

ORIGINAL ARTICLE

EXHUMATION: A GATEWAY TO THE HIDDEN JUSTICE, FORENSIC AND PHYSIOLOGICAL TALE TO THE TRUTH

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Background: Exhumation is important in medico-legal investigations and is under debate since long for its usefulness. Critics also try to relate these with the religion and label it as destroying the human dead body as this is a belief that we don't achieve desired results by exhumation. This study was carried out to assess the usefulness of exhumation and its outcome in our set-up and circumstances. **Methods:** This retrospective study was conducted in Ayub Teaching Hospital and supervised cases of Benazir Bhutto Shaheed Teaching Hospital, Abbottabad. Total 27 cases were studied in a 2 year time. Medico-legal aspects were studied keeping in view the physiological process in the body and anatomical destruction after death. **Results:** We were able to detect cause of death in 53% cases (23% burning, 19% firearm, 4% drowning, and 7% cut-throat cases); 33% in 0–20 years, 45% in age group 20–40 years, 8% in 40–60 years, and 14% in >60 years. Major reason for doing exhumation was to find out the cause of death (in 47% cases), followed by identity and not doing initial post mortem in 19% cases, and re-autopsy in 15% of cases. **Conclusion:** Exhumation should be ordered and conducted as it helps the investigators in determining the reasons behind the death and solve the mystery in determining the cause of death after doing this procedure and aid in administration of justice.

Keywords: Exhumation, Section 176 CrPc, Re-post mortem, Forensic, Physiology, Anatomy

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INTRODUCTION

Exhumation is the process of disinterment of dead body once it is buried.¹ Exhumation is performed to find out the cause of death, to establish personal identity, shifting the body from one place to other, in cases of suspicious circumstances, or cases when autopsy is challenged and it is conducted as re-autopsy/²nd autopsy and is carried out under the rules of the land throughout the world.²

Changes that affect the body after death are a result of complex physiochemical and environmental processes. The post mortem changes can be used to determine the time since death (TSD) or post mortem interval (PMI). PMI is essential aspect of medico-legal investigations as it helps in determining the facts when a crime had been committed. These changes are affected by the factors within the cadaver and outside it. These factors affect the onset and either increases the rate of post mortem changes or retard it. Factors that accelerate the rate of post mortem changes include hot and humid climate, presence of body fat, open injuries on the body, sepsis or infection, and location of the cadaver in open.³ Different countries have different rules for the time period of exhumation with limits of performing autopsies. In Pakistan and India it is executed under section 176 CrPc^{4,5} reproduced below:

"1) Inquiry by Magistrate into cause of death.

2) Power to disinter corpses: 'Whenever such Magistrate considers it expedient to make an examination of the dead body of any person who has been already interred, in order to

discover the cause of his death, the Magistrate may cause the body to be disinterred and examined.'

In Pakistan there is no time limit for the exhumation. There has been constant debate about the timing of the exhumation in Pakistan reasoning that there is no benefit of doing exhumation after some time limit. It is also argued by giving the example of limitation act that if there is no time limit the time period should be fixed for three years. In other concerned cases it has been argued that there is no benefit of doing this exercise after so much time elapsed. But the courts and the legislature are not accepting this as in majority of cases and as per Pakistani law there is no time limit for exhumation.

For exhumation logistics and necessary equipment and material especially for taking relevant samples for toxicological purposes and other investigations are required.⁶ It is a team work starting from the judicial involvement regarding the decision taking for conducting exhumation where concerned magistrate has the sole responsibility for identifying and permitting the exhumation of the grave. Then comes the police with responsibility of security and cordoning-off the grave. The municipal officials are involved for opening the grave and transferring the dead body. Most importantly are doctors, morticians, paramedics, technicians and the other concerned staff. Moreover all necessary equipment and the sampling items should be accompanied keeping in mind radiological findings, help from dentistry, anatomy input wherever needed.⁷⁻⁹

Permission of exhumation is a debatable topic whether we should adopt this procedure or not. As per existing rules mere suspicion of the foul play is enough to open the grave and initiating the order of exhumation.

Exhumation is the comprehensive process to know cause of death, time since death, individuality of person and other reasons varying from country to country.¹⁰ This study was carried out to assess the usefulness of exhumation and its outcome in our set-up and circumstances.

MATERIAL AND METHODS

This study was conducted from Aug 2021 to Aug 2023 and a total of 27 cases were studied in Ayub Teaching Hospital and Benazir Bhutto Shaheed Hospital, Abbottabad under supervision by Standing Medical Board of Ayub Medical College. Permission was taken from the hospital and the concerned authorities regarding ethical approval of the study. Data was collected on a performa specially designed considering initial inquest/investigations by police, autopsy/exhumation document, demographic data, motive/purpose behind the exhumation, conflict with police report, conclusion of exhumation, court proceedings and other significant findings.

Data was analysed on Microsoft Excel and tabulated as frequency and percentage.

RESULTS

All bodies that were exhumed were in advanced state of putrefaction and physiological process of death were in process with 5 bodies in skeletonized state and 6 bodies at varying degree of putrefaction. In majority of the cases (22 cases out of 27 cases), time elapsed in exhumation was between 1 to 5 months, while the remaining 5 cases were disinterred after 6 months.

It was noted that wherever the bodies were exposed to water the process of putrefaction was in advanced stage. Other significant findings are tabulated below. Majority (14 out of 27) of cases showed the manner of death as homicidal. The male to female ratio was 1:0.8.

Nine victims (33%) bodies were aged 0–20 years, followed by 12 (45%) in age group 20–40 years, 2 (8%) were in age group 40–60 years, 4 (14%) cases were ≥60 years. (Table-1).

In 19% of the cases reason for exhumation was that initial post-mortem was not done! Fifteen percent cases were of re-autopsy, 19% exhumations were done for determination of identity, and 13% were done to explore the cause of death. (Table-2).

In cases where positive findings could be collected, major cause of death was burns followed by the firearm injuries, cut throat and drowning. In 13 (47%) cases the cause of death could not be ascertained due to various reasons. (Table-3).

Table-1: Age stratification of the victims

Age in years	Cases	Percentage
0–20	9	33
20–40	12	45
40–60	2	8
>60	4	14

Table-2: Purpose/reasons for exhumation

Reason	Cases	Percentage
Initial Post-mortem not done	5	19
Re autopsy	4	15
Identity of the victim	5	19
To know cause of death	13	47

Table-3: Ascertained cause of death

Determined cause of death	Cases	Percentage
Burns	6	23
Fire Arm Injury	5	19
Cut Throat	2	7
Drowning	1	4
Un-identified	13	47

DISCUSSION

The process of exhumation, which involves the legal disinterment of a body, is generally avoided unless necessary, and it is usually carried out under specific legal frameworks, such as Section 176 of the Code of Criminal Procedure. This section allows for exhumation when there is a requirement to investigate suspicious deaths, especially when foul play is suspected or when the initial post-mortem is deemed inconclusive or unsatisfactory.

In many cases, a thorough and well-conducted initial post-mortem can prevent the need for exhumation. However, if new evidence or suspicions of foul play arise after the burial, or if the first autopsy results are questioned, exhumation may become necessary to re-examine the body for additional evidence. The decision to exhume is typically guided by legal authorities and is based on the specific circumstances of the case, taking into account both the medical and legal necessity.

Our study analysed 27 cases of exhumation, most of the victims fell in the age group 20–40 years. This aligns with findings by Maqsood *et al*¹, Mughal *MI et al*², and Hamayun *et al*¹⁰ who observed average ages of 32, 15, and 21 years, respectively.

Bardale³ identified the cause of death in 16 cases (66.6%), which is comparable to Grellner *et al*⁴, where the cause of death was confirmed in 78% cases. This is also consistent with Humayun's study¹⁰ which showed 42.83% positive determination and 57.14% being inconclusive. Verhoff *et al*⁵, provided recommendations for compensation in medical insurance cases with a success rate of 99.2%. The cause of death determination is the most important step in exhumation and for the investigators as all investigations and trial is limited to this aspect where, for one reason or another, initial investigations failed to do that with the suspicion of foul play. In majority of cases initially there is no suspicion of homicide and

body is buried without autopsy and later on circumstances give suspicion and for confirmation of suspicion of foul play this procedure is performed.

In majority of our cases the time elapsed was between 1 and 5 months, similar to findings of Ammani *J et al*⁶ where 70% of exhumations were carried out in 1 to 6 months. Maqsood *et al*¹ concluded that time interval between burial and exhumation was 1 to 6 months while results of Mughal² showed this time period to be 6 months. Climatic changes, soil condition, body temperature, and cause of death influence the body in the grave. We found that skeletonized bodies in the majority of the cases showed advanced stage of putrefaction. Hamayun *et al*⁷ also mentioned the importance of various factors on the condition of the body found in the grave. It is worth mentioning that the time elapsed is one of the biggest limitation in conducting the autopsy but fractures, firearm marks on the bones may even be appreciated on the body after putrefaction of soft tissues.

Deaths were homicidal in nature where cause of death was determined in 53% cases. It is similar to findings of Bardale *et al*³, and Suresh *et al*⁸. It is especially important that many cases of foul play are homicidal in nature and it is still possible to get the results by exhumation and conclude them. Albano *et al*⁹ and Willeman *et al*¹⁰ also studied the homicidal pattern of death in about 64% of the cases and argued in favour of doing the exhumation whenever needed. Ueland *et al*¹¹ reported multiple stabbing, and they differentiated homicidal wound from suicidal wound and solved the difficult cases by exhumation. Rani M *et al*¹² identified a victim of homicide on exhumation and identification of the personal belongings recovered with/on the body after two years of missing. This shows importance of exhumation in establishing the identity of the victim.

On many occasions even the body is initially gone through the process of autopsy and failed to label it homicidal mainly due to casual approach of examiner, limited resources of investigations, lack of medico-legal knowledge though there is positive cause of death due to homicide. In these cases exhumation is very important that completes investigation and solves mystery of death in unusual circumstances.

CONCLUSION

Despite the limitations of the exhumation process, it can still yield crucial results and help solve important mysteries regarding the cause of death that might otherwise remain unresolved. Performing an initial post mortem can often eliminate the need for exhumation. However, exhumation remains vital for ensuring justice and uncovering the truth.

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