products in the brain were studied and a method of estimation of the PMI on the basis of amino acid concentration in the brain was proposed.
 - Recently, magnetic resonance imaging (MRI) is being used to identify protein degradation metabolites released in the brain during decomposition. First, the metabolites have to be characterized. About 30 such metabolites have been identified and 19 of them show well-defined time courses. The study is being done on sheep, pigs and on selected human brains. The animal and human brain showed

similar metabolites at similar time courses. Five metabolites studied can give a relatively accurate PMI of up to 250 hours and 10 metabolites up to 400 hours. This is a non-invasive chemical analysis.

- This research is currently being carried out by a group of researchers at the Institute of Forensic Medicine and the Department of Clinical Research, University of Bern, Switzerland.
- Immunohistochemistry
 - The process of detecting antigens (e.g., proteins) in the cells of a tissue section by exploiting the principle of antibodies binding specifically to antigens in biological tissues is immunohistochemistry.
 - Detection of insulin, thyroglobulin and calcitonin: The theory behind this is that these compounds are hormones, i.e., functional proteins, and that with the increase in the PMI, the structures of these proteins degrades and denatures and immunohistochemical staining becomes negative with time. Thyroglobulin in the thyroid stains positive for five days post-mortem and negative after 13 days. Insulin in the B-cells of the pancreas stains positive for 12 days and negative after 30 days post-mortem and calcitonin in the C-cells of thyroid positive up to four days and negative after 13 days post-mortem.
- DNA degradation
 - Recent studies on DNA degradation for the prediction of the post-mortem interval is by flow cytometric evaluation. Flow cytometry is a laser- or impedance-based, biophysical technology employed in cell counting, cell sorting, biomarker detection and protein engineering, by suspending the cells in a stream of fluid and passing them through an electronic detection apparatus. It can also detect DNA degradation.





- At first DNA degradation was thought to be independent of any external factors. But since DNA can also be degraded by decomposition, it has now been proved that this method is also influenced by various external as well as

internal factors. So, again, the accuracy of this method is not reliable.

- So, researchers are still in search of a reliable new method which can more accurately estimate the time since death.



Age Estimation at the Department of Forensic Medicine, MMC, IOM, TU

Dr. Jwala Kandel, 3rd year M.D. resident

Clinical forensic medicine is a major branch of forensic medicine which, if developed, can significantly strengthen the rule of law in developing countries like ours. This field involves the medico-legal examination of the living to help the judiciary impart justice to the society as a whole.

Age estimation is an important aspect of clinical forensic medicine. The estimation of individual age is important in various civil and criminal lawsuits. In the context of Nepal, where mandatory and verifiable birth certification has not yet been implemented, age estimation of especially teenagers who have been accused of various offences and are under prosecution greatly helps the case to move forward in the courts.

The age of an accused is a factor that will determine the punishment that will be handed out by the court if the accused is found guilty of the offence he or she is being prosecuted for.

At this department, age estimation is carried out with the aid of general physical appearance, secondary sexual characteristics, dentition and the degree of appearance and fusion of the various centres of ossification viewed through x-rays.

The total number of cases that were brought for age estimation to the department in the three-year period from 2069 B.S to 2072 B.S was 245. Of these 245

cases, 158 were males (64.5 %) and 87 females (35.5 %).

Of the 158 male individuals, 65 had been accused of theft (41.1 %), 43 of sexual assault or attempt to sexually assault (27.2 %), 17 of drug trafficking (10.8 %), 14 of homicide or attempted homicide (8.8 %), and 12 of other crimes like creating public nuisances, being involved in fights, etc. (7.6 %). Six, of the 158, were brought as alleged victims of sexual assault (3.8 %) and 1 individual had been accused of kidnapping.

Of the 87 females, 71 were brought as alleged victims of sexual assault (81.6 %), 5 as victims of human trafficking (5.7 %), and 9 individuals, 3 each, respectively, were brought as the accused of a homicide (3.4 %) or an attempted

homicide (3.4 %), theft (3.4 %), and of other crimes such as creating social disorder (3.4 %). One individual (1.4 %) was brought accused of kidnapping and one (1.4 %) of drug trafficking.

The alleged age coincided with the reported age in 177 of the total 245 individuals whereas it was found different in the remaining 68 cases, out of which 47 were males and 21 females. The alleged age was different from the reported age in 29.7 % of males and 24.1 % of females.





Statistics of Alleged Sexual Assault Cases of the Last Three Years at the Department of Forensic Medicine, MMC, IOM, TU

Dr. Srijana Kunwar, Dr. Samjhana Ghimire, Dr. Jwala Kandel
M.D. residents, 3rd Year, Maharajgunj Medical Campus)

The incidence of sexual violence is notoriously difficult to measure and there is no single data bank that can accurately mirror the prevalence of sexual crimes in a society. But if such data are collected and analyzed from time to time, the picture can become clearer, and the problem of sexual crimes in our population better understood.

The data used here for statistical evaluation is the total number of alleged sexual assault cases whose examination was conducted at the Department of Forensic Medicine, Maharajgunj Medical Campus in the three years of 2069 to 2072 B.S.

The total number of alleged sexual assault cases that were registered in these three years was 285.

A table, two pie-charts and two graphs have been used to present the picture of the problem of sexual crimes in our country.

The following table shows the number of cases according to the age group:

Age group	Number of cases
Less than 5 years	20
6 to 10 years of age	42
11 to 15 years of age	124
16 to 20 years of age	53
21 to 25 years of age	24
26 to 30 years of age	8
31 to 35 years of age	7
36 to 40 years of age	3
41 to 45 years of age	1
46 to 50 years of age	1
51 to 55 years of age	1
56 to 60 years of age	1
Total number of cases	285

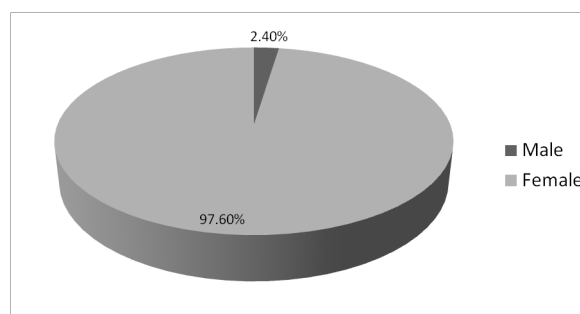


Figure 1. Sex distribution of the alleged sexual assault victims

Of the total number of 285 cases, 7 (2.40 %) were male, with 6 of them in the under 6 to 10 years age group, and 1 was two-and-a-half years old. The 278 females accounted to 97.6 % of the total. Of the 278 females, 124 were in the 11 to 15 years age group.

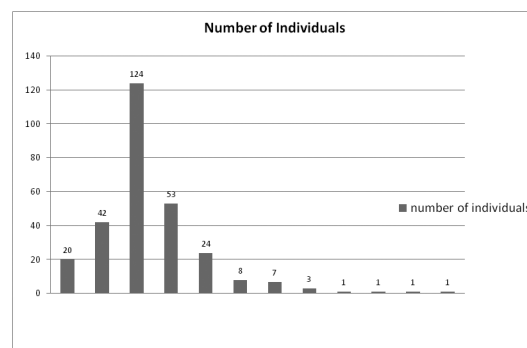


Figure 2. Age distribution of the cases

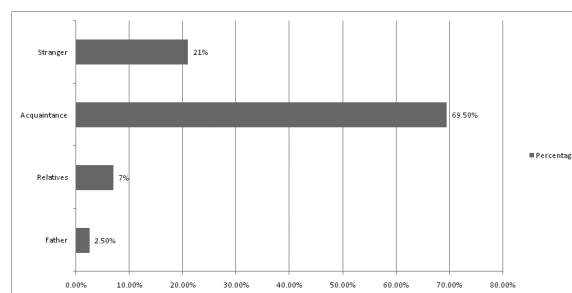


Figure 3. Alleged perpetrators of sexual assault





According to the history taken from the victims, among the alleged perpetrators, 198 were acquaintances (69.5 %) who were either boyfriends, neighbors, house owners or school teachers; 60 were strangers (21 %); 20 were relatives (7 %), and 7 were fathers of the victims (2.5 %).

While performing the clinical examination of the alleged victims, 159, or 55.8 %, of the total of 285 cases had positive findings corroborative with the history provided by the victims.

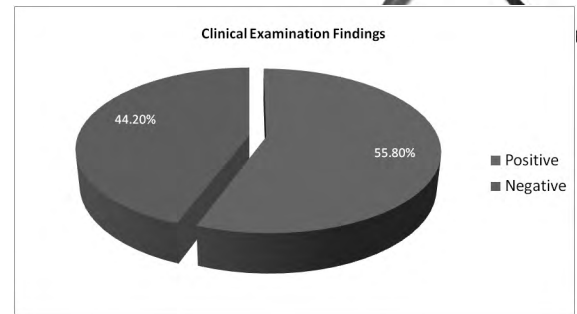


Figure 4. Distribution of cases according to the findings after examination

नेपालमा कानुनी चिकित्सा क्षेत्र: चुनौती र सुधारका उपायहरू

चिकित्सकको भूमिका विरामीको उपचार मात्र गर्ने नभई मेडिको लिगल कार्यहरू गर्ने र अदालतमा उपस्थित भई विशेषज्ञ राय दिने पनि हुन्छ । चिकित्सकले प्रदान गर्ने विशेषज्ञ रायहरू मध्ये शव परिक्षण, घाउ जांच, जबरजस्ती करणीको मुद्दामा महिला र पुरुषको जांच, उमेर निर्धारण, शारीरिक तथा मानसिक अशक्तता आदि पर्दछन् । चिकित्सकको मुख्य भूमिका विरामीको उपचार गर्ने भएतापनि उनीहरू मेडिको लिगल कार्यमा पनि निपूर्ण हुन जरूरी हुन्छ । यो उनीहरूको राष्ट्रप्रतिको उत्तरदायित्व हो ।

चिकित्सकले तयार पार्ने मेडिको लिगल रिपोर्ट र विशेषज्ञ रायले न्याय सम्पादनमा निकै महत्व राख्दछन् । न्यायधिश र वकिलहरू चिकित्सा विज्ञानमा निपूर्ण नहुने भएकाले उनीहरू चिकित्सको रिपोर्ट र रायमा निर्भर रहेर न्याय सम्पादन गर्नुपर्ने हुन्छ । त्यसकारण चिकित्सकहरू सन्वेदनशील भएर मेडिको लिगल कार्य सम्पन्न गर्नुपर्ने हुन्छ । चिकित्सकको सानो गल्तीले सांचो अपराधी निर्दोष सावित हुने र निर्दोष व्यक्ति अपराधी कहलिने प्रशस्त सम्भावना हुन्छ ।

सामान्य चिकित्सक र फरेन्सिक विधा बाहेका अन्य विशेषज्ञहरू मेडिको लिगल कार्यमा निपूर्ण नभएतापनि सो कार्य गर्न वाध्य हुन्छन् । उनीहरू विरामीको उपचारमै बढी लगाव राख्ने सम्भावना हुन्छ । कतिपय अस्पतालहरूमा एकलो चिकित्सक रहेको हुन्छ र उसैले नै सबै कार्यहरू सम्पन्न गर्नुपर्ने हुन्छ । त्यसैले मेडिको लिगल कार्यमा दक्ष नभएतापनि उनीहरू वाध्य हुन्छन् ।

उता, प्रहरी, वकील र न्यायधिश लगायतका न्याय सम्पादन गर्ने कर्मचारीहरूले चिकित्सकबाट तुलो अपेक्षा राखेका हुन्छन् । उनीहरूले सो क्षेत्रमा सबै चिकित्सकहरूलाई विशेषज्ञ नै ठानेका हुन्छन् । त्यसकारण चिकित्सकहरू मेडिको लिगल क्षेत्रमा दक्ष हुनु जरूरी छ । यसको लागि उनीहरूलाई प्रयाप्त तालिम दिइनुपर्छ र साथै चिकित्सकहरू स्वयं पनि आफ्नो उत्तरदायित्व महसुस गरी दक्षता राख्न जरूरी हुन्छ ।

नेपालको परिपेक्षमा खास गरी लाशघरहरू अति नै जिर्ण छन् । त्यहां काम गर्ने सहयोगी जनशक्ति तालिम प्राप्त छैनन् । लाशघरमा आवश्यक पर्ने न्यूनतम भौतिक पर्वाधारहरू छैनन् । मृतकका आफन्तहरूको लागि प्रयाप्त बस्ने ठाउं, शौचालय, पिउने पानी आदिको व्यवस्था छैन । लाश राख्ने कोल्ड च्याम्बरको व्यवस्था नहुने र यदाकदा भएपनि विग्रिरहने र समय समयमा बिजुली काटिने हुनाले लाशहरू छिट्टै सड्ने र दुर्गन्ध फैलिने गर्दछ । साथै अस्पताल वरपर संक्रमण फैलिने सम्भावना हुन्छ । मृतकका आफन्तहरूले अन्तिम समयमा मतकलाई हेर्न चाहन्छन् तर लाशघरहरूको प्रतिकूल वातावरणले गर्दा उनीहरूलाई भन आघात हुने गर्दछ । त्यसैले नेपालका लाशघरहरूको भौतिक आवस्थामा निकै सुधार गर्नुपर्ने अपरिहार्य आवश्यकता छ ।

अहिलेको सन्दर्भमा नेपालमा प्रयाप्त फरेन्सिक चिकित्सकहरूको उपस्थिति रहेको छ । उनीहरू मेडिको लिगल क्षेत्रमा दक्षता हासिल गरेका हुन्छन् र सामान्य चिकित्सकहरू भन्दा गुणस्तरीय रिपोर्टहरू तयार गर्ने र न्याय सम्पादनमा तुलो योगदान पुयाउन

सकदछन् । तर नेपालमा शव परीक्षण लगायत मेडिको लिगल कार्यहरू सरकारी अस्पतालमा गरिनु पर्ने व्यवस्था छ र सरकारी अस्पतालमा फरेन्सिक चिकित्सको नगन्य दरबन्दी छ । त्यसकारण प्राय फरेन्सिक चिकित्सकहरू शिक्षण अस्पतालमा मेडिकल शिक्षामा मात्र कार्यरत छन् । त्यसैले अहिले तत्कालै क्षेत्रिय र अंचल अस्पतालहरूका फरेन्सिक चिकित्सकहरूको दरबन्दी स्थापना गरी उनीहरूलाई मेडिको लिगल कार्यहरू गराउने व्यवस्था हुन जरूरी छ । साथै शिक्षण अस्पतालहरूलाई पनि मेडिको लिगल कार्यहरू गर्न अनुमति प्रदान गरेर पनि तत्काल यो संकट टार्न सकिन्छ ।

अहिलेको सन्दर्भमा मात्रै हेर्ने हे भने घाउ जांच स्वास्थ्य परीक्षण जस्ता मेडिको लिगल कार्य प्राइभेट अस्पतालका चिकित्सकहरूले पनि गरीरहेका छन् र यी प्रतिवेदनहरूको प्रयोग प्रहरी र न्यायलयहरूमा पनि भइ नै रहको छ । त्यसकारण शव परीक्षण, उमेर निर्धारण, बलात्कारको पिडित र पिडकको परीक्षण पनि शिक्षण अस्पतालहरूमा गर्ने प्रवन्ध गर्ने तर्फ सम्बन्धित निकायको ध्यान जान जरूरी छ ।

निष्कर्ष

चिकित्सकले तयार पारेका मेडिको लिगल रिपोर्ट र बिशेषज्ञ राय अदालतमा प्रमाणको रूपमा लिइन्छन् र न्याय सम्पादनमा विशेष महत्व राख्दछन् । त्यसैले चिकित्सकहरू यस विषयमा गम्भीर भएर प्रतिवेदन तयार पार्नु पर्दछ । साथै चिकित्सकहरूलाई मेडिको लिगल क्षेत्रमा तथा उनीहरूको प्रतिवेदनको उपयोगिता विषयमा निरन्तर तालिम प्रदान गरिनुपर्दछ । चिकित्सा क्षेत्रमा विशेषज्ञता हासिल गरेका चिकित्सकहरूबाट गुणस्तरीय र तथ्यगत प्रतिवेदन प्राप्त हुने हुंदा राज्यले उनीहरूलाई सो कार्यको लागि हौसला प्रदान गरिनु पर्दछ । शवगृह, आवश्यक उपकरणहरू लगायतको गुणस्तरमा बृद्धि गरी चिकित्सकहरूबाट प्रदान हुने मेडिको लिगल सेवाको बृद्धि गर्न सके उचित न्याय सम्पादनमा चिकित्सकको तर्फबाट अदालतलाई अतुलनीय योगदान हुन सकदछ ।

डा नुवादत्त सुवेदी

कलेज अफ मेडिकल साइन्सेज,
भरतपुर

Situation at KUSMS

Faculty:

1. Dr Raj Kumar Karki, MBBS, MD (Forensic Medicine) Assistant Professor
2. Dr Pankaj Kumar Singh, MBBS, MD (Forensic Medicine) Lecturer

Recent activities:

1. Regular theory and practical classes to MBBS (6th & 7th semester) medical students.
2. Theory classes to BDS medical students.
3. Medico legal activities:
 - a. Examination of sexual assault cases (Dhulikhel hospital as one of the center of OCMC program)
 - b. Examination and issuing of age determination and injury certificate.
4. Inauguration of Forensic building on 26th Jan-

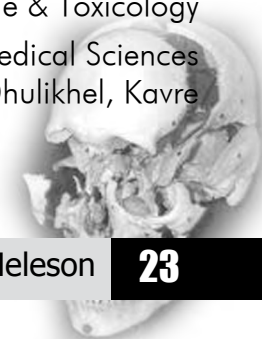
uary 2016, which comprises of mortuary room, cold chamber room with other offices. (Plan to complete by one year)

5. Various researches under the field of Forensic Medicine undergoing and some of them already published.

Future plan: To start autopsy after completing the Forensic building.

Dr. Raj Kumar Karki

Department of Forensic Medicine & Toxicology
Kathmandu University School of Medical Sciences
Dhulikhel, Kavre





Forensic Medicine Community of Nepal (MELESON Members)

I. Tribhuban University

A. Maharajgunj Medical Campus Maharajgunj; Faculties

- | | |
|------------------------------|------------|
| 1. Dr. Pramod Kumar Shrestha | 9851045342 |
| 2. Dr. Tulsi Kadel | 9851045327 |
| 3. Dr. Harihar Wasti | 9851041710 |
| 4. Dr. Rijen Shrestha | 9841135105 |
| 5. Dr. Gopal Chaudhary | 9818324718 |
| 6. Dr. Eugen Dolma | 9813838781 |
| 7. Dr. Mani Maharjan | 9841711088 |

MMC Maharajgunj ; Residents

- | | |
|-----------------------------|------------|
| 1. Dr. Binamra Bista | 9802060087 |
| 2. Dr. Jwala Kadel | 9803727489 |
| 3. Dr. Srijana Kunwar | 9841028338 |
| 4. Dr. Samjhana Ghimire | 9841323219 |
| 5. Dr. Arbin Shakya | 9841184823 |
| 6. Dr. Geshu Lama | 9808638868 |
| 7. Dr. Devendra Man Palikhe | 9856033620 |
| 8. Dr. Kashev Shrestha | 9845237333 |

B. National Medical College Birgunj; Faculties

- | | |
|---------------------------------|------------|
| 1. Dr. Abdul Sami Khan, Birgunj | 9819053246 |
|---------------------------------|------------|

C. Kist Medical College Lalitpur; Faculties

- | | |
|----------------------|------------|
| 1. Dr. Amshu Pradhan | 9851236755 |
|----------------------|------------|

D. Chitwan Medical College Bharatpur; Faculties

- | | |
|------------------------|------------|
| 1. Dr. Birendra Mandal | 9842023029 |
|------------------------|------------|

E. Nepal Army Academy of Health Sciences; Faculties

- | | |
|---------------------------------|------------|
| 1. Dr. Prakash Chandra Panjiyar | 9851113627 |
|---------------------------------|------------|





F. Universal College of Medical Sciences Bhairahwa; Faculties

1. Abhisekh Karna

9842038389

G. Gandaki Medical College Pokhara; Faculties

1. Dr. Nilu Hirachan
2. Nuwa datta Subedi

9841539300

9855054563

II. BPKIHS Dharan; Faculties

1. Dr. BN Yadav
2. Dr. Sibendra Jha
3. Dr. Bikash Shah

9842022068

9852049121

9845224780

BPKIHS Dharan; Residents

1. Sugam Shrestha
2. Dikshant Pokhrel
3. Santosh Koirala

9843518436

9842139530

9846784250

III. Kathmandu University

A. KUMS Dhulikhel; Faculties

1. Dr. Raj Kumar Karki
2. Dr. Pankaj Kumar Singh

9849510585

9803284432

B. Kathmandu Medical College; Faculties

1. Dr. Jenash Acharya
2. Dr. Archana Chaudhary

9851096732

9801032248

C. Nepal Medical College; Faculties

1. Dr. Barsika Katuwal
2. Dr. Alok Atreya
3. Dr. Niranjana Shrestha

9841555122

9803252193

9803545177

Nepal Medical College; Residents

1. Dr. Bhumi Kala Limbu

9849277790

D. Nepal ganj Medical College; Faculties

1. Dr. Binus Bhandari
Lecturer

9818110599





E. Manipal College of Medical Sciences Pokhara; Faculties

1. Dr. Madan Prasad Baral

9846552765

Manipal College of Medical Sciences Pokhara; Residents

1. Dr. Malshree Ranjitkar
2. Dr. Rajesh Kumar Shah

9851014510

9848029725

F. Lumbini Medical College Palpa; Faculties

1. Dr. Sanjaya Shah

9842880199

G. College of Medical Sciences Bharatpur; Faculties

1. Dr. Tej Prakash Chataut

9841202130

Other Forensic Medicine Specialists outside any Institutions of Nepal

1. Sudamshu Sharma M.D., D.M.J. Professor (Baidehi MC Banglor India)
2. Dr. Manoj Shresta M.D. Forensic Medicine (Studying Cardiology in Pakistan)
3. Dr. Sharmila Gurung M.D. Forensic Medicine (Studying Medical Ethics at Belgium)
4. Dr. Sudhir Raman Parajuli M.D. Forensic Medicine

9856034741

Forensic Odontology

1. Dr. Nitin Kumar Agrawal MDS, M.Sc. in For. Odontology
2. Dr. Samarika Dahal MDS, M.Sc. in For. Odontology

9851147617

9841363051





हत्या वा आत्महत्या को संकाका विचमा भुण्डीएका लासहरू

आत्महत्या गर्ने विभिन्न तरिकाहरूमा संसारभरी एकरूपता नभए पनि कतिपय तरिका जहाँतहीं अपनाउने गरेको पाईन्छ । यस्ता तरिका मध्ये भुण्डीएर मर्नु, विष सेवन गरी मर्ने प्रयास गर्नु, उचाईबाट हाम फाल्नु, पानीको ठूलो श्रोतमा पसी मर्ने प्रयास गर्नु, बन्दुक जन्थ हतियारहरू आफ्नै जीउमा ताकेर पड्काउनु, मर्नका लागि मट्टीतेल छर्की आगो लगाउनु र धारिलो हतियारले घाँटी वा शरीरका अन्य भागमा काट्नु केही मुख्य तरिकाहरू हुन् ।

भुण्डीएर गरिने आत्महत्या

आफ्नो ज्यान लिनको लागि भुण्डीएर मर्ने तरिका मानव सभ्यताको सुरुका दिन देखिने सुरु गरिएको पाईन्छ । यसमा मर्ने व्यक्तिले कुनै लचकदार केही लामो चिज बस्तु जस्ताई गाँठो पारी वा अन्य तरिकाले कुनै ठाउँमा बाँध्न वा अड्काउन सकिने र फेरो पार्न मिल्ने जस्तो कपडा, डोरी, पेटी, नाम्ला, दाम्ला आदीको प्रयोग गर्दछ । कहिले काँही जुत्ताको तुना,पकेट रूमाल, टाई र आफ्नै लामो कमालले समेत सफलतापूर्वक आत्महत्या गरिएका अवस्था फेला पर्दछन् । आत्महत्याका विभिन्न उपाय मध्ये भुण्डीएर मर्ने तरिका संसारका सबै देशमा प्रमुख रूपमा अपनाईने तरिका हो । क्यानडामा यो सबैभन्दा बढी प्रयोग गरिएको तरिकामा पर्दछ भने अमेरिकामा बन्दुक जन्थ हतियारको प्रयोग पछि दोश्रो प्रमुख तरिकामा पर्दछ । यस्तै संयुक्त अधिराज्यमा लोग्ने मानिसहरूमा पहिलो र स्वास्नी मानिसहरूमा विष सेवन पछिको दोश्रो प्रमुख तरिका अपनाई मानिस भुण्डीएर आत्महत्या गर्दछन् । नेपालमा पनि भुण्डीएर मर्ने तरिका आम रूपमा प्रयोग गरेको पाईन्छ । काठमाण्डौमा गरिने लास जाँच केन्द्रमा गरिएको एक अध्ययनबाट प्राप्त तथ्यांक अनुसार करिब २०% अप्राकृतिक मृत्युहरूको भारमा आत्महत्या पाईएका छन् भने ति मध्ये ५८% ले भुण्डीएर आत्महत्या गरेका छन् भने ४०% ले विष सेवन गरेका छन् । यसमा ७५% जति १५ देखि ४५ वर्षका पाईएका छन् हरेक ५ जना आत्महत्या गर्ने मध्ये ३ जना पुरुष र २ जना महिला पर्दछन् । पुरुष र महिला दुवैमा भुण्डीएर मर्ने तरिका नै सबै भन्दा बढी अपनाएको देखिन्छ ।

संसारभरी नै भुण्डीएर गरिने आत्महत्या किन धेरैले रोजेको होला भन्ने प्रश्नको उत्तर सजिलो गरी मिल्ने गर्दछ । पासोको रूपमा प्रयोग गरीने बस्तु आफैँसँग सँधे भईरहेको हुन्छ । यसको लागि खोज्ने समय र पैसा केही चाँहिदैन । भुण्डीने स्थान आफ्नै कोठा, ट्वाईलेट, रूखको लच्केको हाँगो आदी पर्याप्त हुन्छ । मर्नको लागि लामो पिडा नहुने र मानिस तुरुन्त थाहा नपाई मर्ने भएकोले यो तरिका धेरै लोकप्रिय भएको हो । घाँटीमा बाँधिने पासोलाई आफ्नै जीउको पुरा वा आंशिक तौलले तल तिर तानीने गरी कुनै स्थानमा बाँधी वा अड्काई जिउ छाडी दिएमा घाँटीमा चाप पर्दछ । सो चापको कारण घाँटी भित्र भएका रगत तलमाथी जाने आउने नसाहरू, गिदीबाट जीउ तिर जाने स्नायु नसाहरू र स्वास नलि समेत थिचीन वा चेप्टीन पुग्दछन् ।

भुण्डीने प्रकृत्यामा पासो कहिँ अड्काएर यसको दुवै टुप्पा घाँटीको छेउछाउ नवाँधीकनै माथी एकै ठाउँमा परे पनि च्यापुको हड्डीले घाँटीमा अड्कीन सजिलै मिल्ने हुन्छ । अलिकती उँचो ठाउँबाट खुट्टा मात्र छाडी दिएमा घाँटीमा चाप पर्दछ र यसरी परेको चापबाट गिदीमा पर्ने असरले

व्यक्ति तुरुन्त होस गुमाउन पुग्दछ । होस गुमी सकेपछि खुट्टाले वा घुँडाले नै टेके पनि हातले दिमागको निर्देशन नपाएका कारण केही काम गर्न वा सो पासोलाई हटाउने प्रयास गर्न सक्दैन । यो अवस्था केही मिनेट मात्र रहेमा व्यक्ति मरी सकेको हुन्छ । अरू कसैले देख्ने वा पाउने भनेको केही समय वितिसकेपछि मात्र हो त्यसैले तुरुन्त नै अस्पताल पुन्याईएता पनि पुनः बचाउन सकिने संभावना नै रहँदैन । भुण्डीने क्रममा व्यक्तिले केही उचाई भएको स्थानको उपयोग गरेको हुन्छ । जस्तो खाट, कुर्सी, टेबल, डोको, मुडा वा प्राकृतिक रूपमा नै केही उचो स्थानबाट होचो तर्फ घाँटीमा पासो सहित तलतिर हुत्तिनु वा खस्नु भुण्डीएर मर्ने प्रकृत्याको मुख्य आवश्यक परिस्थिति हो । सो गर्दा खुट्टाले सर्पोट लिएको वस्तु लड्ने कोल्टीने सम्म हुन सक्दछ र छोटो समयको लागि शरीर छटपटाउन सक्दछ जसले गर्दा सोही प्रकारका शरीरको कुनै भागमा सानातिना चोटपटक पनि देखिन सक्दछन् । यसरी केही सेकेण्ड देखि थोरै मिनेटको समयमा नै सबभन्दा पहिले दिमाग अचेतन भई वेहोस भएको व्यक्तिला आफूलाई बचाउने कोशिस गर्ने संभावित प्रयासहरू केही पनि भुण्डीएर मरेको लासमा गरिएका पाईदैनन र मृत शरीर आधा सेतेको, भित्तामा लत्रिइएको, ढाड घुँडा वा खुट्टाले जमिनमा टेकेको देखि लिएर पुरा भुण्डीएकै अवस्थामा पनि परिस्थिती अनुसार पाईन्छन् । पासोको प्रकृती अनुसार कहिले काँही तन्कने क्रममा पासो कुनै पनि ठाउँमा चुढीन पुगेमा मृत सरीर जमीनमा खस्न पुग्दछ । यस्तो अवस्थामा सरीरको कुनैपनि भाग तल ठोकिँदा चोट समेतपर्न सक्दछ र घाँटीमा वेरिएको एउटा टुक्रा सरीरमा र माथी बाँधिेको ठाउँमा चुँडीएको पासोको अर्को बाँकी टुक्रा घटनास्थलमा भेटिन्छ ।

"अन्यथा प्रमाणित नभएमा सबै भुण्डीएको अवस्थामा पाईएका लासहरू आत्महत्या नै हुन्" "All hanging deaths are considered as suicidal unless proved otherwise" यो एक कहावत नभएर भुण्डीएका अवस्थामा पाईएका लासहरूमा विस्वव्यापी रूपमा गरिएको अनुसन्धानहरूको निकर्ण हो । परिस्थिती अनुसार भुण्डीएर मर्ने कहिले काँही दुर्घटना पनि हुन सक्दछ । तर, यस्मा परिस्थिति जन्थ प्रमाणहरू स्पष्ट हुन्छन । जस्तो केटाकेटीहरू खेल्ने क्रममा यदाकदा र ठूलै मानिस पनि डोरीको सहाराले उचाईमा काम गर्ने क्रममा यस्ता अवस्था पाईन्छन् । त्यस्तै अहिले पनि धेरै देशहरूमा प्रचलित अदालती आदेशको "Hang to death" पालना गरिँदा अपनाईने Judicial hanging को अवस्था लाई आत्महत्या मानिने कुरा भएन किनकी यसमा परिस्थिती नै अन्यथाको अवस्थामा हुन्छन । एकले अर्को व्यक्तीलाई भुण्डीएर मार्ने अर्थात् Homicidal hanging पनि असम्भव भने छैन तर व्यवहारिक र वास्तविक रूपमा त्यसलाई कार्यान्वयन गर्न त्यती सजिलो नहुने हुँदा ज्यादै थोरै वा नगन्थ संख्या मात्र यस भित्र पर्दछन् । खासगरी असहाय अर्थात् प्रतिकार गर्न नसक्ने र थोरै शारिरिक तौल भएका व्यक्तिलाई मात्र यसरी भुण्डीयाउन सकिन्छ । एउटा चेतना भएको वयस्क व्यक्तिलाई अर्को व्यक्तीले भुण्डीयाउन असंभवन नै हुन्छ । भुक्यानमा पारी विशेष तरिकाको पासो प्रयोग गरी त्यसलाई कही अड्काई तुरुन्त भुण्डीएको अवस्थामा पुन्याउन कोशिस गरिँदा मृतकको शरीरमा अन्य धेरै त्यस्ता प्रकारका चिन्हहरू उत्पन्न हुन्छन जसलाई अन्यथा भनी मान्ने पर्याप्त आधारहरू रहन्छन् । मानव शरीर कपास जस्तो हलुका नहुने र व्यक्तीले नचाहेमा निजलाई पकड्न मात्र पनि त्यती सजिलो र सहज हुँदैन । जिउँदै भुण्डीयाउन गरीएको प्रयासबाट



घस्रिने, लछारपछार हुने र पकड्नु पर्ने तान्नु पर्ने जस्ता प्रकृयाले सोही कारणसँग मेल खाने चोटपटक शरीरमा देखा पर्दछन् र त्यसलाई अन्यथाका लक्षणमा लिनु पर्दछ । यसो गर्दा घटनास्थलमा एक दुई जना भन्दा बढीको उपस्थिती र तिनीहरूका कृयाकलापले गर्दा घटनास्थल पनि आफैँ भुण्डीएको भन्दा धेरै फरक हुन जान्छ ।

भुण्डीएको लास जाँच गर्दा शरीरमा देखिएका सबै लक्षण तथा चिन्हहरूको अभिलेखीकरण गरी अन्त्यमा यदी लासमा अरू मर्न सक्ने लक्षणहरू छैनन भने मृत्युको कारण जबलनप्लन भनी दिने गरीन्छ । यदी कसैले भुण्डाएको अवस्था भए पनि मृत्युको कारण जबलनप्लन नै हो । करिव सबै भुण्डीएका पाइएका लासमा परिस्थिती आत्महत्या हुने गरेकोले चिकित्सकले आत्महत्या लेखि दियो भनी संकास्पद मृत्युका सन्दर्भमा त्यस्तो प्रतिवेदनको ठाडै आलोचना गर्ने गरीन्छ । तर, चिकित्सकले हत्या वा आत्महत्या भन्न नमिल्ने कतिपय अवस्थामा नसक्ने पनि भएकोले लास जाँचमा पाइएका लक्षण परिस्थितीसँग मेल खान्छन्, खाँदैनन् भनी सुक्ष्म अध्ययन गर्नु अनुसन्धानकर्ताको प्रमुख दायित्व हो । कहिलेकाँही भुण्डीएको अवस्थाका लासमा अन्य बारदातका लक्षणहरू स्पष्ट देखिने र मरी सकेको मृत शरीरलाई भुण्डाएर राखीदिने गरेका पनि पाईन्छन् । राम्रो सँग पुर्णताका साथ गरिएको लास जाँचमा मृत्युको कारण अरू नै भेटिन्छन् जो भुण्डीनु सँग कुनै प्रकारले सम्बन्धीत हुँदैनन । यस्तो अवस्थामा भुण्डीनुको मुख्य लक्षण घाँटीको डाम ११बतगचभ ञबचप० जिउँदो हुँदा परेको भन्दा फरक पनि भेटिन्छ । यो पंक्तीकारले गरेका भण्डे ३ हजार भन्दा बढी भुण्डीएका लासमा ३ वटा मात्र त्यस्ता अवस्था भेटिएका छन् ।

भुण्डीएर मर्दाका लक्षणहरू

कुनै पनि अप्राकृतिक मृत्युको खास कारण र त्यसका सहायक कारणहरू पत्ता लगाउनु मृत्यु सम्बन्धी गरिने अनुसन्धानको प्रमुख उद्देश्य हो । यस्ता अवस्थामा परिस्थिती, मृत्यु भएको स्थान र मृत शरीरको सुक्ष्म अध्ययन आवश्यक पाटा हुन । भुण्डीएको लासमा प्रारम्भिक अनुसन्धानको समय देखिने मृत व्यक्तिको जिउँदो हुँदाको अवस्थाका कृयाकलाप देखि लिएर निजको अरूसँग भएको वा हुन सक्ने अन्तरक्रिया जस्ता सम्पूर्ण व्यवहारको सूचना संकलन गर्नु पर्दछ । यदी निजको मनोदिशा सम्बन्धी गडबडी फेला परेमा एउटा परिस्थितीजन्य प्रमाणमा लिनुपर्ने हुन्छ । कतिपय व्यक्तिले मर्नु पूर्व मृत्युकालीन सूचना Suicide note मार्फत समेत दिन गर्दछन् । यस्तो तथ्य मरिसके पछि कुनै कागजमा लेखिएको नोट, चिठी जस्ता प्रमाणबाट फेला पर्दछ । यदाकदा विवाह नभएका तथा विधुवा महिलाहरूको भुण्डीएका लासहरूमा विकसीत हड्डी गरेको गर्भावस्था वा भर्खरै गर्भ पतन गराएका लणहरू पनि लास जाँचका क्रममा भेटिन्छन जो भुण्डीनाको कारण बनेका हन्छन

अर्को परिस्थितीजन्य प्रमाणको रूपमा घटनास्थललाई लिनु पर्दछ । घटनास्थलमा चिज वस्तुहरूको गडबडी कुन रूपमा भएको छ वा छैन, बन्द कोठा भित्र भए सो कोठामा जान, निस्कन सक्ने वैकल्पिक बाटो छन छैनन जस्सा तथ्यहरू बलिया परिस्थिती जन्य प्रमाण हुन सक्दछन । त्यस्तै भुण्डीनको लागि पासो बाँध्न तथा अडकाउने ठाउँ सोही व्यक्तिको पहुँच भित्र हुनै पर्ने तथ्य आफैँले भुण्डेको अवस्थामा मात्र विद्यमान हुन्छ । लासको अवस्थाको बारेमा हाम्रो समाजमा धेरै मिथ्या तथा गलत अवैज्ञानिक तर्क तथा धारणहरू पाईन्छन् । माथी भनिए जस्तै घाँटीमा एउटा भटका तुरुन्त अचेतन हुनलाई पर्याप्त हुने भएकोले लासको खुट्टाले जमिन छोएको मात्र नभएर पुरै जिउ नै लत्रेकोसम्म हुन सक्दछ । लास कतै भित्ता वा पर्खालमा अडेस लागेको पनि हुन सक्दछ । हात खुल्ला वा मुट्टी परेको जे पनि हुन

सक्दछ । मृत शरीरको मेडिकल जाँच गर्दा भुण्डीएका लासहरूमा प्रायसः देखिने घाँटीको डाम अर्थात Ligature mark नै हो । उक्त डाम धेरैजसो अवस्थामा घाँटीको माथिल्लो भागमा अगाडीबाट पडाछी तिर गएको हुन्छ । जसलाई नागवेली परी माथि गएको भनिन्छ । छोटो पासो प्रयोग भएको अवस्था र खुट्टाले जमिनमा टेकेको अवस्थामा यदी गाँठोले घाँटीको छाला च्यापेको छ भने भ्रष्ट हेर्दा वारवार पनि देख्न सकिन्छ । समयको अन्तरालसँगै उक्त डामको रङ्ग खैरो, गाडा खैरो वा कालो पनि देख्न सकिन्छ । त्यसलाई डाम नभएको भागसँग छामेर तुलना गरी हेर्दा केही कडापन भएको अर्को प्रमुख विशेषता हो । यदी अगाडी साईड तर्फ चिउँडो मुनी गाँठो परेमा पछाडी र दुवै साईडमा वारवार डाम पनि कतिपय भुण्डीएका अवस्थामा देखिने गर्दछन् । पुरा वारवार भए पनि वा आंशिक रूपमा भए पनि एउटा प्रमुख विशेषताको रूपमा तलबाट माथितिर गएकै डाम भुण्डीएको अवस्थामा हुनसक्ने डाम हो । यसको कारण जिउ तल तिर तन्कदा शरीर भन्दा माथि कतै बाँधिएको पासो घाँटीमा समेत लपेटिएको हुँदा उक्त लपेटिएको भाग माथी मात्र सर्न सक्नु हो । पासोको डाम कति गाढा हुने भन्ने कुरा मुख्यतया कस्तो प्रकृतीको पासो प्रयोग भएको हो र कति लामो समयसम्म सो अवस्थामा लास रहेको छ भन्ने दुई मुख्य कुराले निर्धारण गर्दछन । खप्पो खिरीलो डोरी प्रयोग भएमा एकै छिन पछि निकालिएमा पनि सो डोरीको छापको रूपमा स्पष्ट डाम देखा पर्दछ भने मोटो र नरम पटुका, साही जस्तो पासो प्रयोग भएमा र चाँडै नैत्यसलाई हटाई लास निकालिएमा कुनै डाम पनि नदेखिन सक्दछ ।

उक्त डाम बाहेक शरीरका अन्य भागमा खास गरी हात खुट्टाहरूमा केही छाला खोस्रिएका वा नील परेका जस्ता चोटहरू हुन सक्दछन् । यसको कारण भुण्डीने प्रकृयाको क्रममा र त्यसबाट मानिस मर्ने क्रममा छेउछाउमा शरीरसँग सम्पर्कमा आउन सक्ने कुनै चिज वस्तु भएमा एकै छिनको छटपटीको कारणबाट र माथी बाट तल जिउ छाड्दा हुन सक्ने सम्पर्कले त्यस्ता चोट पर्नु हो । पासो तन्कदै जाने क्रममा चुडीएर शरीर भुईमा खसेमा सोही अनुसारका बढी गम्भीर प्रकृतीका चोटपटक समेत पासोले बनाएका बाहेकका चोटका रूपमा शरीरमा भेटिन सक्दछन् ।

भुण्डीएर मरेको लासको भित्री जाँचका क्रममा घाँटीको भित्री नरम तन्तु तथा हड्डीहरूमा त्यस्ता कुनै रक्तश्राव वा चोटहरू पाईदैनन । घाँटीको भागको मेरूदण्डको हड्डी तथा तीनका जोर्नी भाँचीएको वा खुरकेको भनी कतिपय लासजाँच प्रतिवेदनमा दिएको पाईन्छ । तर, विश्वव्यापी तथ्याङ्कलाई हेर्ने हो भनी खाली मृत्युदण्डको रूपमा भुण्ड्याईएका लासमा मात्र यस्तो लक्षण पाईन्छ । यसको कारण घाँटीमा पर्ने चापको मात्रा पुरा शरीरको चाप भन्दा धेरै बढी हुने गरी विशेष अवस्था बनाएर भुण्डाउने प्रकृया पुरा गरीन्छ । यस पंतीकारले गरेका हज्जारौं भुण्डीएका लासमा एउटा पनि यस्तो लक्षण हालसम्म पाइएको छैन । जिब्रोको फेदमा रहेको हाइओइड भन्ने हड्डीको Fracture भने अली बुढेसकाल लागेको र पुर्ण रूपमा भुण्डेका केही लासहरूमा घाँटीको मासु तन्कने क्रममा हुने गरेको पाईन्छ । यी देखिबाहेक भुण्डीएका लासहरूमा त्यस्ता बाहिरी तथा शरिर भित्र अन्य कुनै खास लक्षण पाईदैनन् ।

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