

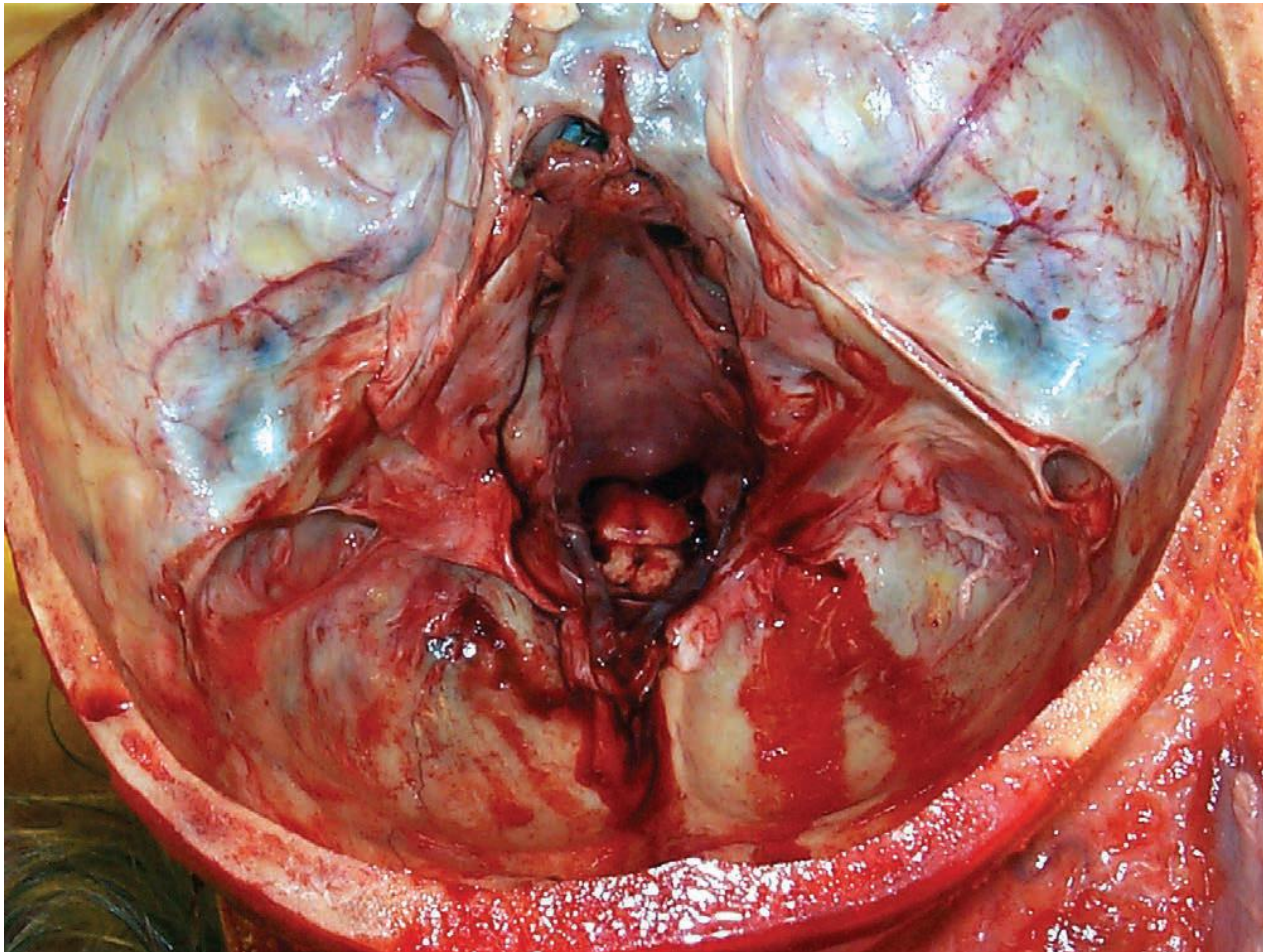
# **جروح وسائط النقل Road traffic injuries**

- **Injuries and fatalities occur in all forms of transportation but numerically road traffic accidents account for the great majority worldwide, causing more than 3000 deaths each day and killing more than a million people annually and injuring some 20–50 million. I**
- **If the current trends continue, road traffic injuries are**
- **predicted to come the fifth leading cause of death**
- **by 2030. Approximately 90 per cent of these deaths**
- **occur in low- and middle-income countries, where the road traffic fatality rates (21.5 and 19.5 per 100,000 population, respectively) are higher than in high income countries (10.3 per 100,000 population**

**Facial lacerations from a shattered windscreen in an unrestrained driver. The toughened glass breaks into small fragments, which produce the characteristic 'sparrowfoot' marks. The laceration on the forehead was made by the windscreen rim.**



**Ring fracture around the foramen magnum caused by an impact on the crown of the head in a car driver, who lost the control of his vehicle and crashed into a tree.**



**Bruising, laceration and bilateral leg fractures of a car driver in a frontal impact.**



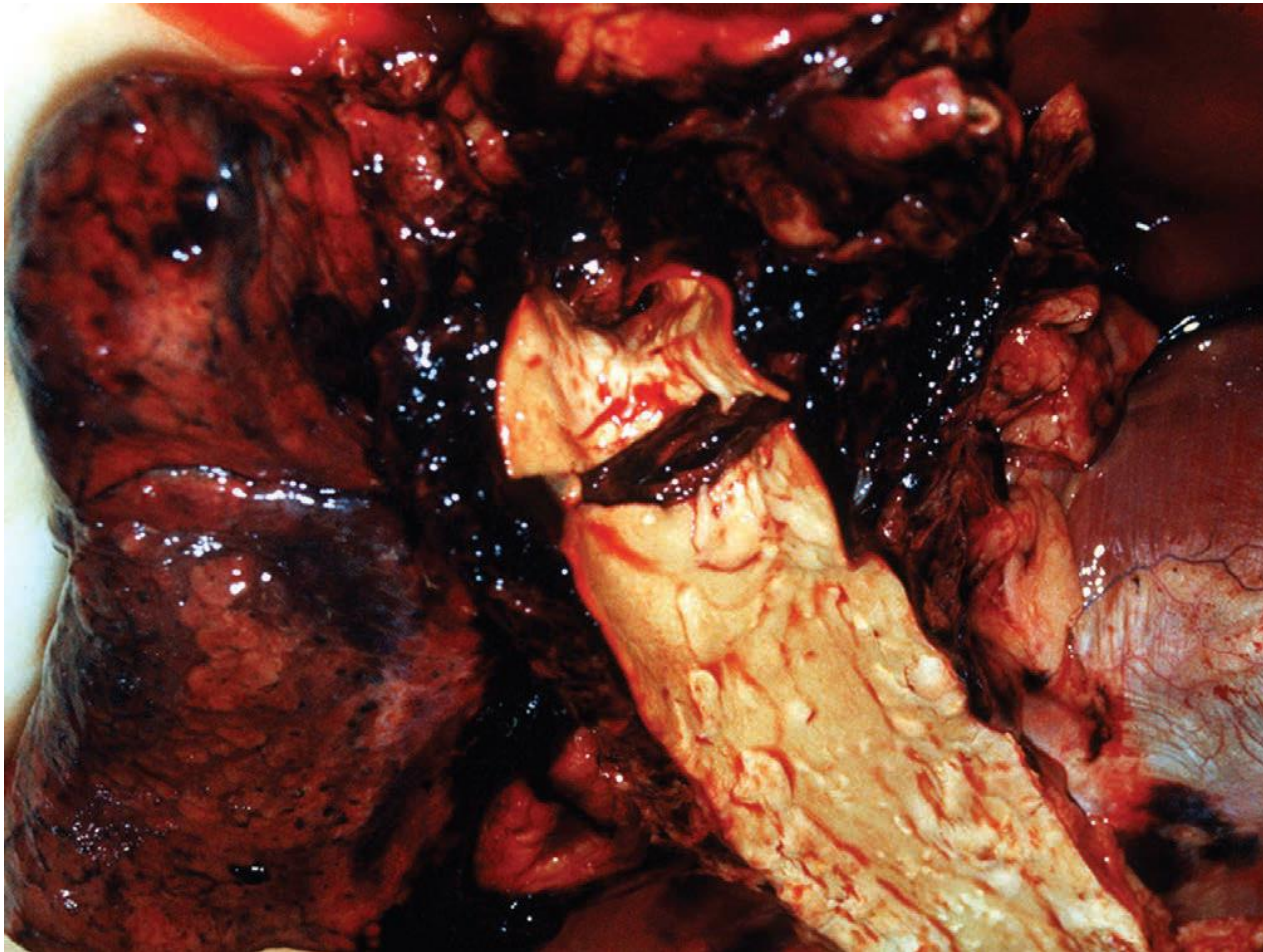
**Facial injuries in a car driver unrestrained by a seatbelt. Following a deceleration impact his face struck the windscreen, causing the typical small cuts from broken safety glass and lacerations of the temple from striking the windscreen rim or 'A' frame.**



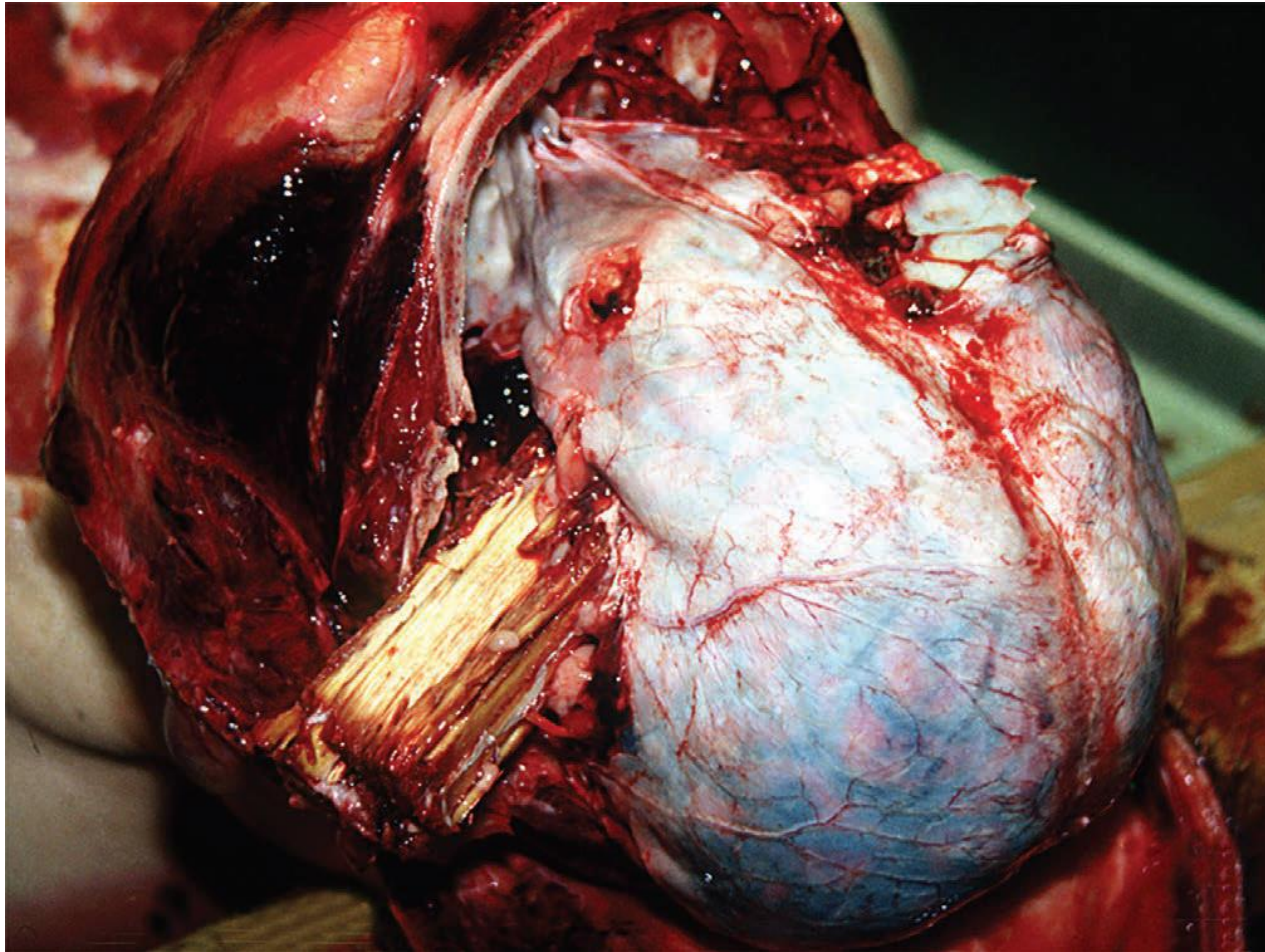
**Mixed injuries in a restrained car driver from a head-on collision. Death was caused by ruptured aorta.**



**Ruptured aorta in which the car occupant, unrestrained by seatbelt, suffered severe deceleration. Aorta has torn in the usual place, the distal arch where the curve of the vessel meets the thoracic spine.**



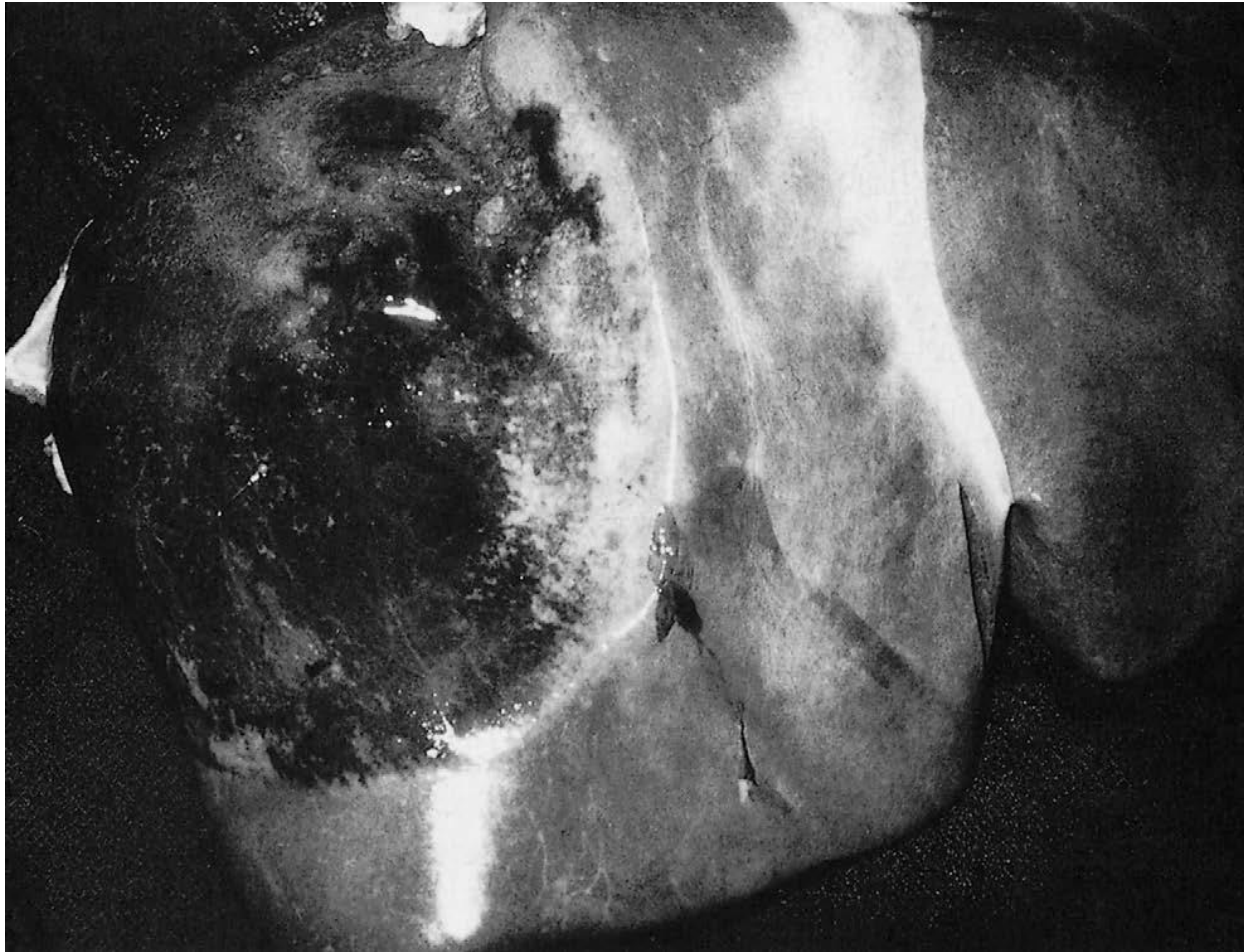
**A car collided with a mobile home towed by an oncoming car. The caravan broke into pieces and a wooden component impaled the head of a car passenger.**



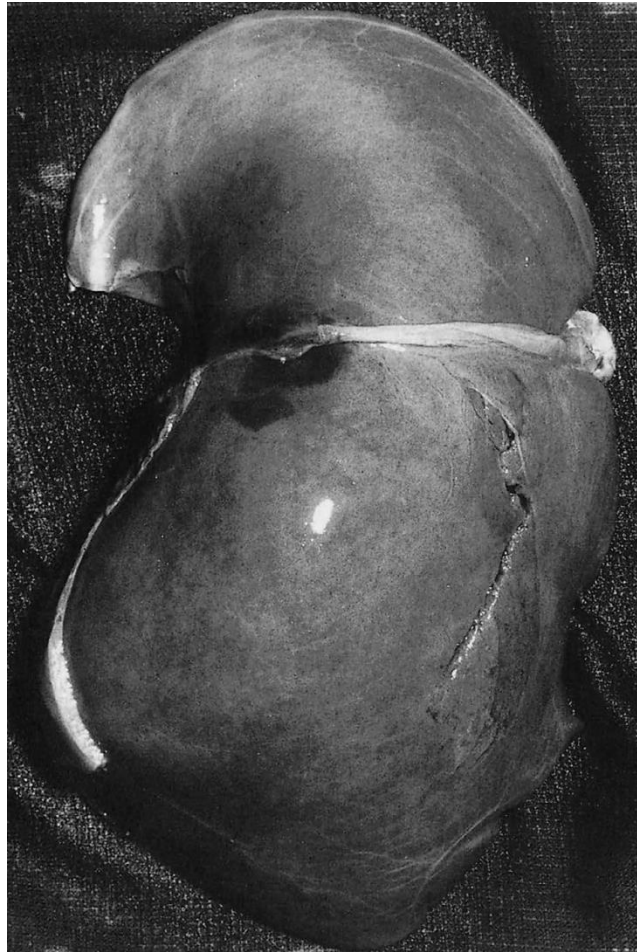
**Penetration of the wrist and chest by a wooden component of a bus seat. The victim drove his car at speed into a bus and part of the resulting debris penetrated his left ventricle.**



**Large subscapular hemorrhage of the liver in a driver who struck the rim of the steering wheel during severe deceleration. Such subscapular lesions can remain intact for hours or even days, then rupture into the abdominal cavity**



**Anterior tear through the full thickness of the liver; there is also a hemorrhage around the suspensory ligament. The victim was a car driver who was impacted against the lower curve of steering wheel in a frontal crash**



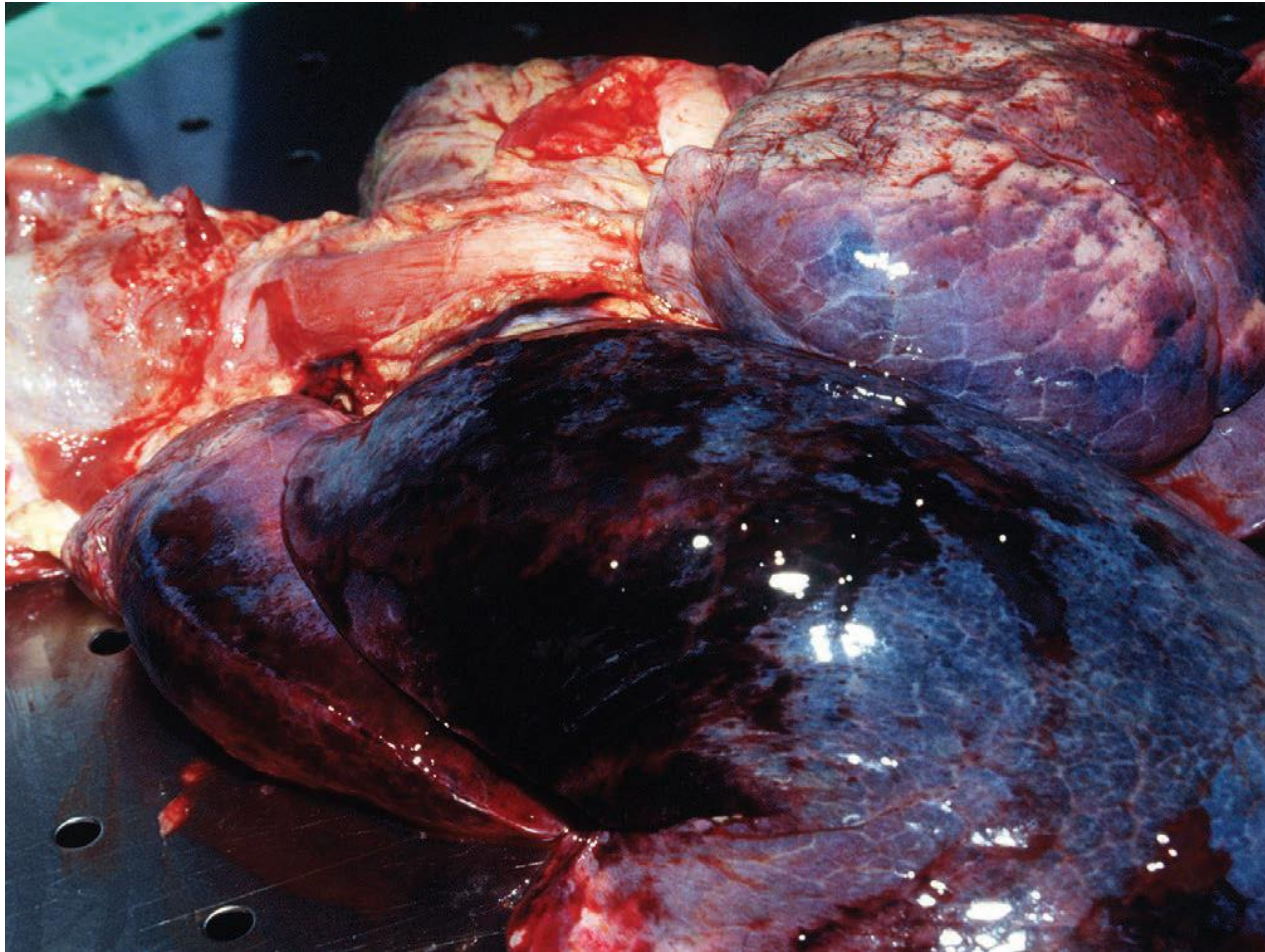
**Typical band-shaped subcutaneous haemorrhage due to diagonal seatbelt injury.**



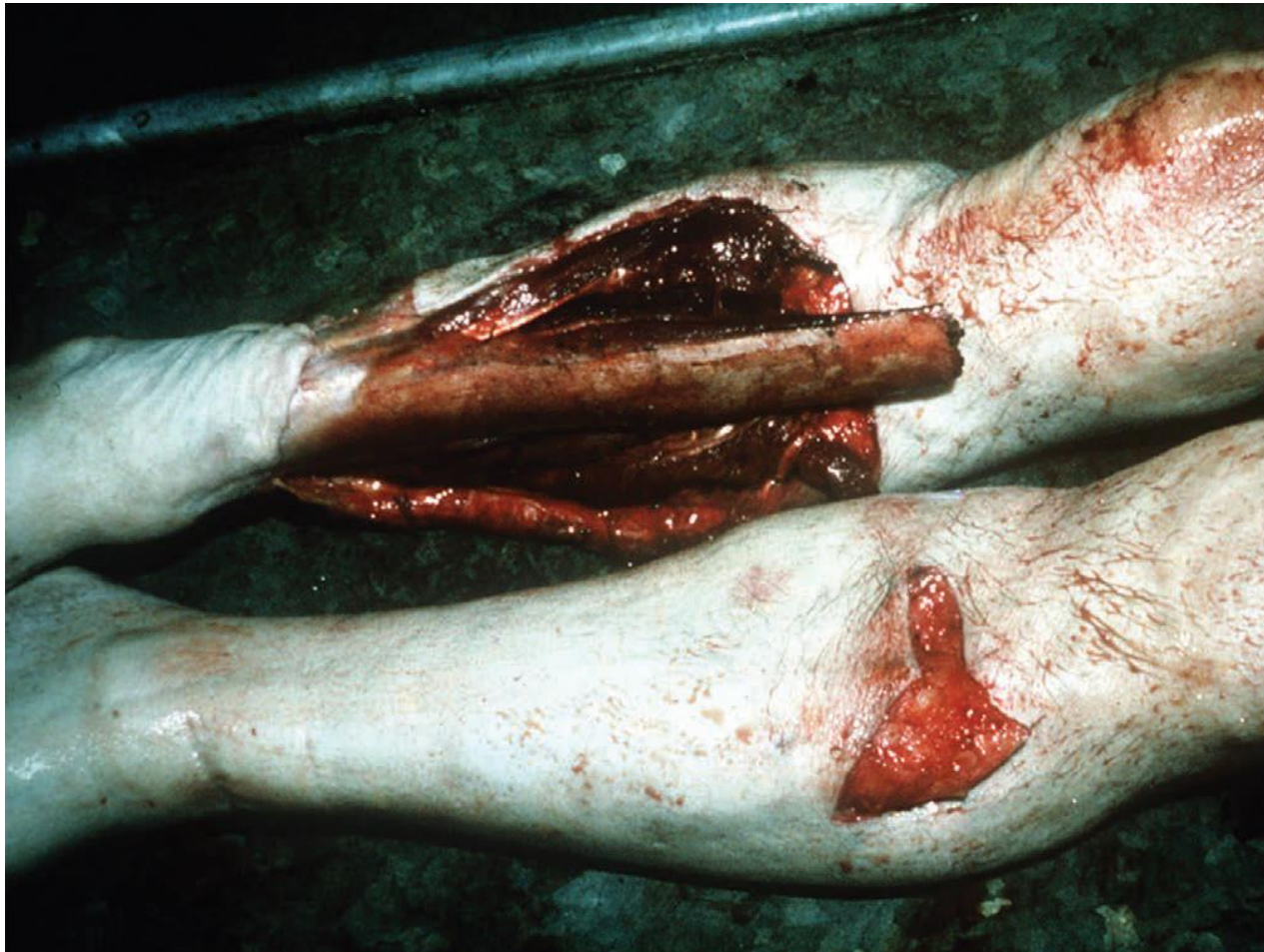
**Severe brush abrasions or 'friction burns' in a motorcyclist, who came off his machine and skidded across the road surface.**



**Pulmonary contusions in a motorcyclist, who collided with a truck and was hurled into a signpost. Death was caused by a cranial fracture and multiple injuries of the internal organs**



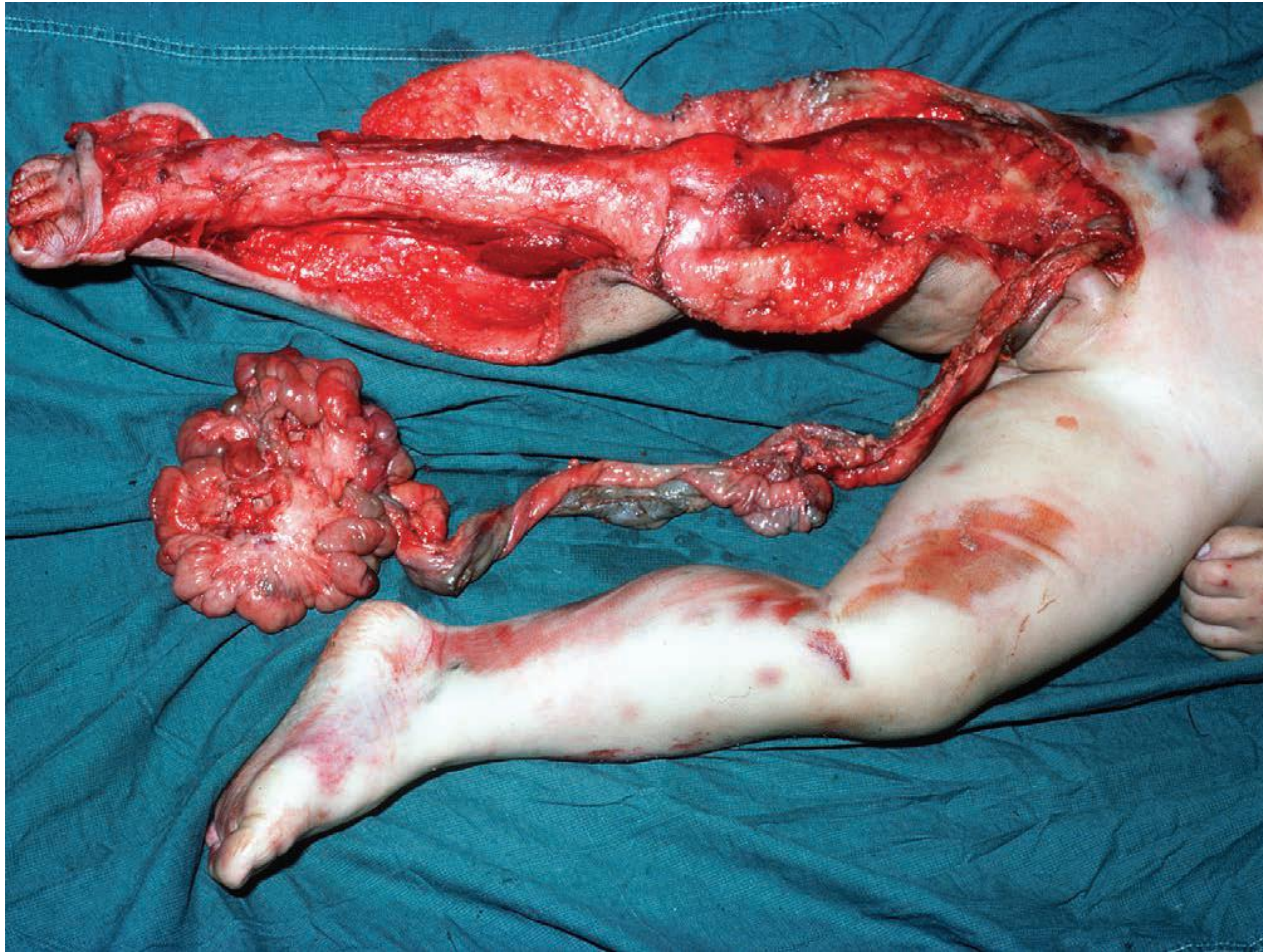
**Primary injury to a pedestrian struck by a car. There is damage to both legs at about the same level, with a compound fracture of the right leg. These are sometimes called 'bumper fractures'. The height of the injuries above heel level should always be measured at autopsy**



**Abrasions and laceration at knee level in a pedestrian struck by a car bumper. Their anterior position indicates that the victim was facing the vehicle at the moment of contact, but this may be a last-instant turn during final awareness of the car's proximity.**



**Injuries caused by being run over by a bus. The large rotating wheel has 'flayed' the right leg, stripping the skin and subcutaneous tissues from the muscles. The passage of the adjacent double wheel over the abdomen has extruded the intestines through the perineum**



**A patterned injury in a pedestrian struck by a truck. The circular bruise and abrasion over the front of the left shoulder are from a headlamp rim. There is also a well demarcated imprint around the left eye from some other projection on the vehicle.**



**Primary pedestrian injury. The pattern is caused by the bumper bar striking the leg. The height from the heel should always be measured for the police to compare with the vehicle – though during extreme braking, many vehicles will dip down at the front, thus lowering their bumper height**



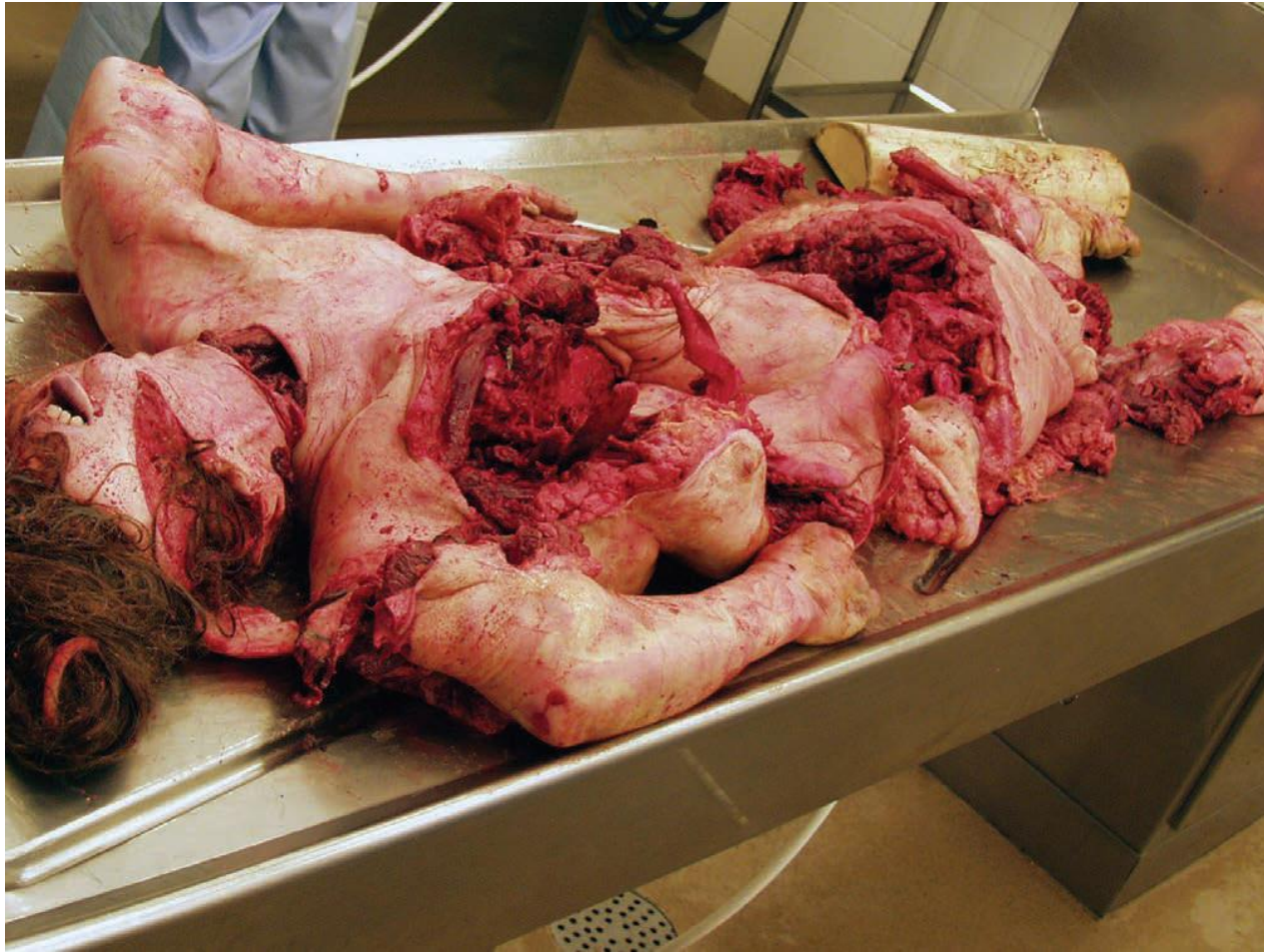
**Intradermal bruising on the forehead of a live boy who was found wandering in the street with amnesia for recent events. He had been struck by a 'hit-and-run' car, which left identifiable tyre marks on the skin. An astute casualty officer had a photograph taken as the marks faded in a few hours.**



**Intradermal bruising reflecting the tyr tread pattern.  
Note the bruising is of the 'valleys' and not the 'hills'  
in the tread.**



**Extensive disintegration of the body that has been run over by a train.**



## الحروق **Burning**

- Damage to the tissues arising from the application of heat, which is either dry or wet heat and commonly encountered in forensic pathology, and sometimes provides a challenging problem in the distinction between ante-mortem and post-mortem burning, which may have serious criminal aspects.

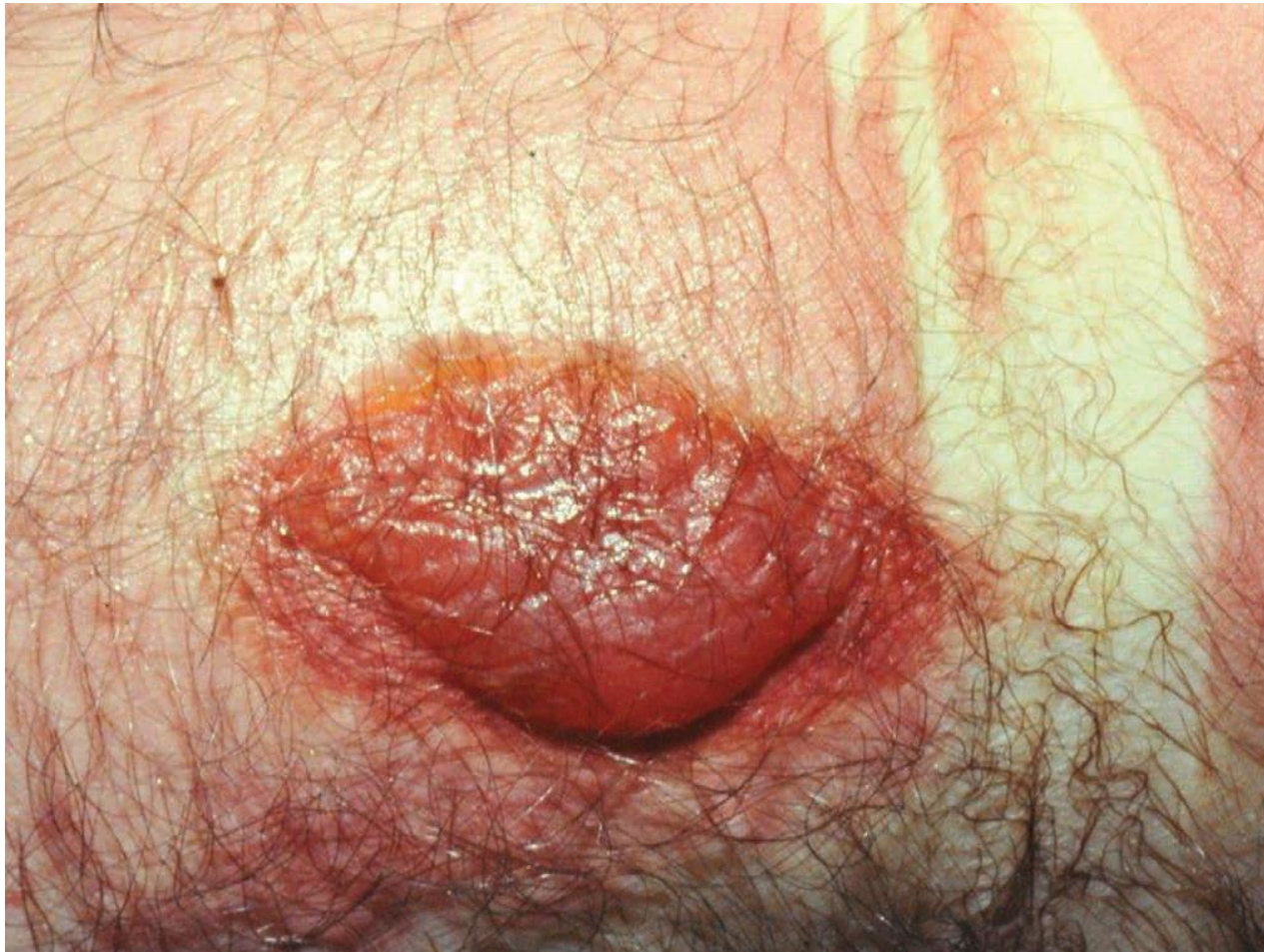
**Scalds or wet burns in a child accidentally left in a hot bath while her mother went to answer the telephone. This illustrates that time, as well as temperature, is a factor in causing heat damage to skin. The child died some days later from an intercurrent chest infection.**



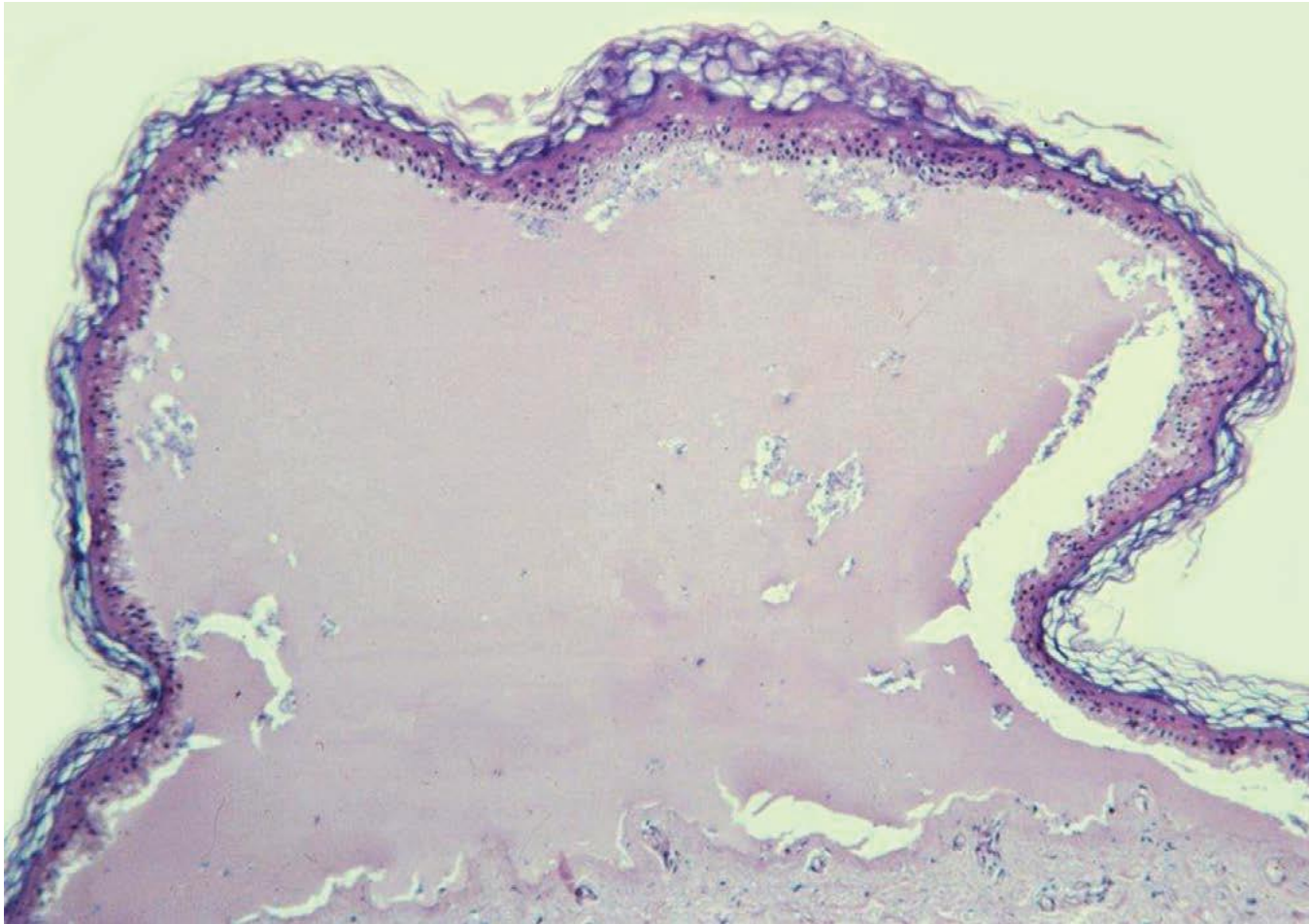
**First- and second-degree burns on the right thigh and scrotum of a 5-year-old diabetic child, who had been treated by a 'quack', who had promised the parents to cure the child by hot baths. Death was caused by the untreated diabetes.**



**A second degree burn in a house fire victim. Note the pink colouration of the hypostasis due to carbon monoxide poisoning and the vertical pale pressure marks produced by clothing**



**Haematoxylin-eosin-stained histological section of a second degree burn showing a blister filled with eosinophilic liquid covered by a thin layer of epidermis**



**Body of a 42-year-old male found dead in the steam room approximately 8 hours after having gone alone to sauna. Blood alcohol concentration 2.3 per mille; urine alcohol concentration 3.2 per mille. Due to the long heat exposure, a 'parboiled' appearance with patchy loss of epidermis due to skin slippage was found when the body was recovered and showing post-mortem drying of the lesions.**



**Second- and third-degree burns and singeing of hair on a suicide who doused himself with petrol and set himself on fire**



**Post-mortem smoke soiling and superficial burns on the leg of a house-fire victim who died of smoke inhalation. Note the complete protection of the skin, which had been covered only by a sock.**



**Heat flexures of the limbs, part way towards the 'pugilistic attitude' formed when the arms are raised higher. The elbows, knees and wrists are strongly flexed because muscle contraction is stronger in the flexor groups.**



**Charred body at the scene of a fire showing the pugilistic attitude' and post-mortem skin splits on the chest.**



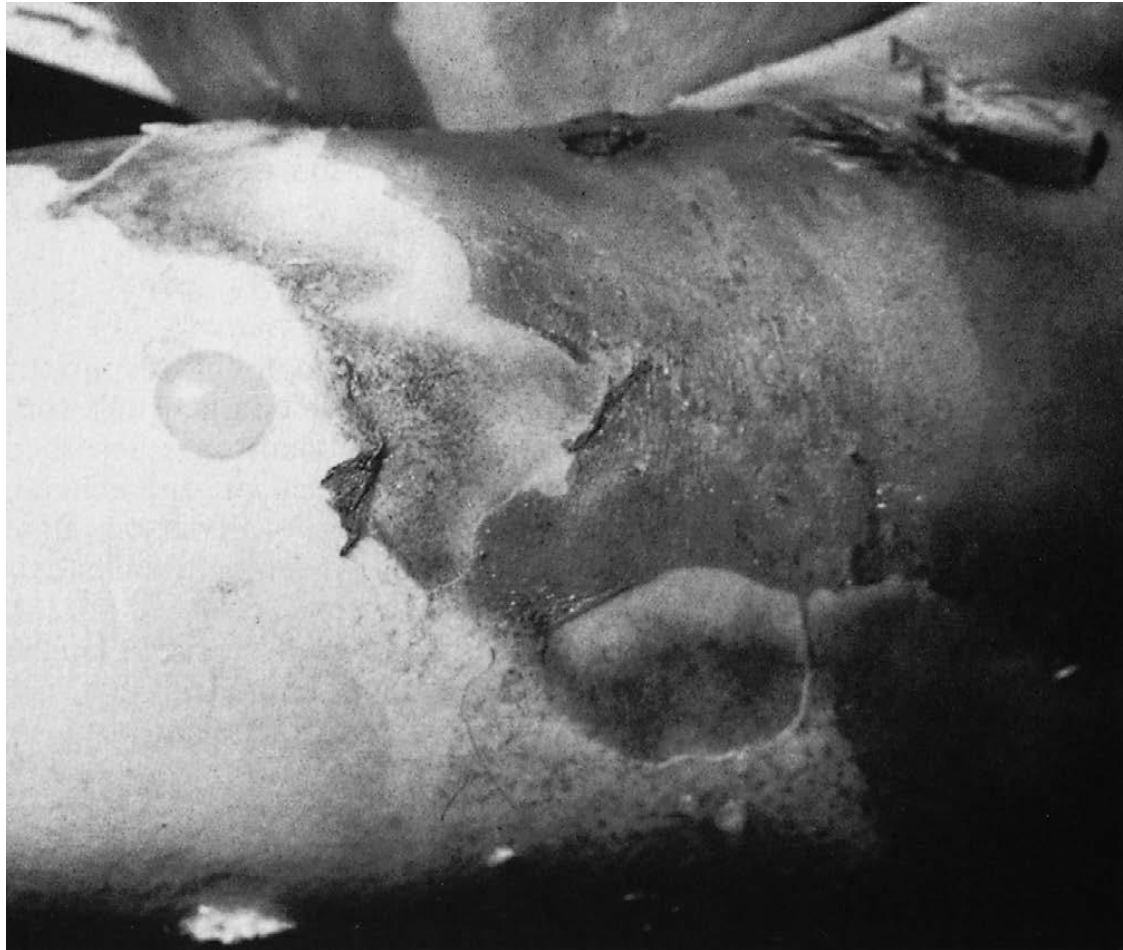
**Post-mortem injuries caused by heat simulating head injuries. The fire service were concerned about an apparent preconflagration assault, but such skin splits are commonly seen as a result of heat contracture of the tissues. The scalp on the top of the head has been burned through and the skull is charred. Beneath this is a spurious 'heat haematoma', sometimes confused with a traumatic extradural haemorrhage**



**Post-mortem burns in a victim recovered from a house fire. Note the raised right arm caused by heat contractures. The left forearm has burnt up to the elbow and there is extensive skin splitting on the left brachium and shoulder area. The left side is charred but the pelvis has been better protected by clothing.**



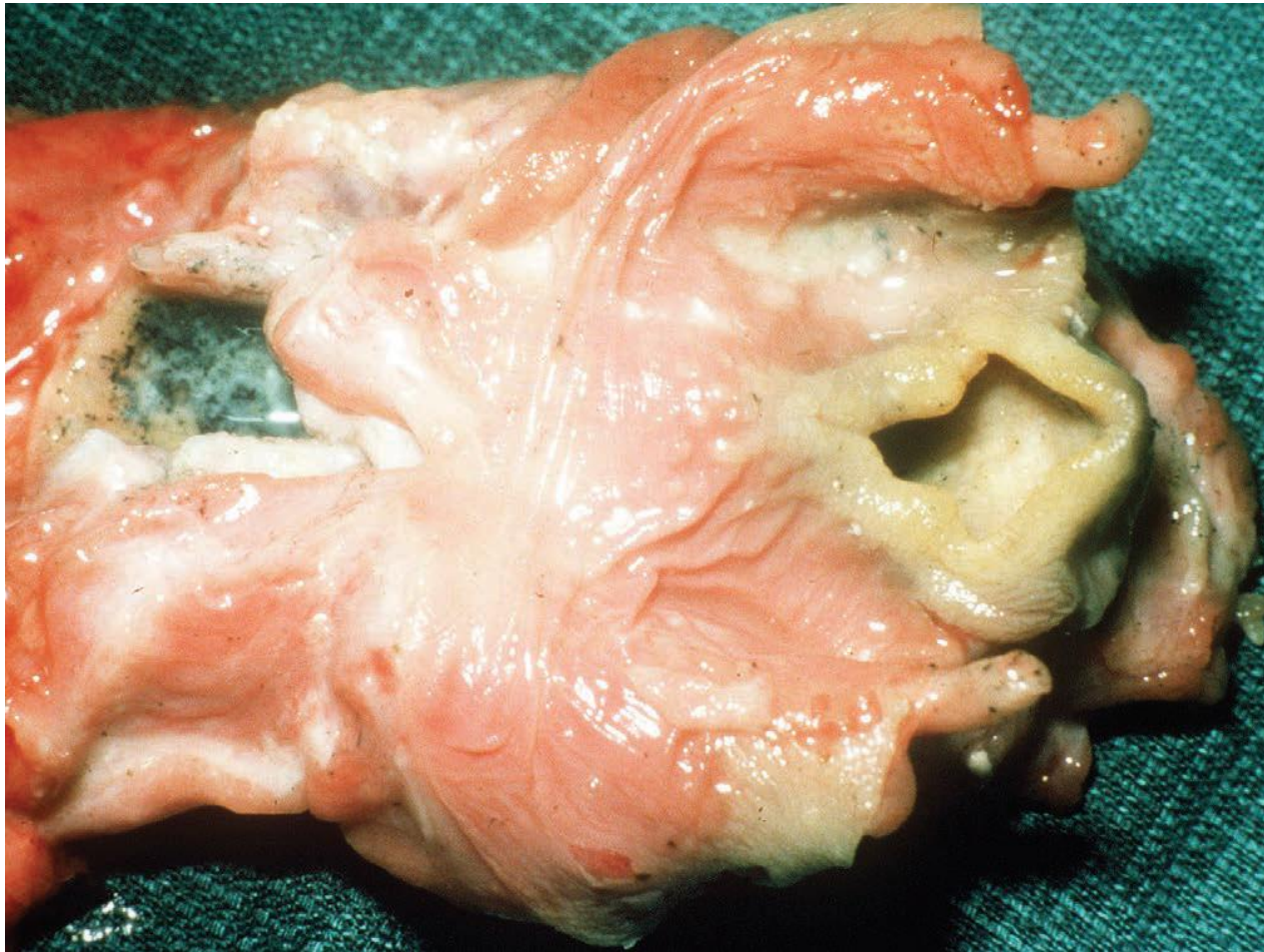
**It can be difficult or impossible to differentiate between ante-mortem and post-mortem burns when they are sustained near to the time of death. Here the blister with no erythema at the base could either be post-mortem or ante-mortem, as reddening of the margins and adjacent skin can occur for at least 1 hour after death. It is preferable to call doubtful lesions 'peri-mortal'.**



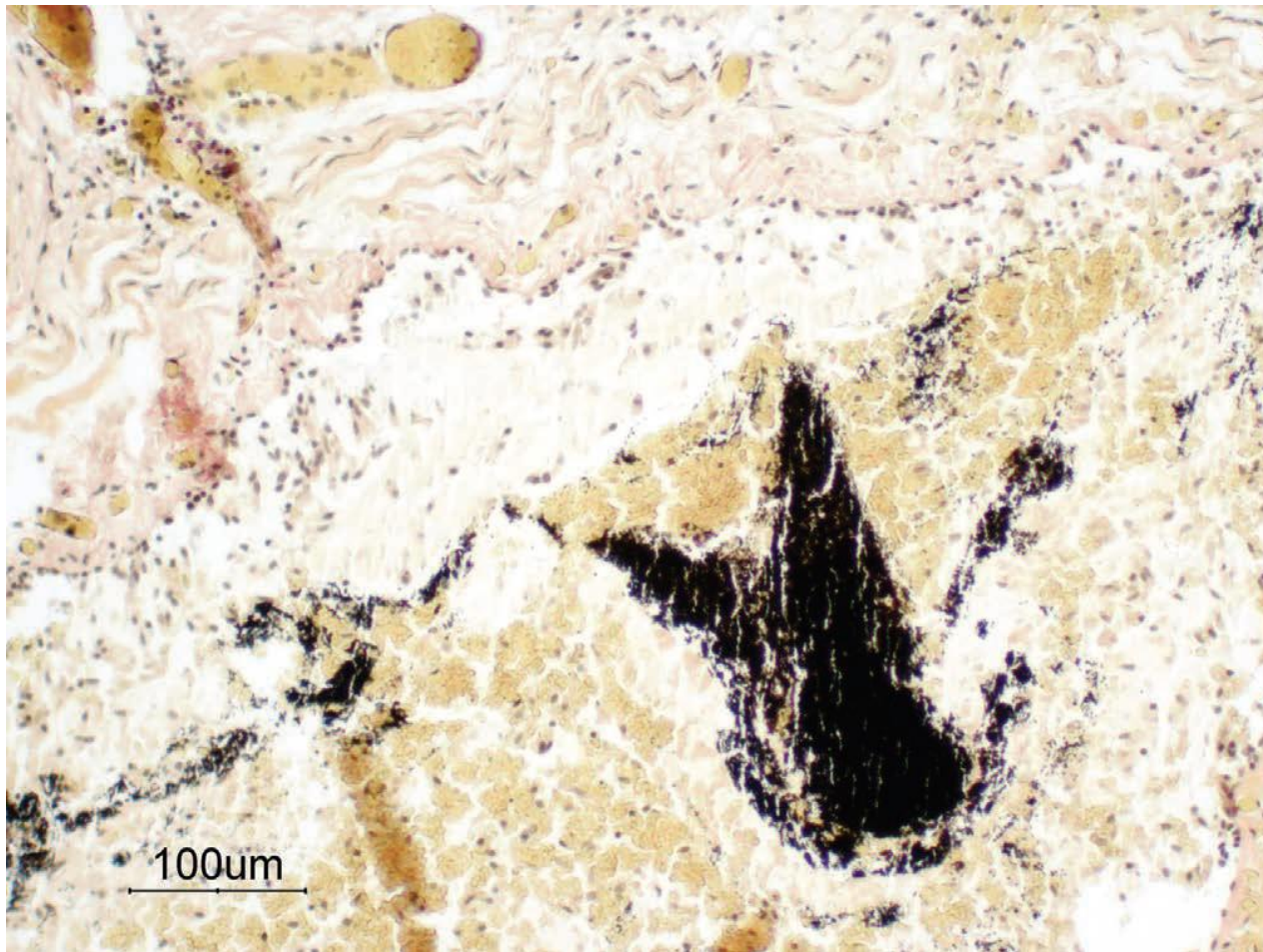
**Post-mortem burn on the arm and chest caused by a hot-water bottle being left over the heart in an attempt at resuscitation. The lesion is sharp-edged, there is no erythematous margin, and the surface is brown and leathery from post-mortem drying.**



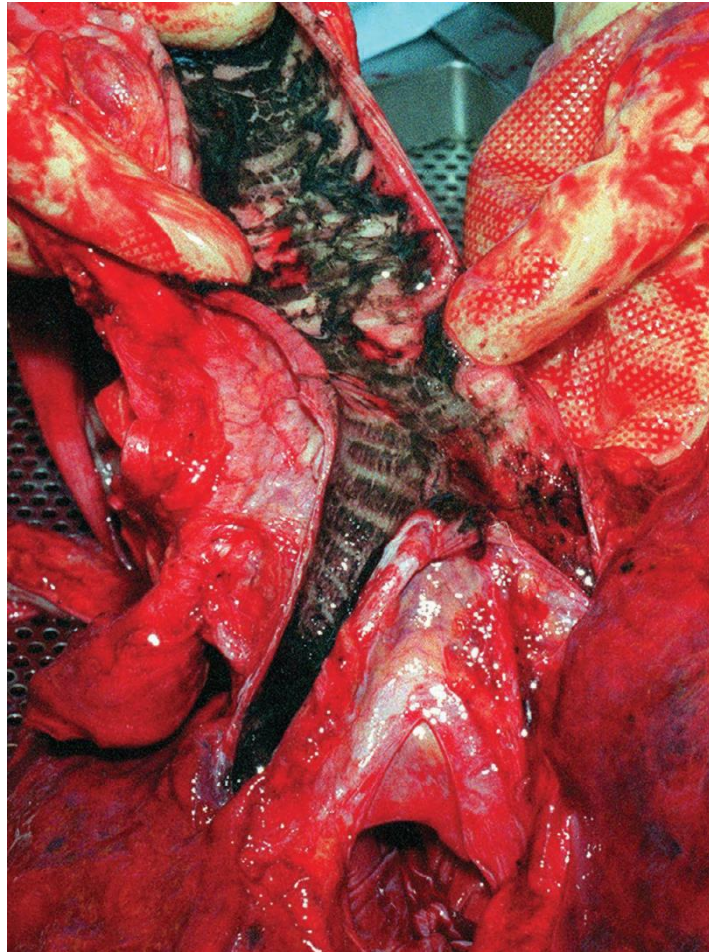
**Larynx of a house-fire victim showing heat blanching of the epiglottis and glottal entrance from breathing hot gas. The lower cut end of the trachea shows copious soot-containing mucus, also indicating respiration during the fire.**



**As small bronchus from a fire victim, showing histological evidence of soot deposition, together with desquamation of the epithelium and plugging with cellular**



**Soot in the tracheal mucus, a sign of breathing while the fire was in progress. Though soot can passively reach the glottis after death if the mouth is open, it cannot reach the lower air passages in any significant quantity. Histology of the smaller bronchi offers complete proof of active respiration.**



**Soot in oesophagus of a house-fire victim indicating respiration during the fire.**

