



PROSPECTIVE STUDY OF MECHANICAL ASPHYXIAL DEATHS IN PATNA MEDICAL COLLEGE

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ABSTRACT

– A prospective study was conducted in the dept of forensic medicine and toxicology (PMCH) ; during July 17 to Dec 18 to know the total incidence of mechanical asphyxial deaths with its type , age ,& gender wise distribution and its relationship with the socioeconomic condition of the victim are presented and discussed .In total 688 cases were studied during this period out of which the mechanical asphyxial deaths were reported in 39 cases.

**KEYWORDS :** Mechanical Asphyxia ; Hanging ; Strangulation ; Drowning.

INTRODUCTION –

In forensic field ,mechanical asphyxia is restricted to mechanical interference which either a)impedes access of air to lung b) reduces the blood supply to head and neck c) causes sudden cardiac arrest due to stimulation of carotid sinus ( vagal reflex mechanism ). The cardinal signs of asphyxia are cyanosis , congestion and petechial haemorrhage. The classical features of asphyxia are found when the air passage is restricted by pressure applied to neck or the chest or when there has been struggle to breathe. Nervous tissue (brain) are affected first by deficiency of oxygen causing rapid unconsciousness . In all forms of asphyxia , heart may continue to beat for several minutes after stoppage of respiration . Serious deprivation of oxygen for 5 – 10 min can result in permanent damage to CNS and CVS resulting death . Violent asphyxia death are common and may be classified as a) hanging b) ligature strangulation c) throttling c) suffocation d) drowning . Among these hanging and drowning are seen in suicidal cases while strangulation including throttling is usually homicidal . In addition to these the accidental compression to chest called **traumatic asphyxia** is also one of the cause of violent asphyxia deaths. In **hanging** ,death is brought about by the constriction of neck due to suspension . The constricting force is generally the weight of the body and sometimes only the weight of the head . The amount of pressure necessary to compress the jugular vein is 2 kg,carotid artery is 5kg ,compressing the trachea requires 15kg and vertebral artery requires 20kg . **Strangulation** is defined as the form of violent asphyxia caused by constriction of neck by some means other than body weight . **Drowning** is defined as asphyxial death which occurs when atmospheric air is prevented from entering lungs due to submersion of body in water .

deaths that were autopsied in dept of FMT ; PMCH over a period of 1 and ½ yrs( i.e. from July 17 to Dec 18 ) . During this period the medicolegal cases were brought from 86 police station all across Patna district . The necessary case details were obtained from the autopsy reports (preserved 2<sup>nd</sup> copy )with the permission of the concerned autopsy surgeon, police FIR and inquest, dead body challan , and from interviews of relatives accompanying the dead bodies . Reports from hospitals where victims were treated were also taken into account to know the exact cause and nature of death.

DISCUSSION:-

The cases taken for study at PMCH , Patna during the period of 1 and ½ yrs (July 17 to Dec 18 ) were 688 , out of which 39 cases were of mechanical asphyxia deaths , the incidence rate of which was 5.67% . Out of 39 asphyxial deaths , 15 (38%) were female & 24 (62%) were male .It shows mild preponderance of male sex over female . Out of 15 female deaths , hanging was the cause in 7 , strangulation in 6 , & drowning in 2 . Similarly , out of 24 male deaths , hanging was the cause in 11 , drowning in 9 , & strangulation in 4 . So , out of total 39 asphyxial deaths 18 (46%) deaths were due to hanging , 11 (28%) deaths were due to drowning , 10 (26%) deaths were due to strangulation . No deaths were reported due to sexual asphyxia , traumatic asphyxia and suffocation . Out of 39 asphyxial deaths , 22(56%) death occurred in 21 -40-yrs of age , followed by 12(31%) deaths in 00 – 20 yrs of age grp . Family disputes were motive in 13 deaths , depression in16 , and financial problem in 10 deaths . In present study 23(59%) cases were married & 16(41%) cases were unmarried . 33(84%) cases belong to lower socio-economic status while rest 6(16%) cases were that of higher socioeconomic status . 21(53%) victims were illiterates while 18(47%) were literates . 20(51%) deaths were reported from rural areas and the remaining 19(49%) were that belonging to urban one.

MATERIAL AND METHODS:-

The material of study comprises of all the cases of unnatural

Table:- Age & Sex Wise Distribution Of Different Types Of Mechanical Asphyxial Deaths .

s. no.	types of mechanical asphyxial deaths	0. - 20. yrs.			21. - 40. yrs			41. - 60 yrs.			> 60. yrs.			Grand total.		
		M	F	Total	M	F	total	M	F	total	M	F	total	M	F	total
1	<b>hanging</b>	2	1	3	8	6	14	1	0	1	0	0	0	11	7	18
2	<b>drowning.</b>	5	1	6	2	0	2	2	1	3	0	0	0	9	2	11
3	<b>strangulation.</b>	1	2	3	3	3	6	0	0	0	0	1	1	4	6	10
4	<b>others(sexual asphyxia,suffocation)</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CONCLUSION:-

Male cases predominates drowning and was always accidental in nature . Hanging was the commonest method of suicide in both male and female cases . Strangulation was almost always homicidal in nature and was predominate in female cases . Age wise distribution showed hanging common among middle age grp (21 -40 yrs ) while drowning was

predominant in young age grp (00 -20 yrs ) . Regarding area wise distribution , drowning was found to be more prevelant in people of rural area while hanging was seen more in urban deaths . Furthermore , the majority of asphyxial victims were of low socio-economic class and illiterates . The number of suicidal hanging are increasing day by day due to depression followed by family disputes .

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