

## Control Bleeding of Injured Branch of the Facial Artery in the Emergency Room

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### Abstract

#### Introduction

Fatal bleeding of the facial area could be uncommon in emergency room. However, it is crucial to reach the diagnosis early to avoid the serious consequences of the hemorrhage even if it is rare.

#### Case Report

32 years old, male, medically free, and not on medications, came to the emergency on foot after he was involved in assault incidence 30 minutes before his arrival to the hospital. He sustained an injury to his face at the right side of the upper and lower lip by a knife that led to a huge wound and continuous bleeding since the time of the injury. After evaluating the area, the source of bleeding

noticed from the injured upper lip. It appeared as a pulsatile bleeding that gives an evidence of arterial injury. Oral cavity filled significantly with blood and that was cleared by suction during the time of the patient presence in the treatment room. Decision made to close the upper lip first with 2.0 vicryl deep layer and with 2.0 silk outer layer which are relatively large in size and that might not give the optimum cosmetic result but for achieving the mechanical secure of the tissue especially bleeding control was the concern at that moment. Local anesthesia xylocaine with epinephrine 1:100,000 was injected. Bleeding stopped immediately after closing the wound of the upper lip. Then, the wound of the lower lip suture completed. Approximately 650 ml of blood loss has been estimated since the patient attended the hospital.

### **Conclusion**

Although it is rarely to find a significant bleeding that derived from the facial region. However, patient who sustain an injury by a sharp tool at the face should not be delayed in both diagnosis and treatment because blood vessels of the face anatomically are located superficial. Therefore, it is liable to be injured and bleed massively. Intravenous fluid, local anesthesia with vasoconstriction and layered closure with a large size of suture "2.0" is a practical approach to control bleeding of the facial area in emergency room for avoiding the consequences of hemorrhage.

### **Introduction**

Fatal bleeding of the facial area could be uncommon in emergency room. However, it is crucial to reach the diagnosis early to avoid the serious consequences of the hemorrhage even if it is rare [1].

Hemorrhage can be defined as a massive blood lose from the injured blood vessels. It could be clinically unremarkable such as damaging of small vessels under the skin which is consequently causing hematoma. However, in some cases bleeding can be critical that might leads to a significant changing of the patient status including fluctuations in the vital signs that alter the level of consciousness [2].

Classification of hemorrhage can be either external or internal. Bleeding that sourcing from outer part of the body consider as an external. On the other hand, the Internal bleeding usually requires a comprehensive approach in the suspected situations. It needs collecting information that include history, clinical examination, laboratory tests, radiographs, and frequent observation of the vital signs [2].

### **Case Presentation**

32 years old male medically free and not on medications came to the emergency on foot after he was involved in assault incidence 30 minutes before his arrival to the hospital. He sustained an injury to his face at the right side of the upper and lower lip by knife that led to a huge wound and continuous bleeding since the time of injury. Glasgow coma scale was 15/15 at the time of attending the hospital. Emergency physician tried to control bleeding with pressure but it remained active. Maxillofacial on-call doctor contacted for further assessment and management. Intravenous line inserted and fluid given along the patient stay in the emergency room.

After assessment of the patient and evaluating the injured site, pulsatile active bleeding has been noticed from the upper lip as it gives an evidence of arterial injury. Oral cavity filled significantly with blood and cleared by suction during the time of the patient presence in the treatment room. Decision made to close the inner layer of the upper lip with 2.0 vicryl and with 2.0 silk suture of the outer layer which are relatively large in size and that might not give good cosmetic result but for the purpose of achieving the mechanical secure of the tissue especially control of bleeding was the concern at that moment. Local anesthesia, xylocaine with epinephrine 1:100,000, was injected around the wound. Bleeding stopped immediately after close the laceration of the upper lip. Then, closure of the lower lip has been completed [figure: 1]. Approximately 650 ml of blood loss has been estimated since the patient attended to the hospital that indicated to the risk of bleeding when branches of facial artery injured with a sharp object [Figure: 2].



*Figure 1: photo shows patient situation before and after treatment*



**Figure 2:** *The container of the suction shows a significant amount of blood that lost from the patient*

The vital signs monitored and they were all in the normal range. Patient stayed in observation room four hours for reassessment. CBC requested to look at the hemoglobin and hematocrit level before patient discharge. Hemoglobin level was 13.3 g/dl and hematocrit level was 44%.

## Discussion

The lesson learnt from this case is that facial artery and its branches should be checked after any injury to the face especially that caused by sharp tools as early as the patient attend to the emergency room. Therefore, the early intervention can be carried out to save patient from a hemorrhage and its consequences.

The superficial part of the face supplied by the facial artery which is a branch of the external carotid artery. The artery bends over the body of the mandible towards the midline of the face as it goes up. The pulse sensation of the facial artery could be felt as it crosses the mandible. The artery passes superiorly in oblique angle along the cheek towards the oral commissure then goes parallel to the nasal structure and ending at the medial canthus of the eye and there it is named “angular artery” [3].

Control bleeding could be achieved using mechanical, thermal, chemical techniques. The conventional approach for hemostasis such electrocautery, suturing, compression, or ligatures. Other newer methods using chemical products include: Surgicel, Hemotase, Tachosil, Tissel, Gelfoam, Merocel [4].

Fatal hemorrhage of the face is known as bleeding associated with facial injury or maxillofacial operation that leads to hypovolemic shock, heart rate more than 100 per minute “tachycardia”, systolic blood pressure less than 100 “hypotension”, and dropping in a hematocrit to 24 % or hemoglobin level to 8 g/dl. Therefore, in some cases transfusion is necessary as recent advance trauma life support (ATLS) recommended. The crucial step of controlling facial bleeding is to recognize it first. Sometimes the blood might be swallowed by the patients and this might delay the early diagnosis and the adequate intervention. The infrequency of facing fatal bleeding from the maxillofacial region make it difficult to standardize the management. In fact, few studies have been discussed this topic. However, it was highly challenge due to the limitation in number of patients with fatal facial hemorrhage [1].

Severe hemorrhage in maxillofacial that could not be controlled by conventional methods might requires angiography followed by embolization or sometimes it can be managed with external carotid artery ligation [5].

## Conclusion

Although it is rarely to find a significant bleeding that derived from the facial region. However, patient who sustain an injury by a sharp tool at the face should not be delayed in both diagnosis and treatment because blood vessels of the face anatomically are located superficial. Therefore, it is liable to be injured and bleed massively. Intravenous fluid, local anesthesia with vasoconstriction and layered closure with a large size of suture “2.0” is a practical approach to control bleeding of the facial area in emergency room for avoiding the consequences of hemorrhage.

## Disclosure

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