Extensive cut wound of the face – case report

Rozległa rana cięta twarzy – opis przypadku

Kornelia Woźniczko¹, Maria Molga-Magusiak², Anna Rzepakowska², Robert Bartoszewicz²

¹Student Research Group at the Department of Otorhinolaryngology, Head and Neck Surgery at the Medical University of Warsaw, Poland
²Department of Otorhinolaryngology, Head and Neck Surgery at the Medical University of Warsaw, Poland; Head: prof. Kazimierz Niemczyk PhD MD

ABSTRACT:
Introduction: The cut wounds of the facial and ear area must be carefully assessed and adequately treated in order to assure proper healing and avoid complications.

Case report: We present a case report of a 57-year-old female with a 25 cm laceration on the left side of her face. The patient was cut with a knife and as a result the parotid gland, the parotid duct, the tongue, the corner of the mouth, the masseter muscle, the cartilaginous part of the external acoustic canal and the auricle were damaged. The facial nerve was not damaged. All of the injuries were managed, including end-to-end anastomosis of the Stenon duct and layered closure of the auricle.

KEYWORDS: auricle, facial cut wound, parotid duct, parotid gland

INTRODUCTION

One of the regions of the body most vulnerable to suffering assault-related injury is the face [1]. An attack may occur with a variety of tools, which affects the nature of the wound and wound management. Cut wounds of the face are most often caused by broken bottles and glasses, while knife wounds are relatively rare [2]. Buccal injury may cause damage to the parotid gland with the excretory duct and branches of the facial nerve. Injury can also involve the masseter, and a deeply penetrating wound may result in trauma to intraoral structures. Extensive facial wounds may also involve the auricle. In patients with such injury, it is recommended to perform thorough examination and prepare a wound management plan.

CASE REPORT

A 57-year-old female was admitted urgently to the Clinic due to a transverse laceration on the left side of her face (Fig. 1.). The wound length was about 25 cm. Clinical interview with the patient revealed that she had been stabbed by her cohabitant. On admission, her blood alcohol concentration was 2 per mille. Due to the injury, the parenchyma of the parotid gland and the Stenon duct were cut. Damage was also inflicted to the tongue, the left corner of the mouth, the oral mucosa on the left side, the skin of the cheek and the masseter, the cartilaginous part of the external acoustic canal and the auricle, which was cut across the entire width. Physical examination did not reveal any damage to the facial nerve – nerve function was described as symmetrical, with a bilateral score of I on the House-Brackmann scale. Radiographic examination of the skull did not reveal any damage to the craniofacial bone structures or the head.

The team on duty decided to manage the wound in the operating room. The wound was cleaned and rinsed copiously with saline solution, and the masseter and masseteric fascia were repaired with absorbable sutures. Identification of the parotid duct was followed by end-to-end anastomosis. The damaged parenchyma of the salivary gland was revealed and managed with absorbable sutures. The wound on the tongue was managed and the corner of the mouth was reconstructed with sutures (Fig. 2.), the skin on the cheek was sewn up (Fig. 3.), and the auricle and cartilaginous part of the ear canal underwent layered repair (Fig. 4.). Two filters were placed in the wound and a pressure dressing was applied due to significant swelling in the cheek region. The perioperative and post-operative periods were uneventful. The patient was
discharged home on the third postoperative day with the recommendation to continue antibiotic therapy for seven consecutive days.

During the follow-up visit 7 days after discharge, the skin sutures were removed. The parotid gland healed properly. Function of the facial nerve was assessed as bilaterally symmetrical and normal (grade I on the House-Brackmann scale).

**DISCUSSION**

Head and neck injuries account for up to 69% of all assault-related wounds [2]. At the same time, assault represents one of the main causes of facial and head injuries [3]. In a large proportion of cases, participants of the assault have previously consumed alcohol, including the victims. According to the literature, from 46 to 60% of assault victims had previously consumed alcohol [4]. According to Bolt, the most commonly injured areas include the cheek, lips, and forehead [3], while Shepherd points to the middle third of the face, especially on the left side [1].

There are numerous reports of knife wounds to the face, although the literature mainly contains descriptions of stab wounds, while cut wounds are less frequent. Due to smooth edges and low skin traumatization, they seem to be easy to treat. However, it is important to remember about deeper tissues. If the trauma is located in the buccal area, salivary gland, Stenon duct, facial nerve and transverse facial nerve should be carefully assessed to ensure that the damaged structures are adequately managed before wound closure [5].

Penetrating injuries of facial region running along the line between the fragment of the auricle and the middle part of the upper lip lead to damage to the salivary gland duct or the gland itself. Taking into account the location of parotid trauma, three regions can be distinguished: A – covering the parenchyma, B – relating to the duct running superficially to the masseter and C – the section of the duct leading through the buccal muscle to the buccal cavity [6, 7].

When treating the cut flesh of the salivary gland, the wound should be cleaned, closed with absorbable sutures and managed with a pressure dressing. Antibiotic prophylaxis is also recommended [8]. During dissection, particular attention should be paid to the course of the facial nerve in the parenchyma of the gland. It is essential to assess the mobility of all facial regions supplied by nerve twigs prior to elective surgery in order to assess the need for exploration and reconstruction. Extensive wound with significant tissue damage may require a microscope and intraoperative monitoring of seventh nerve function [8, 9]. Damaged facial nerves call for reconstruction performed as soon as possible by restoring the continuity of the nerve. For this purpose, methods such as end-to-end anastomosis, autologous nerve graft or fusion with another motor nerve are used. The choice of method depends on the location and extent of damage [10].

The injured site of the excretory parotid duct can be localized by introducing a probe or a catheter from the excretory duct’s side. Another means of identifying a damaged proximal part of the duct is to compress the salivary gland and observe where saliva will begin to flow. Also, a small amount of methylene blue can be applied into the outlet of the Stenon duct [5, 7].

There are several methods for re-supplying a damaged excretory duct. The method of choice is anastomosis of two parts by means of a nylon suture with a thickness of 8–0 or 9–0, as in the described case. In more difficult-to-manage injuries, it is recommended to insert the stent into the tube in order to maintain its patency [11, 12]. The stent is attached to the buccal mucosa and removed.
approximately 10–14 days after the procedure [6]. If the tissue damage prevents anastomosis, the proximal part of the duct should be sutured into the oral mucosa through the buccal muscle to create a new outlet. It should be borne in mind that this method shortens the duct pathway and increases the risk of ascending infection from the oral side [5, 13]. In the case of profound damage, parotidectomy or deliberate atrophyzation of the salivary gland may be required by duct ligation, pressure and the use of drugs that inhibit saliva production [7].

Unrecognized injury to the excretory duct or its delayed supply may lead to the formation of fistulas and salivary cysts, atresia of the excretory duct, and recurrent inflammation [6, 10], therefore, early diagnosis of trauma and immediate treatment are crucial, if the patient’s condition allows for it.

The presented case also involved damage to the masseter and the auricle. The cut muscle and the fascia must be managed with end-to-end repair. Ear injury requires careful examination of the auricle, external auditory canal, and eardrum. Major injuries are managed with layered repair, and the cartilage and perichondrium are sutured. Unnecessary sutures in the cartilaginous layer must be avoided as these can cause necrosis and constitute a potential gateway for infection. A complication secondary to injuries in this area may be stenosis of the external auditory canal. In order to avoid this, it is recommended to place an expansive dressing inside the duct for several days [14, 15].

CONCLUSIONS

Wounds in the buccal area can damage the parotid gland and the excretory duct. These structures require proper care in the shortest possible time after injury. Failure to recognize the injury, as well as incorrect or delayed management, can lead to complications such as fistulas and salivary cysts. Patient examination after a facial trauma in the preauricular region must involve special care in assessing the function of the facial nerve. Cut auricles should be managed with layered sutures and the external auditory canal must protected against stenosis.

REFERENCES


