ANIL AGGRAWAL'S
Internet Journal of Forensic Medicine and Toxicology
The world's first online journal devoted entirely to forensic medicine and toxicology · Published 1 January and 1 July

VOL. 17, NO. 1 · JANUARY – JUNE 2016
Downloaded from www.anilaggrawal.com · ISSN 0972-8074 (Online) · https://www.anilaggrawal.com/ij/vol_017_no_001/papers/paper001.html

# Cry of Hollow Intact Skin-An Atypical Case of Run-Over Accident.

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CITE THIS ARTICLE

Sirohiwal BL, Tyagi A, Paliwal PK, Pal V. Cry of Hollow Intact Skin-An Atypical Case of Run-Over Accident.. *Anil Aggrawal's Internet Journal of Forensic Medicine and Toxicology* [serial online], 2016; Vol. 17, No. 1 (January – June 2016): [about 6 p]. Available from: https://www.anilaggrawal.com/ij/vol_017_no_001/papers/paper001.html

ABSTRACT

Skin is the longest organ of the human body[1]. It is a fibro elastic membrane which may be truly called the living envelope of the human body. It is complex in structure and endowed with active and passive function so that it affords covering and protection to the deeper tissues, and receives impressions from the external world to which it continually exposed[2] and these impacts are of great significance in solving medicolegal problems as in the instant case. We have received flaps of almost intact skin without any intact bone or any internal structure. There was a history that an unknown older adult male person was hit and run over in an accident in the late evening hours of February, 2013 and his dead body remained lying on a busy road while the vehicles kept running continuously over it throughout night. It had multiple lacerations over the head and both upper and lower limbs at places through which the internal structures including bones / organs were forced to go out probably with every pressure of run-over of vehicle and the only skin flaps were left sticking over the road that were recovered by scratching with great difficulty as conveyed by the police for post-mortem examination.

## Introduction

Today, automobile accidents are extracting nearly more than thousands of lives, daily all the world round. With an increasing use of vehicles, injuries due to them are so common nowadays that it is

necessary for a medical officer to be able to assess the injuries, the mechanisms by which they are caused and the cause of death[3]. It will not be too much to stress upon the medicolegal importance of examination of such cases of injuries and their roles towards reconstruction of traffic accidents, more so in respect of confirming or refuting the evidence of witnesses. Thus such examination will also help to detect hit and run cases [5].

## Case History

A worker of a hotel in front of a medical college told the police that in the late evening of 24 February 2013, one seemingly mentally disturbed individual was seen roaming on the road in front of the hotel. When he came on duty next morning, he noticed the dead body of that man on the road wrapped in the clothes which he noticed on the previous evening. The deceased might have got hurt by a rash and negligent driver of a speeding vehicle during the night time. The body was recovered from that busy road. Then the body was sent for post-mortem to that private medical college as authorised by the government. The private medical college, in turn referred this case to PGIMS, Rohtak for post-mortem with a note that the body was severely mutilated so it was being referred to a higher centre for conducting the post-mortem examination. Ironically, it appears to be funny for the forensic expert to refer the case with such remarks to another forensic expert reflecting the condition of medicolegal services as well as harassment of investigating agencies particularly in unidentified dead bodies.

### External Examination

The dead body was received in white colour shroud (*palli*-a covering made of jute). It was wearing a sweater, 2shirts and a baniyan (undershirt). All the clothes were torn at multiple places, smudged with twigs of grass, blood and dried crushed soft tissues and greasy substances. The body was severely mutilated having only skin of the areas over head, neck, upper limbs and lower limbs, chest & abdomen and the skin over the genital area was almost intact without soft organs and bones in it [figure 1]. The body was emitting smell of freshly mutilated body. Tyre marks were seen over the posterior aspect of the body. Exposed parts of the body (skin) were smudged with mud and twigs of grass at places. There were no intact bones present inside the body and only remnant of broken pieces of bones attached with the soft tissues present at places. Over the head and neck region, only the skin of neck was present along with deformed ears of both sides. Over the neck skin beard was present of size 0.3-0.5cm and mostly greyish in colour. The available remnant part (flap) of the scalp was not showing any ante mortem injury. Rest of all the soft and hard tissues of head and neck were found to be missing. Both the upper limbs were also mutilated with absence of any bony structure. The ligaments of both hands were exposed, dried up and crushed along with the rest of the tissues of the hand. Over the chest and abdomen region skin was present all around with body hairs present over it [figure 2]. The external genitalia were missing along with the surrounding remnant skin showing avulsion. Pubic hairs were present 2-3cm long, black in colour with occasional gray and curly. Right limb was separated from rest of the body. There was also a small piece of skin lying separately which appears to be of thigh area. In lower limbs also the bony structures were not present as whole and only broken remnant pieces were seen attached to soft tissues. Both feet were de-gloved with the presence of avulsed, dried up, exposed ligaments seen at places. On opening of chest and abdomen bony framework found to be missing somewhat and remnant bony tissues found to be crushed on both anterior and posterior sides.

**External Injuries**:-

1. A reddish grazed abrasion of size 10x6cm present over right side of neck. On dissection underlying tissues were ecchymosed.
2. A reddish grazed abrasion of size 35x28cm present over anterior aspect of chest and abdomen area situated 12 cm below right nipple in the midline. On dissection skin and soft tissues showed appreciable effusion at places (figure 3).
3. A reddish colour grazed abrasion of size 5x4cm present over posterior aspect of right elbow region. On dissection underlying tissues were ecchymosed.
4. A reddish grazed abrasion of size 13x5cm present over posterior aspect of left calf area. On dissection underlying tissues were ecchymosed (figure 4).
5. A reddish grazed abrasion of size 15x5cm present over posterior aspect of right calf region. On dissection underlying tissues were ecchymosed (figure 5).

**Internal Examination**:-

The scalp, skull, vertebrae, membranes, brain, ribs and cartilages, larynx & trachea, pleurae, both lungs, pericardium with heart, large vessels, peritoneum, pharynx, oesophagus and organs of generation were all missing. Abdominal viscera were also mostly missing. Some of the crushed remnants of available abdominal viscera was preserved and sent for chemical analysis.

The cause of death in this case was pronounced as crush injuries and their complications affecting the vital areas of the body; the injuries appeared to be at places ante-mortem as well as post-mortem in nature and these would have been caused in road side accident as alleged in the inquest papers; however, considering the circumstances and non-identification of the body the probability of criminal intent cannot be ruled out at this stage.



**Figure 1**- Reconstruction of flattened intact skin of the front and back aspect of different parts with open ends of the areas in the region of head& neck, abdomen, both upper & lower limbs without any bone or soft organs inside it.




**Figure 2**- Internal examination of the thoracic and abdomen showing no remnants of bones / organs only muscles freshly looking were identifiable; similar was the condition of the upper and lower limbs where no bony parts were observed




**Figure- 3** Intact flaccid merging anterior and posterior aspects of the skin of the abdomen showing multiple reddish grazed abrasions with dry twigs, pebbles and appreciable grease like stain.




Figure 4 - Intact flaccid merging anterior and posterior aspects of the skin of the calf region showing multiple reddish grazed abrasions with dry twigs, pebbles and appreciable grease like stain without any bone inside it.




Figure 5- Intact flaccid merging anterior and posterior aspects of the skin of the right calf region showing multiple reddish grazed abrasions with dry twigs, pebbles and appreciable grease like stain without any bone inside it.

## Discussion

The remains of intact skin without bones and internal organs of this instant case can be explained on the following grounds. Rolling injuries are produced when a vehicle with a low chassis, “rolled” the victim along the roadway as it passed over him. ‘Running-over’ injuries are relatively unusual and the effects are variable, depending on the area of the body involved, the weight of the vehicle and the surface area of the contact [7]. They are usually located on two or more body surfaces and run circumferentially. They are mostly abrasions, grease soiling and burns from the exhaust system. There may be fractures of the skull, neck, shoulder, shoulder girdle, ribs vertebrae or pelvis. Patterned imprints may be present caused by parts on the under surface of the chassis. The elasticity of skin and tissues tends to keep the body in one piece, though broken. At a very high speed impacts results in hemi section of the victim [4]. In run-over injuries there may be tyre marks present over the unclothed or not very thickly clothed areas struck [5]. If the wheel moves over the trunk, rupture of viscera may occur and, if it moves over a fleshy part, an avulsion may result with extensive de-gloving of a wide area, usually the thigh [3]. The abrasions are caused by the body’s scraping along the ground as the spinning tire pushes it backward. If the wheel passes over a limb, the spinning movement of the tire may avulse skin and subcutaneous tissue from the fascia and muscle [6].

When a wheel passes over the abdomen or pelvis, multiple parallel striae or shallow lacerations may occur near the contact area because of ripping tension in the skin. When a wheel passes over the pelvis, abdomen or head, there may be great internal damage with little surface injury. The weight of a large vehicle can virtually flatten a head, crushing the cranial vault. Often the brain is extruded through scalp lacerations, as may be the intestine through an abdominal wound. The pelvis may flatten out when run over, the symphysis or superior rami breaking, and one or both sacroiliac joints becoming detached. Any type of intra-abdominal injury may occur from ruptured

liver and spleen to perforated intestine, lacerated mesentery and fractured lumbar spine. In the chest, ribs, sternum and thoracic spine may fracture and heart and lung damage occur from crushing or laceration from jagged ribs[8].

## Conclusion

The examination of whole body in routine hardly cause any problem to an autopsy surgeon but the examination of only intact skin without bones and organs needs many things to be explained like, mechanism of its production that correlates the nature of the injuries and cause of death, duration of death etc. in all medicolegal autopsies. Its significance increases more particularly in unknown dead bodies found under suspicious circumstances for setting aside the criminal intents during post-mortem examination. We suggest that the reconstruction of all the skin parts would definitely help the autopsy surgeon to answer these questions.

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