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Retrospective analysis of 258 consecutive forensic exhumations with emphasis on causative agents/cause of death.

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Abstract:

Introduction: Exhumation is the removal of the corpse from its grave for determination of the cause of death. All the exhumation cases are authorized by the Judicial Magistrate are appropriate authority under section 176 CrPC (code of criminal procedure). There are other religious, social and cultural reasons the exhumation is carried out in different parts of world.

Objective: To analyse and evaluate the findings from exhumed bodies and the factors which play role in the uncertainty in the determination of the cause of death.

Methodology: This retrospective observational study performed for 258 consecutive forensic exhumations performed at Department of Forensic Medicine & Toxicology, PUMHSW, Nawabshah in district from 2017 to 2019. These corpses were evaluated retrospectively on the basis of the autopsy report and police papers. The demographic information, causative factors and relevant data retrieve and analyzed using SPSS ver.19. The purpose of the present study was to analyze and evaluate the findings, their causative agents observed on the exhumed bodies and the factors which play role in the uncertainty in the determination of the cause of death.

Results: There were 200 males and 58 were females. The causative agents included were blunt/sharp force and firearms. 242 cases were from urban and 16 were from rural area. The maximum cases of exhumation were 228 having >42 years and minimum were 30 <50 years. Due to advanced stage of decomposition, the marks of violence on soft tissues were not observed, and the internal organs were also in a state of decomposition. Histopathology and toxicology reveal negative results.

Conclusion: Delayed exhumation due to lengthy legal procedure, results in decomposition and disputed cause of death. The success rate in challenged cases depends mostly on the duration of exhumation, condition of the soil, regardless the cause, frequency of such claims is on rise.

Keywords: Exhumation, grave, dead bodies, Autopsy, facial identification, false claims on cause of death.

Introduction:

Exhumation is the removal of the corpse from its grave for determination of the cause of death.¹ All the exhumation cases are authorized by the Judicial Magistrate, an appropriate authority under section 176 CrPC (code of criminal procedure).² There are other religious, social and cultural

reasons the exhumation is carried out in different parts of world.³ Exhumation is done with certain objectives.⁴ Exhumations are required for identification, identity of unidentified dead bodies, cause of death. When relatives are suspicious of foul play during autopsy, and unsatisfied with the report; to remove this ambiguity autopsy is re-

peated (second autopsy).⁵ Exhumations are mostly carried, when the relatives/next to kin has doubts with the first postmortem examination, the blood relation on their application to the legal authorities, and after fulfilling the legal formalities, the Director General Health on the orders of the court will constitute special medical board, where the experts are nominated by chairperson of the institute. It is immoral and illegal to disturb human remains without lawful authority.⁶

Exhumation protocol has following steps.⁷

General precautions, Identification of the grave, Identification of coffin, autopsy, collection of samples with preservation, and for chemical/ Histo-pathological examination.

As there is no time limit of exhumation in Pakistan,⁸ therefore the success of exhumations depends on the condition of the corpse at the time of exhumation. If the time limit is more the dead body starts decomposition resulting in no findings; masking ante mortem changes difficult to ascertain the cause of death from soft tissues.⁹ The opinion is then based only on examining hard tissues.¹⁰ Increasing awareness of public about tort, the incidence of exhumation of deceased bodies are on rise. Exhumation should be done in day light. The concerned medico-legal should know the pitfalls, limitations, lacunae encountered subjective as well as objective in nature. Limitations of exhumation includes time laps between burial and disinterment, soft tissue findings are lost due to advanced decomposition, resulting in deficient histo-pathological interpretation; vegetable, volatile, synthetic poisons may be lost with time interval. Grave was not properly identified advertently or otherwise, soil condition may change the findings on exhumation.¹¹ Existing text books of forensic books is not inadequate but lacks in scientific references. It is necessary to develop scientific references criteria for future generation.

Methodology:

258 exhumations performed during 3 years after authorization from medical board at district Nawabshah. After completing all the legal procedure, the special medical board was constituted by Director General Health, on the order of the honorable court. As per routine, members of the special medical board usually assemble in the office of police surgeon, to reach the concerned police station to proceed to the graveyard. The grave was identified by the relatives, the law order situation is to be maintained if any by the Police. Routine autopsy was done, findings were taken on the performa after due approval of the competent authority and all measures were taken to ensure anonymity of the data subjects. The data obtained was analyzed using Excel 2016 and SSP ver.19.0 for results. Cause of death was determined either by external and internal examination or by histological/ chemical analysis of viscera was included in this study. Partially /advanced and skeletonized bodies,

with toxicological reports failed to reveal any abnormal findings.

Results:

During the study period, total 258 exhumations (autopsies) were conducted during our study period, which includes different areas of Nawabshah. There were 200(78%) males and 58(22%) female, 242 cases (94%) belong to urban area and 16 cases (6%) in rural area. The maximum cases of exhumation were 228 (88%) having age group <42 and minimum cases were 30 (12%) of age group >50 year. In this study the causative agents were blunt force trauma 218 (86%), firearms 25(9%) and sharp force trauma in15 (5%) cases. It was observed that 60 cases (23%) of the dead bodies were without decomposition, 140 (54%) dead bodies were partially decomposed, and 58 (22%) were in stage of advanced decomposition. The cause of death was difficult to ascertain due to advanced stage of decomposition in 110(43%). Due to advanced stage of decomposition, the marks of violence at soft tissues were lost in 58 cases, resulting difficult to ascertain the cause of death.

Table No 1: Gender distribution (n=258)

Gender	N	Percentage
Male	200	78%
Female	58	22%

Table No 2: Distribution of police station

Police Station	N	Percentage
Nawabshah	242	93.41%
Bandhi	2	0.78%
Buchari	1	0.39%
Gupchani	11	4.26%
Khadar	1	0.39%
Mari	1	0.39%
Total	258	100%

Table No 3: Weapon used

Kind of weapon	No	Percentage
Firearm	25	09%
Hard Blunt trauma	218	86%
Sharp force trauma	15	05%

Table No 4: Condition of exhumation bodies

Exhumation cases	N	Percentage
without decomposition	60	23.25%
Partially decomposition	140	54.26%
Advance decomposition	58	22.48%
Cause of death not determined	110	43%

Discussion:

Exhumation refers to the recovery of a previously buried body for postmortem examination. In our study majority of cases were in the stage of advanced decomposition, where cause of death remains undetermined due to the loss of soft tissues, only hard tissues can help to determine the cause of death. It often occurs several days to months after burial.¹² The delay in forensic exhumation and autopsy may lead to loss of evidence in soft tissue injuries. The delay in exhumations in Pakistan is mainly due to cultural beliefs that the procedure is a humiliation to the decedent and the lengthy legal procedure.¹³ Forensic autopsies are conducted without the luxury of autopsy suite, the members of the board after travelling long distances to reach the gravesite. The protocol of exhumation is that arrangements within the graveyard for exhumation process is the job the police, regarding identification of the grave, through relatives and law order situation. The nominated members of the medical board, duty magistrate and area police reach the place of burial, after completing all the legal formalities, the board members had to start the exhumation process.¹⁴ In present study the male gender is on slight preponderance over females subjected to exhumation¹⁵ Maximum cases 93.4% were observed in jurisdiction of police station Nawabshah, and minimum cases 0.39% were observed in the limits of Police station Buchari and Khaddar, urban/ rural cases observed with a ratio 15.12 %. The maximum age group was >42 years (88%) and maximum age group was <50 years (12%) with a ratio of 7.6%. The kind of weapon used was blunt force trauma 218(83%), firearms 25 (09%) and sharp force trauma 15 (5%). We had observed advanced decomposed bodies in 58 cases (22.04%), partially decomposed were 140 (54.26%) and normal bodies without decomposition were 60 (23.22%).

Frequency of foul play in homicidal death is similar throughout the country. If a foul play is suspected unnecessary delay in legal formalities should be avoided in the conduction of exhumation. If the exhumation is carried out soon after burial, maximum result on actual cause of death will be achieved. The foul play is more in rural area as compared to urban areas.

Conclusion:

Delayed exhumation due to lengthy legal procedures involved in carrying out this process leading to decomposition of the bodies resulting in deviation to determine actual cause of death. After careful consideration of the results, the success rate in challenge cases depends mostly on the duration of exhumation, condition of the soil. Regardless of the cause, the frequency of such claims is on the rise, further burdening this already resource constrained setting. Making matters worse, false claims of foul play during autopsy are responsible for delaying the administration of justice to the genuinely aggrieved.

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