A Modified Cosmetic Technique for Head and Neck Dissection in Autopsy Especially for Bald-headed Deceased

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Abstract

The autopsy is a specialized procedure in which a pathologist performs a thorough external and internal examination including dissection of the organs from different body cavities such as cranial, thoracic, abdominal, and pelvic. In such dissection of an intact dead body, disfiguration and destruction are likely. When viewed during a funeral service, the currently practiced conventional autopsy dissection techniques can result in minimal tell-tale autopsy marks on the body of the deceased, in exposed areas of the head and neck even when the other areas of the body are covered with clothing. We propose a modification to the conventional skin incision over the head and neck in a way that the incision is placed over the back of the head and neck compared to the conventional incision over the sides of the head and sides of the neck. In this way, the incisions and their stitch marks are hidden, making them cosmetically sound. Although the exposure gained through the proposed method is similar to the conventional method additional incisions over the back of the neck with the additional turning of the body from supine to prone can increase the time duration of the autopsy compared to the conventional method. Moreover, in this method, the incisions are invisible even in a bold-headed deceased as the head incision is placed over the back.

Keywords: Modified cosmetic autopsy technique, head and neck dissection, post-mortem

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Introduction

The autopsy is a specialized procedure in which a pathologist performs a thorough external and internal examination including dissection of the organs from different body cavities such as cranial, thoracic, abdominal, and pelvic. In such dissection of an intact dead body, disfiguration and destruction are likely. Over the years since the first reported autopsy, these dissection methods have become more cosmetically sound.

Upon completion of the autopsy, all organs are returned to the body and all incisions are sutured to make the body suitable for viewing during funeral services. A cosmetically sound autopsy procedure aims to ensure that the evidence of the autopsy is not evident in a funeral viewing.

The currently practiced conventional autopsy dissection techniques can result in minimal tell-tale autopsy marks on the body of the deceased in exposed areas of the head and neck even when the other areas of the body are covered with clothing.

Moreover, studies have shown that the hospital autopsy rate has been declining worldwide for decades. [1][2] One of the reasons for this decline as perceived by clinicians is difficulty in obtaining consent from relatives in-hospital deaths. [1] Concerns about disfigurement have resulted in a negative view towards granting consent to an autopsy by relatives and contributed to a decline in autopsies. [3] Therefore, for cosmetic reasons, choosing a modified skin incision to minimize disfiguration of the body is particularly important.

A few articles have been written to propose new cosmetically sound autopsy techniques in recent times. [4][5] Moreover, in those proposed techniques the incisions are made on the coronal plane of the head like the conventional autopsy techniques. This would still limit the potential to disguise evidence of an autopsy and restrict viewing of the deceased body to the frontal aspect.

This article aims to propose a modified dissection method that is also cosmetically acceptable. In this new method, incisions are placed over the back of the head and neck without conventional incisions

over the lateral aspect of the neck. This allows the incisions and the stitch marks to be invisible during a funeral viewing. Moreover, in this method, the incisions are invisible even in a bold-headed deceased as the head incision is placed over the back.

Methods

The dissection is guided by considering two concepts (a) the dissection method must produce sufficient exposure to internal organs, and (b) must also cause minimal disfiguration of the body.

The conventional skin incision of the head to access the skull and brain in autopsy is a mastoid-to-mastoid incision which is well described [7]. The body is placed in a supine position and the incisions are made in the posterior vertex from around 1cm behind both external ear lobes over the mastoid area and extended medially meeting over the crown of the head. The tissues are then reflected forwards to the lower forehead and backward to the occiput.

In this new method, the conventional skin incision over the head can be modified in a way that the incision is placed over the back of the head to allow the incision to be hidden during viewing. During this procedure, the body is placed in a prone position. The scalp incision is made vertically from the middle of the coronal plane and extended downwards along the posterior midline of the body to an imaginary line between the shoulder blades in the back of the chest (Fig 1).

Figure 1. Scalp and neck incision

The flaps of scalp on both sides are then reflected up to the ear lobes with a peel-off by traction technique, and also the use of a scalpel (Fig 2). The skin anterior to the coronal plane is peeled of by traction similar to the conventional technique.

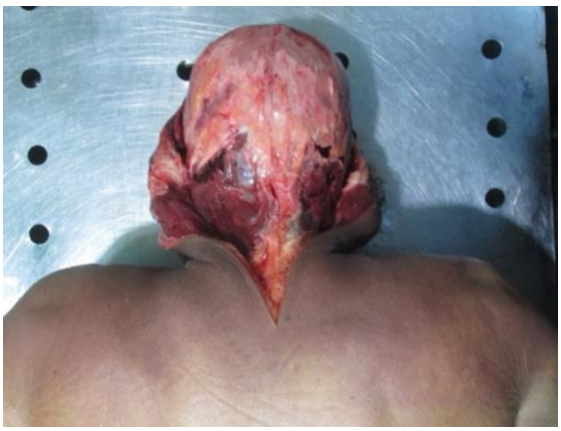

Figure 2. Reflection of the scalp

From here on the skull is sawn through the conventional method that is practiced by most pathologists. (Fig 3,4,5)

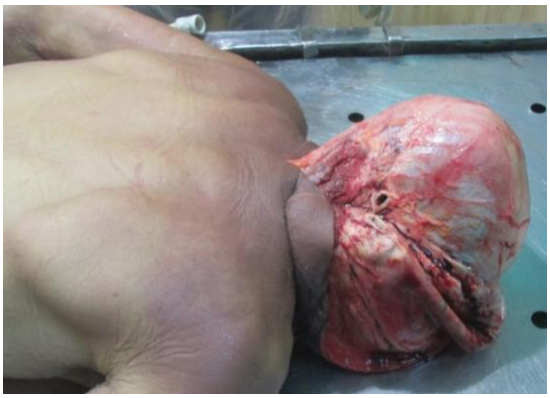

Figure 3. Lateral view of the scalp incision

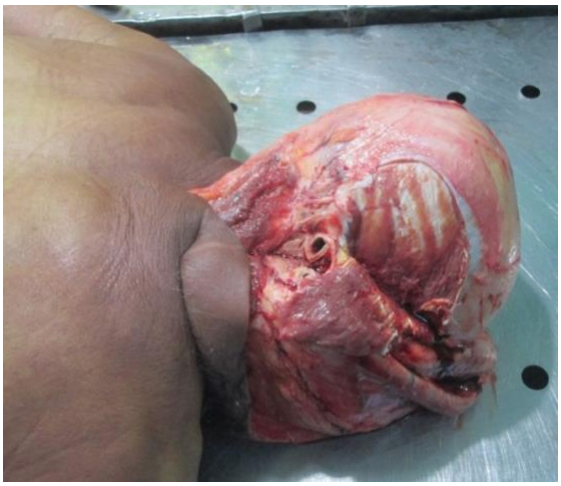

Figure4. Reflection of the temporalis muscle

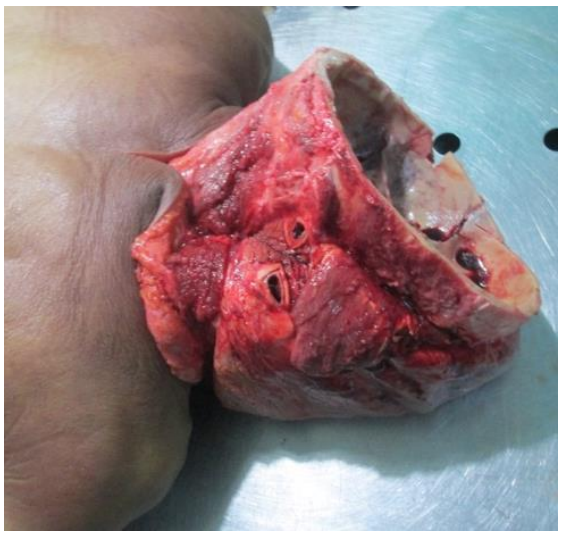

Figure 5. Lateral view after removal of the vault of skull

A complete examination of the neck including the posterior neck is usually not performed during a routine hospital autopsy. The conventional incision over the neck and down the abdomen is a single midline vertical incision from the symphysis mentis to the symphysis pubis. The disadvantage of this incision is the visibility of the incision and suture marks over the front of the neck as the front of the neck area is not covered by clothing during funeral viewing. Some authors have suggested commencing the incision from the laryngeal prominence to the pubis to avoid the upper end of the incision being above the larynx, as even a high neck shroud will not hide the suture lines. [7] But this can limit access to the deep structures of the neck.

The other common method of neck incision is a 'Y' shaped incision beginning behind each ear, and continuing downwards towards the midline of the sternum. [6] The left and right limbs of the Y extend down to the lateral third of their respective clavicles and then gradually meet at the midline of the sternum to be carried along the midline to the pubis. As the incision is placed on the sides of the neck, tell-tale marks of autopsy remain on the body during funeral viewing.

In this new method, there is no incision over the front or the side of the neck. Horizontal incisions are made extending laterally from the inferior end of the vertical incision of the head and neck. This incision is continued up to the front of the chest close to the acromion process (Fig 6).

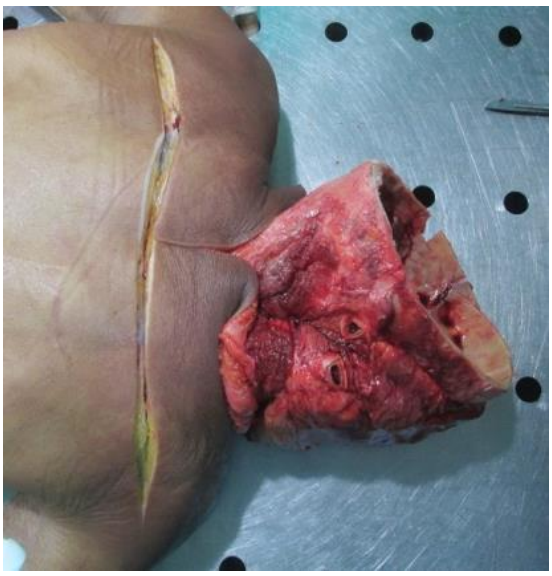

Figure 6. Incision of the upper back of the chest

Then the skin and subcutaneous tissues of the posterior neck and upper back are dissected leading to two skin flaps (Fig 7).

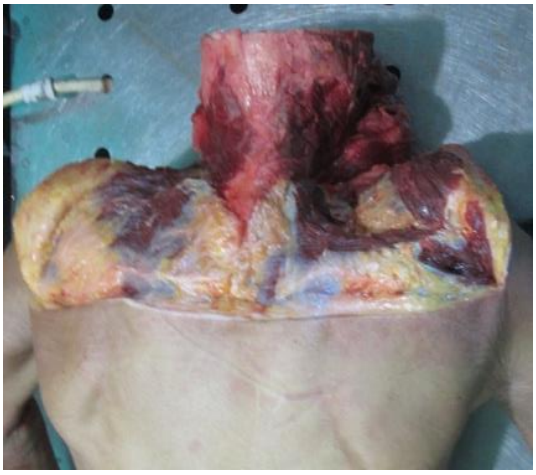

Figure 7. Reflection of the posterior flap

With the body moved to supine position, two incisions are placed over the respective anterior shoulder joint areas over the acromion processes and gradually joined in the region of the manubrium-sternal joint, forming a 'V 'shape (Fig 8).

Figure 8. Anterior neck incision.

The skin and soft tissue dissection of the front of the neck are continued to the midline from the sides initially as two flaps and finally merging anteriorly at the midline. The soft tissue dissection of this single flap continues upwards to the mandible (Fig 9).

Figure 9. Reflection of the anterior flap

Objectives

1. To develop a new cosmetically sound autopsy incision technique for the head and neck region, especially for bald-headed deceased.

Discussion

A proper and thorough dissection of the head and neck is important in a medico-legal autopsy where the cause for death is often found in the head.

In head dissection at autopsy, the 'mastoid to mastoid incision' is used by forensic pathologists. When performing mastoid to mastoid skin incision it is recommended for cosmetic reasons that the incision be kept posteriorly to the actual vertex to make post-incision stitching less obvious.

Observations by many have disputed the argument that stich marks become less obvious in this conventional method, especially where hair is scanty or hair is absent. The head and neck region are often not covered by clothing during standard funeral viewing. Sometimes a casket pillow will be used to hide the cranial incision. In this new method, the incisions are placed at the back of the head compared to the sides of the head in the conventional method, allowing evidence of an autopsy to be hidden when the body is placed in a supine position in a coffin. Moreover, in this method, the incisions are invisible even in a bold-headed deceased as the head incision is placed over the back.

We have found that the physical effort and time taken to perform the modified skin incision and reflect the tissues is more compared to the conventional method but the exposure of the internal organs gained after reflecting the tissues in the modified skin incision is also similar to the conventional method.

When using the conventional skin incision, a separate incision must be made to perform posterior neck dissection or spinal cord dissection. By using this proposed method, the incision over the neck can be continued deeper to gain access to posterior neck dissection and spinal cord dissection when needed.

In the conventional method anterior neck dissection is routinely performed. The upper part of the posterior of the neck is usually not incised unless injury is suspected. In this method, since the posterior part of the skin of the neck is dissected, incidental posterior neck injuries become obvious. However, the main disadvantage of this technique is that the body must be turned to make the skin incision over the head, and also during the initial posterior neck dissection.

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Disclosure statement

Conflicts of Interest: The authors declare that they have no conflicts of interest.
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