

Involuntary human bite to the eyebrow

Saiju R¹, Georgescu D²

¹Tilganga Eye Center, Kathmandu, Nepal, ²Moran Eye Center, University of Utah, Salt Lake City, UT, USA

Abstract

Human bites to the face are very rare and only one case of human bite to the eyebrow has so far been reported¹⁻⁴. The final functional and cosmetic result of reconstruction mainly depends on the size of the injury, the viability of the tissue and the promptness of surgical intervention. We here present one case of human bite to the eyebrow that resulted in complete avulsion and loss of tissue due to delayed presentation to the hospital. The lesion was reconstructed in two stages with good functional and decent cosmetic outcome. Unfortunately long term follow up was not possible for this patient.

Human facial bites are rare occurrences with only a handful of cases reported so far in the English-speaking medical literature²⁻⁴. Even more so, only one case of human bite to the eyebrow has ever been reported¹. Surgical management of these cases is focused on saving as much tissue as possible for the best functional and cosmetic outcome while the same time avoiding infection. In those cases involving an avulsed piece of tissue the chance of successful replantation depends mainly on the presence or absence of vascular supply to the tissue. Avulsed flaps attached through a well vascularized pedicle have a higher chance of survival than free flaps. However, advances in microsurgical techniques have increased the success rate of free flap replantation which still depends on the presence of good arteries and veins in the flap for anastomosis.

If the avulsed tissue is not viable, various closure techniques can be used to improve the functional and cosmetic outcome.

Here we present a case of unintentional human bite to the eyebrow with complete loss of tissue that was repaired successfully in two stages with good functional and decent cosmetic outcome.

Case report

A 25 year old Nepalese male was referred to the Oculoplastic clinic of the Tilganga Eye Centre, Kathmandu, Nepal 48 hours after he sustained a human bite injury to the right brow. The patient was bit while asleep by his male roommate who was also asleep at the time of the incident. The assault was unintentional and attributed to a "bad dream". The bite involved the center portion of the right brow with complete avulsion

of a piece of tissue 2.5 cm by 2.0 cm (Fig.1) The patient presented within 24 hours to the emergency room of the Nepal Medical College Hospital, Kathmandu, where the wound was primarily repaired in one layer with interrupted 4.0 proline sutures. The avulsed piece of tissue that was brought with the patient in a piece of gauze was already contaminated and necrosed and could not be used in the repair. The patient was referred to our facility the following day for further wound exploration and revision for functional and cosmetic purposes.

At the time of examination in our office, the patient presented with a poorly apposed "J" shaped wound (Fig 2). There was no sign of infection or wound dehiscence at that time. The brow had been shaved at the time of primary repair in the emergency room. His visual acuity was 6/12 OD and 6/6 OS. There was a moderate degree of blepharoptosis in the right eye with good levator function.

The sutures were removed and the wound was explored. Above the brow, the wound involved skin, subcutaneous fat tissue, frontalis muscle and orbital orbicularis oculi muscle. Below the brow, the laceration stopped anterior to the septum involving only the Roof and the brow fat pad. The wound was cultured for both aerobes and anaerobes and copiously irrigated with normal saline and 5% povidone iodine solution. Closure was then done directly, in two layers with buried interrupted subcutaneous 5.0 vicryl sutures and interrupted 6.0 silk skin sutures after proper debridement of the wound

Correspondence

Rohit Saiju, MD
Tilganga Eye Center,
Kathmandu, Nepal
E-mail: rohitsaiju@hotmail.com

edges. The patient was put on oral prophylactic antibiotic (Dicloxacillin 500 mg QID) for seven days as well as topical Chloramphenicol antibiotic ointment TID. The sutures were removed 7 days (Fig 3). All cultures were

negative and the patient did not develop any infection. Unfortunately the patient failed to return for his 6 week follow up appointment so further evaluation was not possible.

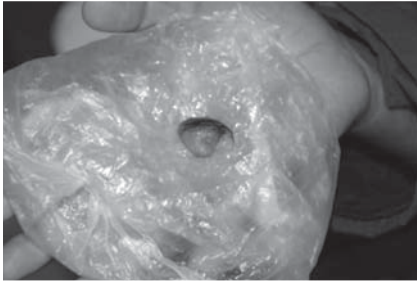


Fig1: A piece of brow tissue after avulsion.



Fig 2: Brow wound after primary closure.

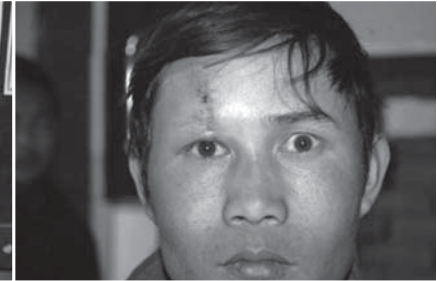


Fig 3: The brow wound after exploration and reconstruction.

Discussion

As with other human bites to the face, the final functional and cosmetic outcome depends on the extent of the injury, whether replantation can be successfully done and the occurrence of secondary infection. Our patient presented to the emergency room more than 24 hours after the injury occurred so replantation was not an option because the avulsed tissue was not viable. Successful replantation, after proper debridement, was previously reported for tissue avulsed up to 70 hours prior to surgical intervention³. However, the tissue brought by our patient was completely devitalized and dry and could not be used. Previous case series have shown that, even if the patient presents in a timely manner, replantation might still not be possible if good microvasculature for anastomosis cannot be identified¹.

Another common occurrence with human bites is anaerobic infection with pathogens from the oral flora of the assaulting person^{1,5}. Fortunately this did not occur in our patient and cultures taken at the time of wound revision failed to grow any aerobic or anaerobic bacteria. However, the patient was placed on Dicloxacillin antibiotic after the secondary repair.

Functionally, our patient achieved a good result mainly because the orbital septum was not involved and the levator function was intact. There was also no brow ptosis seen at the 7 day postoperative visit probably due to the thorough approximation of the frontalis muscle at the time of the revision surgery. Cosmetically our patient will most likely have a shorter brow on the right side since 2.5 cm of brow tissue was lost. This was however hard to assess at the 7 day postoperative visit since the brow was shaved in the emergency room and the cilia had not had enough time to grow back. Brow cilia sometimes do not regenerate after shaving but this

is controversial⁶. We recommend direct approximation without shaving whenever possible to avoid this potential complication.

In conclusion, we present a rare case of human bite to the eyebrow which resulted in excellent functional outcome and probably decent cosmetic outcome despite complete loss of the avulsed tissue. Unfortunately long term follow up was not possible for this patient.

References

1. Jeng SF, Wei FC, Noordhoff MS. Replantation of amputated facial tissues with microvascular anastomosis. *Microsurgery*. 1994;15(5):327-33.
2. Hindman HB, Srikumaran D, Halfpenny C, Hirschbein MJ. Traumatic globe luxation and enucleation caused by a human bite injury. *Ophthal Plast Reconstr Surg*. 2007 Sep-Oct;23(5):422-3.
3. Avram DR, Hurwitz JJ, Kratky V. Dog and human bites of the eyelid repaired with retrieved autogenous tissue. *Can J Ophthalmol*. 1991 Oct;26(6):334-7.
4. Serrano F, Starck T, Esquenazi S. Surgical treatment of human bites of the upper eyelid. *Ophthal Plast Reconstr Surg*. 1989;5(2):127-30.
5. Henry FP, Purcell EM, Eadie PA. The human bite injury: a clinical audit and discussion regarding the management of this alcohol fuelled phenomenon. *Emerg Med J*. 2007 Jul;24(7):455-8.
6. Dirckx JH. Shaving of eyebrows. *JAMA*. 1980 Jan 11;243(2):121.