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Case Report

A KNIFE INJURY IN THE MAXILLOFACIAL REGION – A CASE REPORT

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ABSTRACT

Background: Head injuries are not so uncommon in emergency medicine. Generally, separate areas of the face and skull are affected. Some situations are challenging, especially when the traumatic foreign bodies are still inside tissues. So, every single clinical case should be thoroughly described to serve as a basis for an operative method and protocol creation for a therapeutic approach in future injuries of this type. In the current communication, we intend to report our experience with an incident of a stab injury in maxillofacial surgery.

Methods: A middle-aged male patient with a stab wound in the face underwent surgical removal of the knife under intubation anesthesia in emergency conditions.

Results: The postoperative period was uneventful. The patient was discharged on the fifth day with satisfactory early postoperative results.

Conclusions: Together with the anatomical specifics of the region, the surgery for knife removal is more complicated and riskier than usual. On the other hand, exactly rich blood supply determines quick and uneventful wound healing.

Key words: maxillofacial injury, stab wound

INTRODUCTION

Injuries in the maxillofacial region and head are commonly a result of trauma, road traffic accidents, suicides, and murders (1). Some situations are challenging, especially when the traumatic foreign bodies are still inside tissues. Vital structures like large blood vessels and nerves should always be considered in surgery planning. These characteristics make traumatic stab injuries to the facial and cerebral cranium a type of trauma with a frequent fatal outcome (2). Therefore, we assume it is important for the surgery practice to inform clinicians about such cases and the approach that is applied as support for the preparation of guidelines. We present a case of a middle-aged man who was stabbed in the face with a knife. (**Figure 1**) During treatment, he was conscious at all times. As an emergency, X-ray examination was performed to specify the direction of the knife blade and its length. (**Figure 2**)

Figure 1. Clinical appearance of a patient with a knife stab wound in the right maxillofacial region.

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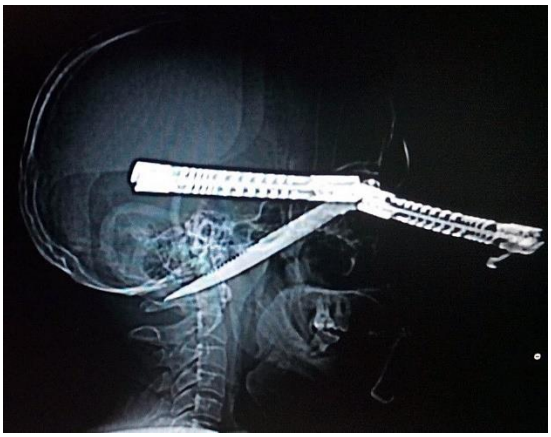

Figure 2. A skull profile X-ray demonstrated the course of the knife inside tissues and showed its serrated blade.

CASE DESCRIPTION AND RESULTS

Following informed consent signed by the patient, basic clinical examinations and paraclinical tests determining the patient's general condition and anaesthesia risks (ASA 2), the knife was removed under intubation anaesthesia by additional tissue dissection on the side toward the serrated surface of the knife to overcome the jam that occurred between the knife surface and surrounding tissues. While removing the knife, care was taken to avoid rocking or zigzag movement and the knife was retrieved back from the same trajectory. Thorough debridement of the wound with the removal of hematomas was performed. Following proper hemostasis, antiseptic cleaning, and a drain placement inside the tissue, the operative field was thoroughly closed. (**Figure 3**) Tetanus vaccination was administrated. An intravenous amoxicillin/clavulanic acid 875/125 mg, metronidazole 500 mg, and dexofen 50mg/2 ml were prescribed postoperatively for three days. The drain was removed on the second day. The postoperative period was uneventful. The patient was discharged on the fifth day.

Figure 3. The patient with drainage after surgery.

DISCUSSION

Publications on head and maxillofacial penetrating injuries are insufficient, and most treatment algorithms are based on case reports and case series (1). Commonly, the proper clinical evaluation and treatment of such cases require an interdisciplinary team. When investigating a stab injury to the head, the medical examiner should pay attention to the following: type of injuries; the affected regions and organs; the shape, size, length, and depth of the injuries; the traumatic agent; its force and velocity; the amount of blood loss; and the patient's consciousness and general condition (3). Knives are the usual objects that may cause penetrating injury in civilians (1). Because commonly they are metal and radiopaque, even plain X-rays help in identifying the extent of the trauma, potential retained pieces of foreign bodies, haemorrhages, extended tissue oedema, and depth of penetration (1).

The management strategy for these traumas, followed also in the presented case, is primarily surgical (4). Its main goal is to remove the traumatizing foreign body safely, debride the damaged tissues, tackle hematomas (5), and thoroughly close the wound to prevent postoperative fluid leak, protect from infections, and achieve rapid primary healing (6). While removing the traumatic agent, care should be taken to avoid rocking or zigzag movement and pull the object back from the same trajectory of entrance inside the tissues (7).

Most of the authors recommend prophylactic antibiotics as a mainstay of treatment because penetrating objects are contaminated. The prophylactic antibiotics should cover a combination of Gram-positive, Gram-negative, and anaerobic bacteria. The duration of the therapy is still controversial. There is a clear consensus that antimicrobial prophylactic therapy should be continued for at least 72 hours after surgery (8). Tetanus vaccination should also be considered according to the World Health Organization protocol for vaccination (9).

CONCLUSIONS

Penetrating injuries in the maxillofacial region and head are common, especially in traumatic events, road traffic accidents, and criminal cases. The most important prerequisite for the management of such cases is linked to a complete clinical examination and thorough analysis, as well as radiologic imaging for

assessment of the direction of the traumatizing agent and the condition of affected tissues. Good understanding of blood supply and its variations is fundamental to the proper surgical approach associated with a safe intervention followed by an uneventful postoperative period.

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