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. 14, NO. 2 · JULY – DECEMBER 2013
Downloaded from www.anilaggrawal.com · ISSN 0972-8074 (Online) · https://www.anilaggrawal.com/ij/vol_014_no_002/papers/paper008.html

Patient Drowns In Own Blood- A Case Report Of A Preventable Death

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CITE THIS ARTICLE

Sharma L, Sirohiwal BL, Paliwal PK. Patient Drowns In Own Blood- A Case Report Of A Preventable Death. *Anil Aggrawal's Internet Journal of Forensic Medicine and Toxicology* [serial online], 2013; Vol. 14, No. 2 (July – December 2013): [about 6 p]. Available from: https://www.anilaggrawal.com/ij/vol_014_no_002/papers/paper008.html

ABSTRACT

Blood aspiration is a significant forensic finding. Massive bleeding from facial injury may go unnoticed, especially in patients with impaired consciousness, because blood is swallowed.

We present a case of a 30 year old male victim who suffered cranio-facial trauma in a criminal assault. The patient was admitted in a multi-specialty hospital; surgery for both cranio-cerebral and facial trauma was performed. The patient's condition deteriorated on the 2nd post-operative day and the patient expired with no clue. Autopsy revealed an undiagnosed bleeder in the oral cavity which led to blood aspiration in the respiratory tract; chocking was the eventual cause of death. This case highlights the need of being aware of such conditions especially in victims of poly-trauma as missed diagnosis of such 'trivial' looking injuries may have catastrophic outcomes. It is a classic example of a preventable death.

Keywords: Facio-maxillary trauma; bleeders; aspiration; airway; pre-hospital care

INTRODUCTION

Maxillofacial trauma is any physical trauma to the face. It can involve soft tissue injuries such as burns, lacerations and bruises, or fractures of the facial bones such as nasal fractures and fractures of the jaw, as well as trauma such as eye injuries. Symptoms are specific to the type of injury; for example, fractures may involve pain, swelling, loss of function, or changes in the shape of facial structures. (1)

Facial injuries have the potential to cause disfigurement and loss of function; for example, blindness or difficulty moving the jaw can result. Although it is seldom life-threatening, facial trauma can also be deadly, because it can cause severe bleeding or interference with the airway; thus a primary concern in treatment is ensuring that the airway is open and not threatened so that the patient can breathe. (2)

By itself, facial trauma rarely presents a threat to life; however it is often associated with dangerous injuries and life-threatening complications such as blockage of the airway may occur. The airway can be blocked due to bleeding, swelling of surrounding tissues, or damage to structures. Burns to the face can cause swelling of tissues and thereby lead to airway blockage. Broken bones such as combinations of nasal, maxillary, and mandibular fractures can interfere with the airway. Blood from the face or mouth, if swallowed, can cause vomiting, which can itself present a threat to the airway because it has the potential to be aspirated.[22] Since airway problems can occur late after the initial injury, it is necessary for healthcare providers to monitor the airway regularly. (2)

Case history

A young male was admitted in the Accident & Emergency Department of a multi-specialty Hospital with history of a hit & run accident on a highway of 2 hours duration. As the patient was comatose and GCS was 10/15 on admission immediate resuscitative measures were initiated. Once airway management had been completed and all hemorrhage sites controlled, definitive management of bone and soft tissue injuries resulting from maxillofacial trauma were sought for and managed operatively. The mandible had been fractured through and through just left to the midline and wire-banding was done by the oro-maxillary surgeon. The patient's condition improved for about a day after which he was taken off cardio-respiratory support and shifted to the general ward. Sudden respiratory embarrassment ensued shortly thereafter and the patient expired on the third day of his admission. The case was referred to our facility for autopsy on request of the relatives.

Autopsy findings

General autopsy findings: The autopsy was commenced after studying the bed head ticket and investigations of the deceased. The dead body was of a male individual of slight built. Rigor mortis was well developed all over. The injuries described in the clinical history sheet were over the head and face which correlated with the autopsy findings. Evidence of surgical intervention was evidenced in the scalp and cranium. The viscera were pale on cut section.

Specific autopsy findings: There was a stitched wound over the lips, both upper & lower. On dissection, the underlying tissues showed effusion. There was a through and through fracture of the mandible somewhat left of the mid-line. Oro-maxillary repair had been done by wire-banding. A blood soaked gauze piece was found in-situ. No bleeder could be visualized in the vicinity of the fracture though blood was seen trickling and collecting in the oral cavity. On reflection of the tissues of the left side of the mouth, another fracture was seen through and through the mandible at the level of the 2nd molar (the hospital record showed no mention of this 2nd fracture, nor was it reported in the x-rays done on the patient. The blood collection was traced upwards to the left Inferior labial artery which was ruptured with blood oozing out. Further dissection of the internal neck structures was carried out. The laryngeal-tracheal lumen was filled up by a dark red blood clot which occluded the lumen completely. It was clear that the treating doctors missed this bleeder and fracture leading to disastrous consequences. [Figures 1-5]

DISCUSSION

Respiratory tract obstruction due to a blood clot may result in life threatening ventilatory impairment. Ball valve blood clot obstructions of the airways are rare. A ball valve blood clot acts as a one-way valve, allowing near normal air entry into the airways, but completely blocking expiration. (3) Airway management problems are not confined to the early stages of 'triage' or to the resuscitation of the patient. Morbidity and mortality of in-hospital trauma patients often result from critical care errors. The most common critical care errors are related to airway and respiratory management. (4, 5) Gruen et al studied 2594 trauma mortality patients in order to identify patterns of errors contributing to inpatient deaths. They found that failure to intubate, secure or protect the airway was the most common factor related to patient mortality, responsible for 16% of inpatient deaths. (5) Hutchinson et al have addressed six specific situations associated with maxillofacial trauma, which may adversely affect the airway which included Hemorrhage, either from distinct vessels in open wounds or severe nasal bleeding from complex blood supply of the nose, which may also contribute to airway obstruction. (6)

In a case in which blood aspirated into the respiratory tract after blunt injury to the head, the autopsy surgeons found large amounts of aspirated blood (hemorrhage) more marked on the right side with lumens of trachea and bronchi have large amount of aspirated blood.

A medical error is a preventable adverse effect of care, whether or not it is evident or harmful to the patient. This might include an inaccurate or incomplete diagnosis or treatment of a disease, injury, syndrome, behavior, infection, or other ailment. (7) Taking this argument further, another way to describe this death could be an ‘active failure’ on the part of the team of doctors attending the patient. (8) So in totality, the instant case described is a classic example of a medical error leading on to a preventable death consequent to active failure on the part of the doctors.

Figures



Figure 1. Autopsy photograph showing blood in trachea



Figure 2. The whole clot of blood after removal from trachea



Figure 3. Repaired fracture of mandible



Figure 4. Undiagnosed fracture of mandible with clotted blood



Figure 5. The ruptured infra-labial artery along with the undiagnosed fracture of the mandible

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