

CASE REPORT

FORENSIC EXHUMATION OF A WARTIME MASS GRAVE AT KOKKUTHUDUVAI, MULLAITIVU, SRI LANKA: A FORENSIC CASE REPORT AND LESSONS LEARNT

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ABSTRACT

Introduction: The exhumation of human remains from wartime mass graves presents logistical, emotional, and technical challenges, especially in a post-conflict area. This forensic field case report highlights the experience of exhuming a mass grave discovered in Kokkuthuduvai, Mullaitivu, Sri Lanka, following the country's civil war from 1983 to 2009.

Case Presentation: The excavation uncovered the skeletal remains of 52 individuals, suspected to be associated with Liberation Tigers of Tamil Eelam (LTTE) forces based on contextual, artefactual and clothing evidence. Descriptive anthropological analyses revealed a predominance of females, with ages ranging from approximately 12 to 53 years, and evidence of explosive and gunshot injuries. Major challenges included maintaining transparency and trust among a local population affected by the conflict and often distrustful of authorities. Strategies such as regular media briefings, independent observation, and culturally appropriate funeral rites were implemented to address these concerns, though they sometimes led to misinterpretation of scientific findings. Another challenge was managing the emotional impact on the survivors of the war, stemming from not getting answers about the fate of their kin. Financial constraints further complicated the project, as delays in the approval of funds hindered progress. Audio magnetotelluric techniques were utilized to delineate the grave's extent, minimizing disruption to local infrastructure. Definitive individual identification was not achieved due to the absence of traceable

records and reference DNA for comparisons. Examination of skeletal remains presented challenges relating to the interpretation of perimortem, antemortem and postmortem trauma, with imaging studies proving valuable for differentiating these changes.

Conclusion: This experience from Sri Lanka highlights the importance of community engagement, emotional sensitivity, flexible funding, and advanced forensic techniques in mass grave investigations.

Keywords: Exhumation; forensic anthropology; mass grave; skeletal remains; Sri Lanka

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ARTICLE HISTORY

Received: 08.02.2026

Received in revised form: 31.05.2026

Accepted: 20.06.2026

Available online: 30.06.2026



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INTRODUCTION

Sri Lanka is an island nation with a land area of 65,610 km² located in the Indian Ocean. The Sri Lankan Civil War, which lasted from July 1983 to May 2009, was a conflict between the separatist Liberation Tigers of Tamil Eelam (LTTE) and the armed forces of the government of Sri Lanka, fought mainly in the northern and eastern parts of the island¹. The death toll of the conflict ranges from 70,000 to 100,000, with thousands reported missing²⁻⁴. Mullaitivu District in the Northern Province of Sri Lanka, predominantly inhabited by Tamils, was one of the epicentres of the conflict, witnessing several major battles and skirmishes and remained under LTTE control for about half the duration of the war⁵. The prolonged conflict led to significant loss of life, enforced disappearances, displacement, and long-term social and cultural disruption, particularly affecting the Tamil population of the region.

In the Tamil society of Sri Lanka, where Hinduism is the predominantly practised religion, dead bodies are cremated. During the Civil War, especially in LTTE-controlled areas, the practice of burials emerged, and the cemeteries were perceived as holy places⁶. The absence of proper burial and knowledge of the fate of missing relatives has left many families in prolonged states of grief and uncertainty.

Before the discovery of the mass grave discussed in this article, at least 32 graves had been identified. But only seven have been excavated, which include graves from Northern and Eastern provinces, namely Chemmani, Jaffna, Kalavanchikudy, and Mannar. Graves discovered in Matale and Sooriyakanda have been connected with deaths during the insurrection led by the leftist political party Janatha Vimukthi Peramuna (People's Liberation Front), while several graves found on the southern coast of Sri Lanka had been created to dispose of the victims of the 2004 tsunami disaster⁷. Investigations into the mass graves are uniquely challenging due to limited documentation of wartime deaths, lack of antemortem data or deoxyribonucleic acid (DNA) reference samples, and infrastructural constraints in the previously conflict-affected areas. The discovery of wartime mass graves in

this region is not merely a forensic or legal exercise, but one deeply entwined with the cultural practices surrounding death and mourning.

Previous international experiences had shown that mass grave investigations require multidisciplinary collaboration involving forensic pathology, forensic anthropology, archaeology, radiology, and humanitarian engagement, with strict protocols, particularly in post-conflict settings. Issues such as clandestine burial, reburial, commingling of remains, and post-depositional disturbances complicate stratigraphic interpretation and recovery of remains^{8,9}. Exhumations are often prolonged, resource-intensive, and require careful excavation over extended periods to preserve fragile remains and artefacts¹⁰. In addition, investigators face many ethical and legal concerns, such as the need to balance humanitarian and legal requirements, while ensuring adherence to human rights standards and maintaining the integrity of the investigation¹¹.

This manuscript is presented as a forensic field case report with reflective operational lessons from a wartime mass grave investigation in post-conflict Sri Lanka. The primary focus is on the operational, ethical, anthropological, humanitarian, and procedural challenges encountered during the exhumation and analysis process.

CASE PRESENTATION

On 29th June 2023, the presence of human remains was first reported in Kokkuthuduvai (9.051912, 80.915362), located approximately 26 km south-east of Mullaitivu town, adjacent to the B-297 Mullaitivu-Kokkilai road (Figure 1), during an excavation of a trench to lay a water supply line by the workers of the National Water Supply and Drainage Board (Figure 2)¹². On 6th July 2023, the site was preliminarily explored by the Forensic Pathologist of the District General Hospital, Mullaitivu, under the inquest order issued by the Magistrate of Mullaitivu. Since there are no separate laws for the disinterment of human remains in Sri Lanka, the magisterial order was issued as per the provisions of section 373 of the Code of

Criminal Procedure Act No. 15 of 1979¹³. Since it appeared to be a part of a larger grave site with remains belonging to multiple individuals, further exploration was immediately halted to facilitate a more organized excavation process.



Figure 1: Location of the exhumation site (9.051912, 80.915362) marked by the red pointer in the map of Sri Lanka (a) and the Mullaitivu area (b) and an outline of the excavation (c).



Figure 2: The site of initial excavation adjacent to B-297 road (arrow), which led to the discovery of human remains and clothing (circled).

A team comprising of the Forensic Pathologist of the District General Hospital, Mullaitivu; a Senior Professor in Archaeology at the Postgraduate Institute of Archaeology, University of Kelaniya; a specialist in Forensic Pathology with special interest in Forensic Anthropology from Teaching Hospital, Jaffna; Scene of Crime Officers (SOCO) from local police; lawyers and representatives from the Office on Missing Persons (OMP) was formed

under the magisterial supervision to further investigate the site. A discussion was held at the court premises between the above team and the local political representatives, and it was planned to continue the excavation project systematically with the participation of

the experts. The objective of the exhumation project was humanitarian and truth-seeking, to identify the victims and circumstances related to their deaths. The funding for the project was to be provided by the Ministry of Justice of Sri Lanka, through a proposal submitted to the Divisional Secretariat, Mullaitivu, which deviated from the usual process of obtaining funds from the Ministry of Justice of Sri Lanka via the local courts.

Logistical arrangements were made before the excavation through a proposal submitted by the forensic experts. These arrangements included tented shading over the grave site, temporary shelters for security personnel, temporary toilet facilities, drinking water and electricity supply, and closed-circuit television (CCTV) coverage.

Under the magisterial order, the site was secured by the local police, erecting a permanent roof structure, since the site was open, hot

and dry, with continuous CCTV coverage. Aerial drones from the Special Task Force of Sri Lanka Police were used to capture aerial photographs of the site, and audio magnetotelluric (ADMT) techniques were utilized to delineate the burial site's extent.

A systematic excavation of the identified burial feature was conducted in 3 phases, 6th to 15th September 2023, 27th to 29th November 2023 and 4th to 16th July 2024, with the interruptions

caused by the lack of a flexible funding scheme. The personnel who participated in the excavation, in addition to the aforementioned team, included the Medical Officers – Medico-Legal of the District General Hospital, Mullaitivu; postgraduate trainees in Forensic Medicine; postgraduate trainees in Archaeology; and labourers, while independent observers were present. The extent of daily progress was briefed to the public and media at the end of each day's excavation. The excavation process was coordinated by the Forensic Pathologist of the District General Hospital, Mullaitivu. The archaeology team excavated the site with the support of the forensic personnel. The Police and SOCO's involvement was in the management of the scene, maintaining the chain of custody and photography. The analysis of the recovered remains was conducted by the forensic team.

A systematic excavation procedure was followed, and the burial trench was divided into grids using string lines and pegs. The soil was removed layer by layer using hand tools, and the stratigraphy was carefully documented to preserve spatial relationships between remains. Skeletal remains and artefacts were photographed in situ, labelled with context numbers, and mapped. Detailed records were kept through written notes and scaled sketches. During the process, the initial burial trench (Figure 3) of 14x3 m was extended further 3 m onto the bituminous road, which had been widened after the Civil War. In the burial trench, commingled skeletal remains belonging to 52 individuals, suspected to represent individuals associated with LTTE forces based on contextual, artefactual, and clothing evidence, were identified. It was

suggestive of a hasty mass burial, rather than an orderly individual burial or a commingling caused by pre-professional excavation. Their clothes, bones and artefacts were documented separately, dug out and packed in labelled containers under magisterial supervision for further analysis. These containers were transported to the Department of Forensic Medicine, University of Jaffna, for further examination. Throughout the process, the chain of custody was strictly maintained. Following the exhumation, the burial site was closed on 16th July 2024 and funeral rites were held according to local traditions and customs (Figure 4).



Figure 3: Layout of human remains, and clothing (arrows) scattered in the partially exhumed grave site.



Figure 4: Cultural ceremony held in July 2024 at the closing of the mass grave.

Anthropological examination was conducted at the Department of Forensic Medicine, Faculty of Medicine, University of Jaffna, according to standard forensic osteological principles described by Buikstra and Ubelaker and subsequent forensic anthropology references¹⁴. This included the estimation of the skeletal examination, age and sex estimation, trauma documentation and taphonomic observations. Clothes were examined for their type, identification markings and defects due to possible wartime trauma. Bones were examined using X-ray and computed tomography (CT) scanning, and grossly for injuries, signs of disease, and features to estimate stature and age at the time of death, and to determine the sex of the deceased. Assessment of trauma timing was based on fracture morphology and radiological correlation. Age and sex were estimated using morphological and metric analysis of bones and dental assessment by a team of experts from the Faculty of Dental Sciences, University of Peradeniya. Age was estimated using dental crown and root development¹⁵ and radiological measurement of pulp/tooth ratio of maxillary and mandibular canines¹⁶. Sexual dimorphism in permanent maxillary and mandibular canines in the Sri

Lankan population¹⁷ and anthropometric measures of the tibia¹⁸ were used as reference data for sex estimation. Stature estimation was challenging due to postmortem breakage at the ends of most long bones. Taphonomic assessment included evaluation of fragmentation, weathering, root infiltration, soil-related changes, and postmortem damage. The investigation adhered to internationally accepted forensic principles applicable to potentially unlawful deaths, including maintenance of the chain of custody, systematic documentation, multidisciplinary participation, and preservation of evidentiary integrity, as reflected in the Minnesota Protocol on the Investigation of Potentially Unlawful Death (2016)¹⁹ and relevant standards^{8, 20}. Following the completion of the anthropological analysis, the exhumed remains were retained under judicial custody.

RESULTS

The estimated age ranged from approximately 12 to 53 years. Out of the 52 cases, 15 individuals (28.8%) were assessed as younger than 20 years, while 9 individuals (17.3%) were estimated to be between 20 and 30 years of age. Three individuals (5.8%) were estimated to be older than 30 years. In 25 individuals (48.1%), age estimation remained indeterminate or overlapped multiple age categories due to wide interval estimates, minimum-age assessments, or incomplete skeletal preservation. The majority of the individuals were females (31, 59.6%), while 21 were male (40.4%). By analysis of skeletal injuries and associated defects in clothing, findings suggestive of blast-related trauma alone were identified in 41 individuals (78.8%), firearm-related trauma alone in 7 individuals (13.4%), and combined blast and firearm-related trauma in 3 individuals (5.8%). In one individual (2.0%), the possible cause of death remained undetermined. These interpretations were descriptive and did not constitute a definitive determination of the cause of death. Findings of the skeletal analysis are summarized in Table 1.

Table 1: Summary of the findings of skeletal analysis

Skeletal number	Estimated age (years)	Estimated sex	Main trauma pattern/interpretation
1	15-16	Female	Blast injury
2	24-30	Female	Blast injury
3	Over 14	Male	Gunshot injury
4	Undetermined	Male	Gunshot injury
5	22-27	Male	Undetermined
6	Over 20	Male	Blast injury
7	22-32	Female	Blast injury
8	22-34	Female	Blast injury
9	17	Female	Gunshot injury
10	16-17	Male	Blast and gunshot injury
11	14-15	Female	Blast injury
12	16-17	Female	Blast injury
13	Over 20	Female	Blast injury
14	15-17	Male	Blast injury
15	Over 17	Female	Blast injury
16	20-26	Male	Blast injury
17	17-18	Male	Blast injury

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18	Over 14	Male	Blast injury
19	21-31	Female	Blast injury
20	Over 12	Male	Blast injury
21	31-37	Female	Gunshot injury
22	43-53	Female	Gunshot injury
23	15-17	Male	Blast and gunshot injury
24	Over 13	Male	Blast injury
25	Over 17	Male	Blast injury
26	14-16	Male	Blast injury
27	Undetermined	Male	Gunshot injury
28	Undetermined	Male	Blast injury
29	20-26	Male	Gunshot injury
30	29-39	Female	Blast injury
31	16-20	Male	Blast injury
32	Over 17	Female	Blast injury
33	Over 20	Female	Blast injury
34	21-27	Female	Blast injury
35	21-31	Male	Blast injury
36	36-38	Female	Blast injury
37	Over 18	Female	Blast injury
38	Over 12	Female	Blast and gunshot injury
39	Over 17	Female	Blast injury
40	22-24	Female	Blast injury
41	18-28	Female	Blast injury
42	20-30	Female	Blast injury
43	17-18	Female	Blast injury
44	Over 20	Female	Blast injury
45	19-20	Female	Blast injury
46	14-16	Female	Blast injury
47	26-28	Female	Blast injury
48	Over 13	Female	Blast injury
49	14-16	Male	Blast injury
50	14-16	Male	Blast injury
51	24-27	Female	Blast injury
52	Over 13	Female	Blast injury

Radiological examination assisted in differentiating perimortem fractures from postmortem damage and showed metallic fragments embedded in selected remains consistent with explosive trauma. Most remains were recovered clad in clothing resembling paramilitary-style uniforms, and some of these garments bore identification numbers. In relation to some individuals, “dog tags” bearing identification markings were retrieved. Many of the individuals who were identified as females

using osteological assessments were clad in underwear, such as brassieres and panties, typically worn by females, supplementing the findings in the sex determination. Formal ballistic analysis was not possible because projectiles suitable for ballistic examination were not recovered. Further analysis could not be performed due to the fragmentation of the bones, and no positive individual identification was achieved.

DISCUSSION

A major challenge faced in this excavation project was to maintain transparency and win the trust of the local population. Distrust towards the government and its officials, including the Forensic Pathologists and the Police, especially following an ethnic conflict, was a major issue encountered in the area. The excavating team tackled the issue by allowing the mass media and independent observers to inspect the grave site during excavation and at other centres where further forensic anthropological analyses were conducted. The participation of the local non-governmental organization, the Centre for Human Rights and Development (CHRD), representing the missing local population, in the exhumation and analysis process, with the permission of the magistrate, was also helpful in maintaining the transparency of the entire process. Daily briefings were held during the entirety of the 3 phases of excavation to

maintain the transparency of the process and to clarify any issues raised by the local population and local political representatives. However, the information perceived by the local population and independent observers, who are not well-versed in scientific principles in forensic anthropology and archaeology, might have been misinterpreted, especially in the case of timing and nature of injuries, leading to misinformed opinion formation amongst them. Although it was not possible to prevent misinterpretations entirely, the forensic team made every effort to explain complex findings

as clearly as possible. The Minnesota Protocol¹⁹, which emphasizes that investigations involving potentially unlawful deaths should maintain scientific independence, transparency, proper documentation, and respect for the dignity of the deceased and their families, was followed as it was relevant in this politically and culturally sensitive post-conflict setting.

Another challenging aspect to consider was the emotional impact on the survivors of the conflict with the missing kin. Studies have shown that when the fate of a loved one is unknown, it causes significantly greater psychological distress than confirmed deaths. This effect is seen in both adults and children, with the lack of closure identified as a factor exacerbating emotional suffering^{21, 22}. Families seek closure through answers about the fate of their missing relatives, recovery and identification of remains, and proper burials, while their beliefs and expectations are respected until such closure is achieved²³. Humanitarian guidelines published by the International Committee of the Red Cross (ICRC) emphasize that families of missing persons require clear communication, psychosocial support, and culturally appropriate handling of remains throughout the exhumation and identification process²⁴. Similarly, in the Sri Lankan context, the families of the disappeared in Sri Lanka express the need for truth, accountability, and dignified remembrance. The Mullaitivu area was a major battleground during the civil war, and most of the local families had their kin involved in the war, as combatants, with many of them being killed or missing in action. Although 17 years had passed since the end of the conflict, the unresolved grief may have resurfaced among the local population during the excavation process, and some may have perceived the exhumation as disturbing the dead²⁵. The local workers, who had also lost their kin during the war, became emotionally distressed upon recognizing the female cadre clothing and suddenly claimed that the remains might belong to their daughters. This created challenges in explaining the situation to them during the process and added pressure on other team members. To remedy this emotional impact, the local government officials facilitated the performance of funeral

rites at the end of the excavation. However, the need for further analysis of the human remains, in a separate centre, hindered the opportunity to provide the deceased with a dignified burial. But there were no objections from families to the analysis of the remains.

The process of providing government funds for this project created issues with timely funding. Since the excavation was a dynamic process and new necessities emerged as it progressed, it required frequent changes to the budget. However, since the budget approval process was rigid and time-consuming, it created unnecessary delays in completing the excavation and further analyses. Therefore, it highlights the importance of a flexible funding scheme from the government and interested non-government organizations when the need for politically and culturally sensitive matters arises. It is worthwhile to mention that there was no significant political opposition to the process from the central or local government, except for the slow funding process.

During the preliminary excavation, it was noted that the grave site consisted of human remains from many bodies. A blind excavation, where the entire area is excavated without prior knowledge of the grave's extent, could also be disruptive to the remains in the grave. It could also be time-consuming, labour-intensive, and potentially disruptive to the local infrastructure, particularly the nearby B-297 road. To avoid unnecessary excavation and disturbance, ADMT were employed as a non-invasive method to delineate the burial site's boundaries. ADMT, a passive geophysical technique that measures naturally occurring electromagnetic fields to assess subsurface conductivity²⁶. This method is effective in identifying areas with distinct resistivity characteristics, such as disturbed soils commonly associated with burial sites.

In this case, ADMT identified a low-resistivity zone surrounding the burial trench, which indicated areas where the soil had been disturbed, likely due to the burial of human remains. This disturbance caused the soil to be less compact than the surrounding undisturbed soil, which exhibited a higher resistivity. The contrast between these high- and low-resistivity zones allowed the excavation team to

accurately define the extent of the burial site and avoid further disruption to the local infrastructure. The ADMT data revealed that the grave extended to the midline of the adjacent B-297 road, which allowed the team to preserve one lane of the road and minimize disruptions to local traffic. By employing ADMT, the team was able to precisely target the area for excavation, significantly reducing the amount of unnecessary digging.

Commingling of remains is a recognized challenge in conflict-related mass burials, particularly where bodies are deposited rapidly in confined grave spaces, and it requires careful stratigraphic excavation and documentation⁸. The human remains in this mass grave were commingled, especially near the roadside of the grave, due to the overlapping of the bodies. The likely reason is that the grave was dug by machinery from the road towards the lateral side, and the remains were dumped from the road into the grave. So, many bodies overlapped with each other near the roadside and appeared as commingled. But with careful excavation and handling, it was possible to separate the remains successfully, as the clothing items encasing the bodies helped to keep skeletal bones together. Since the anatomical position, skeletal articulation, and clothing were found in expected positions, this grave can be considered a primary grave site. Only a small part near the road was disturbed by water supply workers, which led to the discovery of the mass grave.

Interpretation of the burial context was based on the scene observations, grave morphology, stratigraphic relationships, skeletal findings, associated clothing and artefacts, and the historical context of armed conflict in the Mullaitivu region. The commingled nature of the remains, the apparent hasty deposition of bodies within a single trench, the presence of trauma consistent with blast and firearm injuries, and

the recovery of clothing and artefacts suggestive of a conflict-related mass burial, although a complete reconstruction of the event was not possible.

During the excavation, it was noted that some of the bodies contained identification “dog tags” with numbers and letters (Figure 5a), and during the examination of clothing, there were several clothing items with identification numbers and markings sewn onto them (Figure 5b), which were contextually consistent with clothing historically associated with LTTE cadres during the conflict period, although definitive attribution was not possible. An identification tag from a regular armed force would have included details such as name, rank and the unit of the combatant, which would have facilitated the identification of the remains²⁷. However, since the LTTE was a paramilitary organization and it was defeated in 2009¹, there were no records which could be traced back to the identification numbers and markings. More specific identification through DNA analysis was limited in this context due to the unavailability of suitable family reference samples at the time of investigation and the absence of traceable records linking the recovered identification markings to known individuals. Biological samples were preserved for possible future DNA comparison should suitable family reference samples become available. Although family reference samples were not collected during the present investigation, future identification efforts may be facilitated if relatives or relevant records are identified.



Figure 5: Markings on a “dog tag” (a) and (b) clothing recovered with the human remains.

OMP, an independent government body, played a key role in assisting the process of identifying the relatives of the victims of the

mass grave. They systematically collected data and supported forensic specialists in the identification of the deceased. OMP possessed records and testimonies related to persons reported missing, mainly in the final phase of the Sri Lankan Civil War (2006-2009), and there was a lack of data concerning the incidents in the 1990s, which corresponded to this mass grave. As a result, the chances of identifying the deceased were limited in this scenario, but OMP's active involvement will coordinate future identification attempts.

Interviews with the locals to determine the identity of the victims were not conducted since it was not within the scope of this investigation. However, such an approach would be helpful for the probable identification of the deceased when DNA analysis is not feasible.

Postmortem taphonomic processes, including soil pressure, environmental weathering, plant root activity, and fragmentation, can significantly alter skeletal remains and complicate the interpretation of perimortem trauma in mass grave investigations²⁸.

Differentiating perimortem trauma from postmortem damage requires careful observation of bone morphology, taphonomic changes, radiological findings, and scene information²⁰. In this scenario, distinguishing antemortem or perimortem injuries from postmortem alterations, such as erosions, fractures, animal gnawing, and plant root infiltration, posed a significant challenge (Figure 6). The condition and completeness of the remains further complicated efforts to identify definitive trauma indicative of the cause of death. In some cases, high-energy explosive injuries may have resulted in extensive fragmentation or destruction of bones, further limiting conclusive assessments. Due to the limited availability of imaging resources, it was not feasible to radiograph all

bone fragments. Instead, selected fragments with ambiguous features were examined using X-ray and CT imaging. The radiographic images provided a better perspective on the timing of the changes in the bone fragments at the time of death. Furthermore, apart from the perimortem injuries, radiographic studies identified evidence of fracture healing and bone deformities. While imaging studies were useful in assessing skeletal trauma, the interpretation of complex injuries still relied heavily on the expertise of forensic anthropologists, highlighting the need for specialized training in forensic anthropology, especially in a post-conflict context.



Figure 6: A fragment of a femur showing perimortem fracture (thin arrow), postmortem breaking (broad arrow) and embedded shrapnel (circled).

It should also be noted that the mere absence of fatal skeletal injuries does not exclude violence. Injuries involving soft tissues may leave no trace on the skeleton, while postmortem conditions of the remains, including decomposition, fragmentation, and taphonomic changes, can further obscure evidence of perimortem trauma.

LIMITATIONS AND REFLECTIVE LESSONS

This investigation was conducted under several operational and methodological limitations. The

absence of antemortem data and reference DNA samples limited individual identification, highlighting the need for community outreach in the investigation and reference-sample collection in future post-conflict exhumations. Although transparency was prioritized through media access and independent observation, the absence of a formal community liaison or psychosocial support system contributed to misinterpretations and emotional distress. Financial delays disrupted the exhumation process, highlighting the importance of dynamic funding mechanisms. While techniques like ADMT were useful in delineating grave boundaries and minimizing infrastructure disruption, validation studies and the use of alternative geophysical methods would increase the usefulness of such applications. Interpretation of artefactual evidence, such as clothing and identification tags, relied on contextual information and therefore required caution. Selective use of imaging due to resource limitations may also have restricted comprehensive trauma analysis, particularly in differentiating perimortem explosive injuries from postmortem fragmentation. Future investigations would benefit from strategies for DNA identification, community engagement, flexible funding, and improved geophysical and radiographical facilities.

CONCLUSIONS

The Kokkuthuduvai exhumation highlighted the complex scientific, operational, emotional, and ethical challenges involved in post-conflict mass grave investigations in Sri Lanka. The investigation emphasized the importance of scientifically sound forensic methods, transparent communication with affected communities, careful interpretation of uncertain findings, culturally sensitive handling of human remains, and flexible logistical support. The experience also demonstrated the value of multidisciplinary collaboration, non-invasive grave delineation techniques, and strengthened forensic anthropological and radiological capacity for future humanitarian investigations in post-conflict settings.

LIST OF ABBREVIATIONS

ADMT - Audio magnetotelluric technique
CHRD - Centre for Human Rights and Development
CT - Computed tomography
CCTV - Closed-circuit television
DNA - Deoxyribonucleic acid
ICRC - International Committee of the Red Cross
LTTE - Liberation Tigers of Tamil Eelam
OMP - Office on Missing Persons
SOCO - Scene of Crime Officers

ACKNOWLEDGEMENTS

The authors wish to acknowledge the invaluable expertise provided by the archaeology team led by Prof. Raj Somadeva of the Postgraduate Institute of Archaeology, University of Kelaniya, Sri Lanka, and the dental expert team led by Prof. AKS Arambawatta and Prof. HRD Peiris of the Faculty of Dental Sciences, University of Peradeniya, Sri Lanka,

CONFLICTS OF INTEREST

The authors declared no conflicts of interest.

DISCLOSURE

EMKBE is a member of the Editorial Board of the Sri Lanka Journal of Forensic Medicine, Science & Law. Therefore, they did not participate in any way in the publication/decision-making process of this submission, as per journal policy.

ETHICAL ISSUES

The presented exhumation case was conducted for medicolegal purposes, and the findings were used for academic purposes, according to the institutional guidelines.

SOURCES OF SUPPORT

None.

AUTHOR CONTRIBUTIONS

SP: Conception and design of the work; the acquisition, analysis, and interpretation of data work; drafting the work and reviewing it critically for important intellectual content; approval of the final version to be published; and agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and

resolved. **EMKBE**: Conception and design of the work; the acquisition, analysis, and interpretation of data work; drafting the work and reviewing it critically for important intellectual content; approval of the final version to be published; and agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. **KV**: Conception and design of the work; the acquisition, analysis, and interpretation of data work; drafting the work and reviewing it critically for important intellectual content; approval of the final version to be published; and agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. **BS**: Conception and design of the work; the acquisition, analysis, and interpretation of data work; drafting the work and reviewing it critically for important intellectual content; approval of the final version to be published; and agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. **SPIMCSI**: Conception and design of the work; the acquisition, analysis, and interpretation of data work; drafting the work and reviewing it critically for important intellectual content; approval of the final version to be published; and agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. **WMTL**: Conception and design of the work; the acquisition, analysis, and interpretation of data work; drafting the work and reviewing it critically for important intellectual content; approval of the final version to be published; and agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. **UM**: Conception and design of the work; the acquisition, analysis, and interpretation of data work; drafting the work and reviewing it critically for important intellectual content; approval of the final version to be published;

and agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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