

Abstract: Law enforcement agencies rely heavily on medico-legal autopsies to identify the deceased and establish the cause of death, time since death, and circumstances of their deaths. Traditional autopsy techniques, have the potential to leave the deceased with aesthetic defects and deformities, upsetting their family and possibly decreasing the effectiveness of the investigation. Routine autopsy procedures are improved by this new unique method of Lateral Percutaneous (LP) incision approach that reduces invasiveness while increasing visibility. This article highlights the study's purpose and goals, which center on developing a novel method for autopsy skin incision while emphasizing procedural effectiveness and the satisfaction of both the medical community and the bereaved family. In this research, explained the validity, effectiveness and prospective advantages of the LP incision technique and reviewed the research's methods including literature reviews, cadaver studies, and expert consultations.

Key words: Autopsy; Lateral Percutaneous incision; Cosmetics; Cadaver; Time since death; Forensic Medicine.

Introduction: Law enforcement agencies need medico-legal autopsies to help them in investigations and in solving situations involving mysterious deaths. However, due to the usage of confirming, additional or releasing incisions during the autopsy examination, conventional autopsy skin incision techniques might produce observable defects and ugliness.[1]

Hospital autopsy rates have been falling globally over decades, according to research. The inability of professionals to gain consent from families of patients who passed away in hospitals is one of the factors contributing to this reduction. Autopsy number has decreased as a result of families' unfavorable perceptions of giving their consent due to concerns of deformity.[2] To reveal the underlying structures, the skin can be incised in a number of different methods, the Y-shaped, the modified Y-shaped, and the I-shaped are the three skin incisions that are used the most frequently.[3,4]

This novel Lateral Percutaneous (LP) incision technique for traditional autopsy can be used to overcome these difficulties and enable optimum vision of the whole body without compromising aesthetics.

Materials and Methods:

As part of an observation-based study over autopsy, the author examined suturing techniques and corpse-packing techniques in 20 cases, including lateral percutaneous (LP) incision and other standard incisions. The objective is to estimate the effectiveness and feasibility of a novel innovative method of Lateral Percutaneous (LP) skin incision for traditional autopsy. To comprehend current autopsy skin incision methods and recognize their shortcomings, a thorough literature research was carried out. The LP skin incision technique was devised and used in cadaveric examinations to evaluate its feasibility and effect on visibility based on the findings from the research that was done. To get important input and insights on the dependability and effectiveness of the LP skin incision procedure, forensic experts, pathologists, and medical

specialists and other law authorities were consulted.

The present study exclusively uses data from our institution which might limit the findings' application in other institutions. Throughout this study, the principles and standards of the Helsinki Biomedical Ethics Guidelines, which pertain to the ethics of human research have been taken into account and followed. Institutional Ethics' approval obtained prior to the study. Incisions and a medical-legal autopsy are mandatory in India in unnatural deaths, precautions taken to protect the identification of the deceased person.

Results: According to the study, the recommended novel Lateral Percutaneous (LP) incision was doable, produced a lovely cosmetic outcome, and was easily obtainable. By keeping the body's look to the maximum extent feasible, the LP skin incision technique attempts to lessen the emotional load on the deceased's family.

The method uses a lateral percutaneous approach to lessen the level of physical damage and deformity, leading to a more courteous assessment.

When using this form of skin incision, it is more time efficient, gives an entire operating area with linear incision, and is more cosmetically successful than other procedures that are recommended. Because the present study is based on single circumstance it may be difficult to generalise the results to other contexts. To determine the benefits of the new incision, a validity study is about to be undertaken.

Posterior dissection, if necessary in a case, the suturing for the dead body reconstruction must be completed at the end.

The study's findings show that the novel Lateral Percutaneous (LP) skin incision is less invasive than conventional autopsy incision, with potential benefits for the deceased person's family in terms of cosmetic and emotional support as the LP incision sutures covered by upper limbs. It also improves procedural efficiency and causes less tissue disruption.

Discussion: In this method, Release incisions are not needed to expose of the neck's anterior aspect and the lower jaw's lower border entirely which can help

in separating a bruise from a hypostasis, and for evaluating the presence of bruising. It also helps to reassess the injury tract in stabbing and gunshot injuries. This incision is helpful in situations of surgical death as well since this skin incision does not interfere with iatrogenic surgical wounds.

The LP incision outshines the previously attempted "Fourth Incision" by delivering unmatched cosmetic outcomes, completely concealing sutures beneath the upper limbs to preserve the body's natural appearance with no visible anterior scars. Its innovative, streamlined linear design not only reduces the number of sutures required but also ensures a faster, more efficient procedure, making it a transformative advancement in aesthetic and practical autopsy techniques.[5]

Traditional autopsy methods, such as the Y-shaped incision, often lead to issues like fluid leakage during body transport due to excessive tissue disruption and open cavity exposure. The LP incision minimizes these complications by maintaining tissue integrity and reducing the extent of cavity

exposure. This makes it more practical and efficient for post-autopsy handling, ensuring the body remains intact during transportation.[6]

Conventional autopsy techniques involve complex layered suturing, which increases the time and effort required for body reconstruction. In contrast, the LP incision's simplified linear design significantly reduces the need for intricate closures, enabling quicker and more efficient body preparation. This efficiency is particularly valuable in mortuaries with high workloads, allowing faster turnover without compromising quality or procedural outcomes.[7]

Additional thoracic incisions, especially those at the front of the trunk, are not necessary in LP incision. When viewed squarely in front of you, incisions on the neck and trunk are less noticeable. Its routine usage is feasible and beneficial for an autopsy done on a female body, in case of death due to torture and in case of lethal pressure on the neck. This method encourages a single incision and is physically appealing, which benefits autopsy doctors and legal heirs.

We can see the following characteristics in our LP incision:

- This incision is used to assess extravasation of blood in the upper pelvic area in cases of suspected pelvic injury and there is no need of further releases or confirming incisions.
- Operational region accessible for evaluation without further incision and Understandable is Complete
- Since the umbilicus is a cicatricial tissue, there are cosmetic benefits, especially for female bodies when the umbilicus is avoided during this incision.
- Visible regenerated incision of skin on the dead person's front is less than conventional autopsy incisions ("I"/"Y"/modified "Y").
- This incision is helpful when there are injuries to the upper chest and neck from burking, smothering, or mugging.
- Stitching up the flap of the abdominal muscle is not necessary
- This incision is made on a fetus or newborn in order to examine the umbilical arteries.

- This incision was utilized to investigate the neck's base and examine the vertebral arteries.
- When there is suspicion of torture, such as in-custody death, this incision is utilized to investigate the neck, thoracic, abdominal, and pelvic region contusions.
- No body fluid leakage during transfer. Moreover, this incision does not obscure the examination regions in instances of iatrogenic incision wounds such as LSCS wounds, fabricated injuries in the trunk. And also used to identify previously removed tattoos on deceased individuals.
- When there are hidden puncture wounds like injections or snake bites in the trunk, this incision is useful.

More time is needed for stitching than for conventional autopsy.

Conclusion: The Lateral Percutaneous (LP) skin incision approach for medico-legal autopsies has the potential to revolutionize the current autopsy practices if it is developed and used successfully. This ground-breaking method advances forensic medicine by

emphasizing procedural effectiveness, reducing invasiveness, and increasing satisfaction among medical professionals and the deceased's family. The findings of this research will have favourable impact on autopsy procedures and help make medico-legal examinations more accurate and humane.

Declarations:

Institutional Ethics & Review Board Statement
Obtained prior to the study.
(Ref - MDC/JNMC/DOME/385)

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Declaration of Competing

Interest: The author declare that they have no conflicts of interest. Moreover, they declare that no competing interests exist.

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The sequence of the incision was produced after a thorough investigation of the anatomical landmarks as follows:

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Image-1: Positioning of the body for identifying anatomical landmarks.



Image 2: Marking the lateral percutaneous incision site.

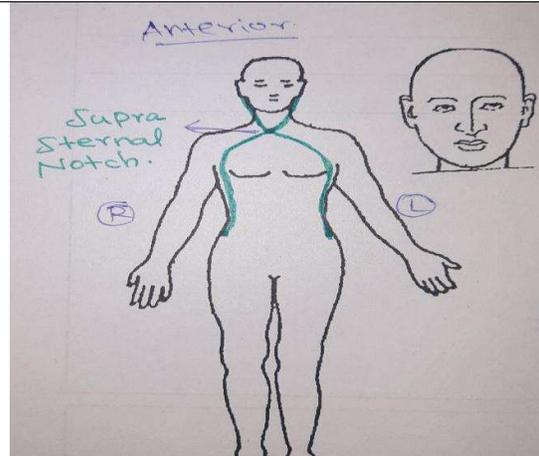
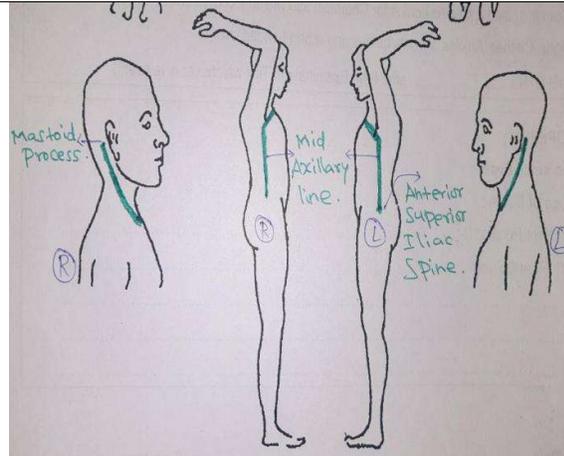


Image 3: Initiation of the LP incision with minimal tissue disruption.



The Lateral Percutaneous LP incision used in traditional autopsies is plainly seen in the photographs below:

Image 4: Detailed view of the LP incision along the lateral plane.

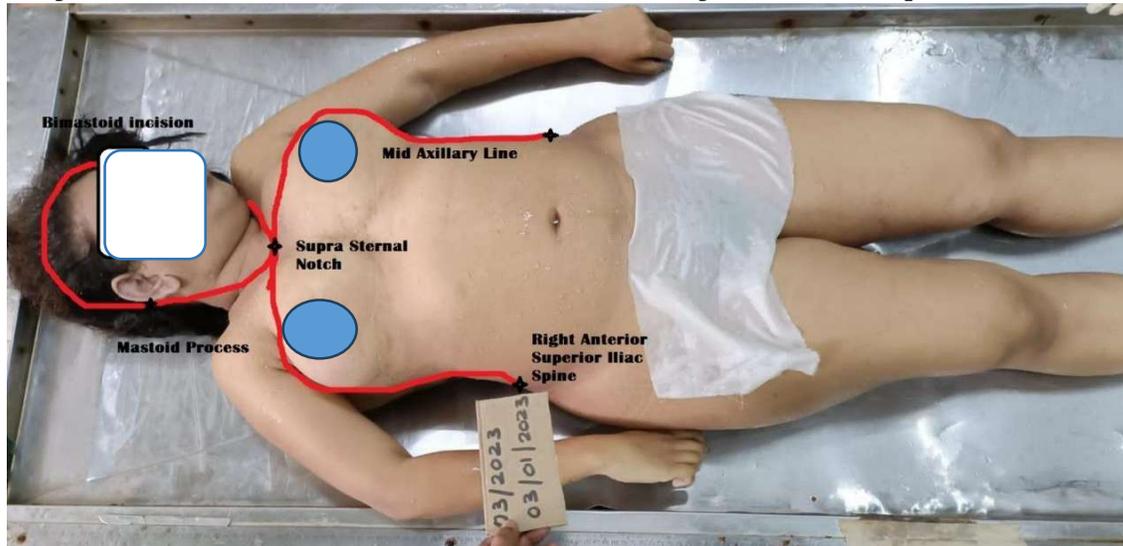


Image 5: Detailed view of the LP incision along the neck region.



Image 6: Examination of the neck region via the LP incision.



Image 7: Access to thoracic and abdominal regions using the LP technique.



Image 8: Suturing of the LP incision to conceal stitches beneath the limbs.



Image 9: Cosmetic outcome showcasing minimal anterior scarring.



Image 10: Comparative aesthetic result highlighting preserved appearance.





Image 11: Aesthetic result over neck highlighting preserved appearance.



Image 12: Final reconstructed appearance post-suturing.



Image 13: Final reconstructed appearance post-suturing over neck.



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