

## Case Report

## Globe rupture caused by a camel bite

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## ABSTRACT

Camel bites are uncommon. They are more common during the rutting season where male camels become more aggressive. Herein, we report a unique case of a 25-year-old man who was repeatedly bitten to his face and neck by an aggressive camel that resulted in left eye evisceration, parotid duct, and facial nerve injury. To our knowledge, Globe rupture caused by a camel bite has not been previously reported.

## Introduction

Animal bite injuries vary according to the geographical distribution, behavior, and anatomy of animals. Human injuries caused by camel bites are relatively rare. They are more common during the rutting season where male camels become more aggressive [1]. Due to the complex mechanism of camel bites, it is usually associated with high morbidity. The head and neck sustain frequent and severe injuries [2]. Injuries may involve facial wounds, skull fractures, intracranial bleeding, and cervical neurovascular injuries [1,2]. Herein, we report a unique case of a patient who sustained multiple camel bites to his face and neck that resulted in left eye evisceration, parotid duct injury, and facial nerve injury. To the best of our knowledge, this is the first case of globe rupture caused by a camel bite.

## Case report

A 25-year-old male camel caregiver presented to the Emergency Department of Al-Ain Hospital 1 h after being bitten several times in the left side of his head and neck by a 15-year-old male camel. The injury occurred in the farm while the patient was trying to feed the camel. The camel turned aggressive and strongly and repeatedly gripped the patient's face between its jaws, lifting the patient up in the air while shaking and throwing him forcefully to the ground. These bites were repeated four times to the patient's face and neck. The patient was able to rescue himself only after putting his headscarf inside the camel's mouth.

On clinical examination, the patient was fully conscious, alert, but in severe distress. His blood pressure was 159/91 mm Hg. Pulse rate was 47 beats per minute, and body temperature was 36.5 °C. There were multiple puncture and laceration wounds on the left side of his face and neck (Fig. 1).

Inspection of the facial wounds showed a swollen left eye with lacerations on the eyelid and eyebrow with extensive subconjunctival hemorrhage. An approximately 13 cm lacerated wound on the left side of the face extended from the temporal region to

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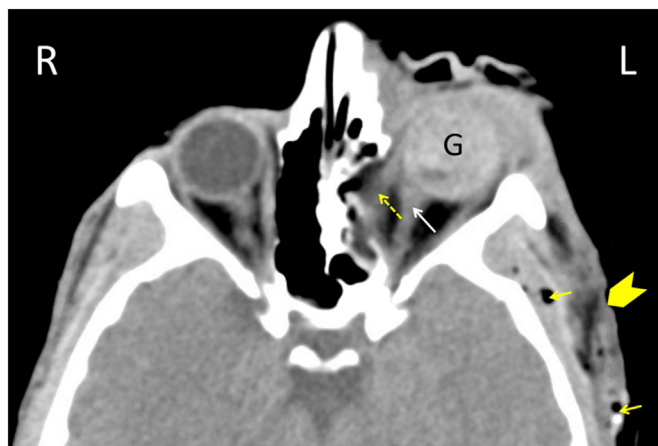


**Fig. 1.** Facial injury caused by repeated camel bites to the face. The long transverse cut wounds (white arrows) are caused by the 6 front incisors of the lower jaw of an adult camel while the other small and puncture wounds are caused by the canine teeth (yellow arrow heads). (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

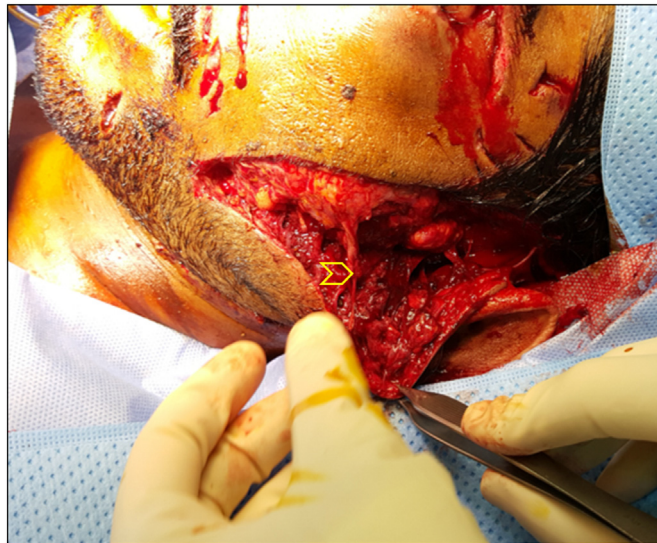
the left chin with surrounding skin erythema. There was bleeding from the left ear with a laceration of the crus of the left helix. Neck inspection showed a 7 cm laceration in the left submandibular area with no obvious injury to the adjacent great vessels (Fig. 1).

The patient was given 0.5 ml of tetanus toxoid vaccine intramuscularly and was admitted to the hospital. A trauma computed tomography (CT) was performed to detect other injuries. Maxillofacial CT without contrast showed a comminuted fracture of the left nasal bone, a fracture of the medial orbital wall with sagging of medial rectus muscle into the fracture space, medial rectus muscle hematoma, fracture of lacrimal bone and displacement of piece of it into the orbit, left preseptal hematoma, complete opacification of left intraocular content, crystalline lens was not identified, and the eye appeared as one chamber with loss of the eyewall integrity (Fig. 2). Although the left optic nerve appeared stretched, there were no obvious CT findings for its injury. CT angiographic study of the neck arteries showed no evidence of active extravasation, dissection or thrombosis.

Prophylactic antibiotic using intravenous ceftriaxone and metronidazole was commenced. The patient was taken to the operation room, and the wounds were explored and debrided under general anesthesia. Upper lid (2 cm) full thickness laceration, eyebrow (3.5 cm), lateral to lateral canthal area laceration and inferior bulbar conjunctiva were repaired. There was a massive corneal laceration with expulsion of the eye content. Salvaging the left eye was not possible, and evisceration of the eye was performed. Intraoperative examination of the left cheek wound site (Fig. 3) revealed macerated muscle with a deep wound penetrating the underlying superficial musculoaponeurotic system. The left Parotid duct was partially transected over the masseter muscle (Fig. 3). This was approximated and primarily repaired using Nylon 8/0 sutures, and the parotid gland capsule was also sutured. The buccal branch of the facial nerve could not be identified. The nasal bone fracture was managed with closed reduction. The lacerations of the



**Fig. 2.** Brain CT scan showing a complete opacification of the left eye globe (G), an intact optic nerve (white arrow), fracture of the medial orbital wall with herniation of medial rectus muscle (interrupted yellow arrow), cut wound on the left side of the face (yellow arrow head), and subcutaneous air (yellow arrows). (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)



**Fig. 3.** Intraoperative image showing partially transected left parotid duct (yellow arrow heads). (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

left auricle and the left submandibular region were closed in layers.

On a postoperative day 6, the patient developed a small left-sided sialocele which has rapidly progressed into a fistula. This was managed with Hyoscine tablets, transdermal scopolamine, and pressure dressing. A favorable response was observed after three days.

The patient was discharged home on day 9 in a good general condition and was placed on Clindamycin 600 mg 4 times a day, Hyoscine 20 mg 3 times a day, and Erythromycin 0.5% ophthalmic ointment. A follow up at one month showed a satisfactory scar, completely healed salivary fistula, and a residual weak upper lip function. The patient gave written informed consent for publication of his clinical images in this manuscript.

## Discussion

In many areas of Asia and Africa, camels are used as a source of milk, food, and transport. Camels are the cause of 85% of animal-related injuries in our city [3]. Our patient was injured by a male camel in December. The majority of camel bites occur during the rutting season, which is from December to March, during which male camels become irritable, difficult to handle, with unpredictable behavior.

Camel bites can cause serious puncture wounds and lacerations. Deep body structures can be severely injured despite the superficial appearance of the wound. Facial bone fractures, skull fractures, and brain injuries may result from camel bites to head and face [2,4,5]. Severe injuries such as carotid artery occlusions and brain infarctions can result from camel bites to the neck [1]. The severity of injuries caused by camel bites is mainly attributed to its unique dentition. A mature camel has 34 teeth including four sharp and long canine teeth [6]. Canine teeth caused the puncture wounds, while the six incisor teeth of the lower jaw caused the long cut wounds in the neck and below the mandible in our patient.

The mechanism of camel bite injuries is complex. This includes penetrating and crushing injuries, by the camel's sharp teeth and strong jaws, and blunt injuries when victims are picked up, shaken and thrown by the camels [1,3]. Globe injury caused by a camel bite has not been reported before. Our patient experienced repeated bites that resulted in multiple facial fractures and deep structure injuries involving his left eye and cheek. The camel deeply fixed its jaw in the patient's face using grinding movement that destroyed surrounding bones and intraocular contents and caused globe rupture of the left eye.

In the present case, the parotid gland and parotid duct injury occurred because the penetrating injury of the cheek was along the line joining the tragus of the ear to the midportion of the lip [7]. Because the parotid duct and the buccal branch of the facial nerve run close to each other, any trauma to the parotid gland or duct should raise suspicion for facial nerve injury. Our patient had weakness of the buccal branch of the facial nerve at follow up.

Parotid duct injuries are best repaired early at the initial surgical exploration of the wound to assure an optimum outcome [8]. Sialoceles and fistulas are the most common complications following injuries to the parotid region. Our patient developed sialocele six days after the early repair of the parotid duct injury. Similar to others [9], this was managed conservatively with Hyoscine tablets, transdermal scopolamine, and external pressure dressing with a favorable outcome.

In summary, our case demonstrates the complexity of camel bite injuries to the face. This may result in serious long-term sequelae affecting the a patient's quality of life. Extreme care should be taken when dealing with camels, especially during the rutting season.

## Consent

The patient gave his written consent for reporting his case and publication of his clinical images.

## Conflict-of-conflict statement

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