

Management of Avulsion Injury of the Nose Due to a Human Bite Under Local Anesthesia with Intravenous Conscious Sedation: A Case Report

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Abstract

The present case illustrates the management of an avulsion of the nose due to human bite under local anaesthesia with intravenous conscious sedation. The human bite injury of the nose though relatively uncommon presents a challenge to the surgeon especially where treatment options are limited because of the poor financial circumstances of patient. This case shows that despite these challenges good results can be achieved by making good and prudent treatment decisions. Clearly, the nose is worth restoring given their functional, cosmetic and psychological importance.

Keywords: Avulsion; Human Bite; Nose; Conscious Sedation

Introduction

Nasal reconstruction may be required as a result of facial trauma, infection, congenital malformations or as a result of excision of neoplasms [1].

Human facial bite is not an uncommon occurrence with varying levels of frequency. Human bite injuries have been defined variously. Tomassetti, *et al.* (1979) defined human bite injuries as those injuries that occur when a person has been bitten by another person [2].

Human bites in the orofacial region are usually extraoral injuries with occasional reports of intraoral injuries [3]. The severities of the injuries are varied, ranging from simple lacerations to avulsive injuries with loss of vital tissue [4-6].

Most facial bite wounds are usually to the lips, the lower lip being the commonest site affected as reported in various studies [7-9]. The nose is rarely affected. The nose constitutes one of the aesthetic units of the face and therefore any deformity of the nose could be disfiguring. The deformity resulting from such injuries

could be very devastating to the patient both on a physical and psychological manner.

Human bite injuries carry the risk of being infected with bacteria from the oral cavity [2,6,7]. Prophylactic antibiotic cover is therefore advocated.

Human bites to the face present a surgeons challenge. This is more so when there is partial or total loss of important aesthetic subunits of the face like the nose, ears, lips and eyelids. Repair and or reconstruction of these structures are difficult.

Repair of the nose has its roots in ancient India. Various techniques are available for the repair of the nose. A thorough knowledge of the anatomy of the nose is essential in order to be able to carry out a good repair or reconstruction both in terms of aesthetics and function.

Also affecting the outcome of any nasal repair is the extent of the injury and the part of the nasal structure injured. The columella and the nasal tip are particularly difficult to repair.

I present a case of avulsive nasal injury due to human bite involving the nasal tip and columella.

Case presentation

Setting

Rivers state University Teaching Hospital Port Harcourt, is a tertiary health facility located in the heart of the bustling metropolis of Port Harcourt City in South South Nigeria. It receives referrals from other health facilities for patients requiring specialist oral and maxillofacial care.

The patient, an apprentice welder is a 23 - year - old male with an avulsion of the nasal tip and columella (Figure 1) He presented in our center a day after sustaining the injury. The cause of injury was a human bite to the nose during an altercation with a fellow apprentice at his place of work.

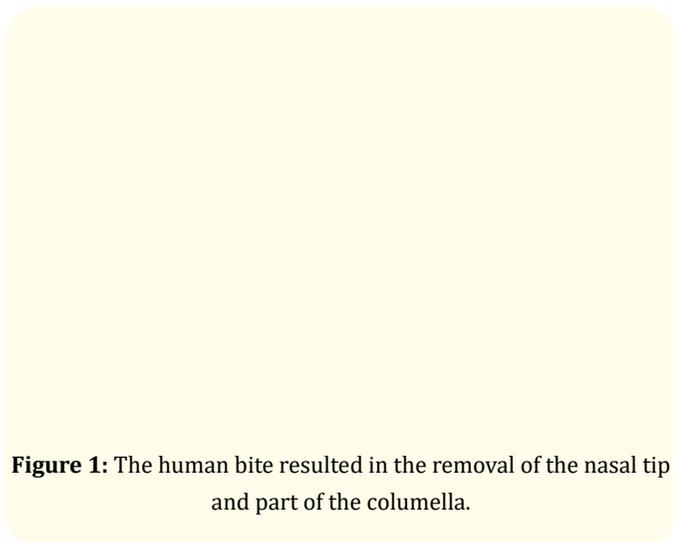


Figure 1: The human bite resulted in the removal of the nasal tip and part of the columella.

First aid management had been administered in a general medical Center before the patient was referred to us for specialist management. The wound was not visibly contaminated and didn't show any signs of infection.

Examination revealed an avulsive injury to the tip of the nose and involving the columella. The wound had ragged edges. The wound was dirty but uncontaminated. A tetanus toxoid injection had been given before the referral. Local measures to prevent infection were instituted and surgery planned.

The procedure was done under local anaesthesia with intravenous conscious sedation using intravenous diazepam titrated to the patient's needs based on the Verill's sign and intramuscular 30mg Pentazocine statim. Patient was scrubbed and prepared normally. 2% lignocaine plus 1:100,000 adrenaline was used to

achieve bilateral infraorbital nerve blocks. Infiltration was done locally around the edges of the wound. Incisions were made to raise a right nasolabial flap after proper measurements were made to ensure the flap was of adequate length to avoid tension. The flap was raised and mobilized medially to repair the defect and was sutured in place in layers using 4/0 vicryl sutures.

The resulting defect from the donor site was closed primarily in layers also using 4/0 vicryl sutures. The immediate postoperative condition was satisfactory and patient was very cooperative during the procedure (Figure 2).

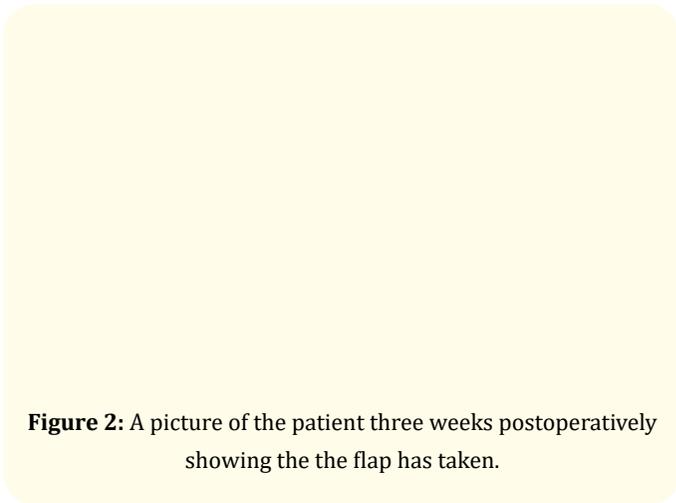


Figure 2: A picture of the patient three weeks postoperatively showing the the flap has taken.

Patient was discharged home after an hour of observation post operatively on broad-spectrum antimicrobial agent and analgesic and was seen daily for the first three days for dressings and weekly thereafter. The flap was assessed after three weeks and the pedicle was sectioned and the edges neatly sutured (Figure 3). These final sutures were removed after a week. Convalescence was unremarkable. The outcome was very satisfactory to both the patient and the operator.

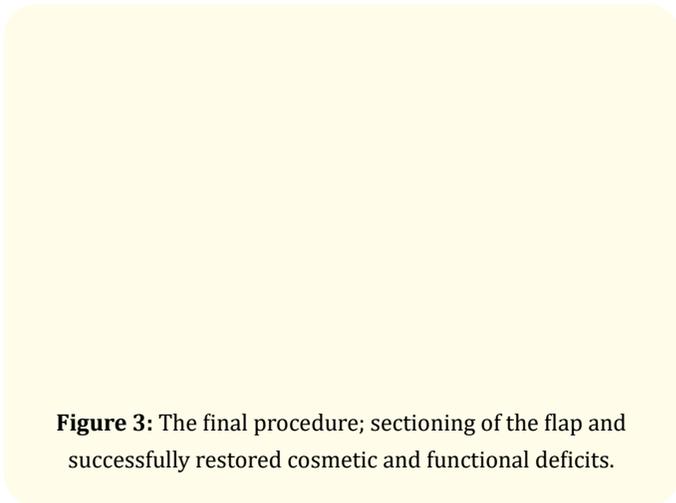


Figure 3: The final procedure; sectioning of the flap and successfully restored cosmetic and functional deficits.

Discussion

Human bites are usually serious injuries as they may result in infection, loss of function and gross disfigurement, resulting in both physical and psychological problems. From the foregoing it becomes obvious that the management of facial bite wounds is usually very challenging [10-12].

The Oronasal cavities hosts both aerobic and anaerobic bacteria giving human bite wounds a tendency towards infection [14,15]. Bacteria commonly isolated from infected human bite wounds are *Streptococcus pyogenes*, *Staphylococcus aureus*, *Proteus vulgaris* and *Pseudomonas aeruginosa*. Agrawal, *et al.* [6] described these infections as secondary, involving the vulnerable devitalised tissue at the margins of a bite wound. They also suggested that only the clinical presence of infection and not the delay of presentation of the patient indicates delayed closure. Leaving the wounds for delayed primary closure or healing by secondary intention with planned revision may increase the severity of scarring, deformity and functional impairment.

The goals therefore of reconstructive surgery include achieving wound closure, restoring anatomical landmarks and minimizing surgical revisions as well as psychological trauma. Accurate assessment of tissue loss and due consideration of reconstructive options are essential in order to achieve a successful outcome.

The nose is rarely involved in human bite injuries. It is also particularly difficult to repair especially when the nasal tip and the columella are involved. It is also compounded by the fact that majority of the patients presenting with bite injuries are also unable to pay for general anaesthesia and the attendant hospital stay. This is exemplified by this case that was an apprentice welder and was on no salary. These factors tend to add to the challenges faced by the surgeon, as one has to figure out how to intervene surgically at the least cost to the patient.

The ideal repair is that which utilizes nasal tissue in the procedure. This is often not practicable. The surgeon therefore has to rely on local flaps or composite grafts. The use of large auricular chondrocutaneous composite grafts for nasal alar and columellar reconstruction has been reported [1].

The only alternative that was therefore available to the author was local anaesthesia with intravenous conscious sedation. A combination of pentazocine and diazepam was used successfully. In

this case the patient remained cooperative and calm all through the duration of the procedure. The procedure was concluded albeit uneventfully.

The other advantage of using local anaesthesia is that the patient wouldn't require hospice. In this case the patient was discharged home after one hour of observation post operatively and was only required to come daily for dressings for the first three days and thereafter a patient relation was taught how to do the daily wound dressings. So the patient was able to recover at home and thus dramatically reducing the cost that would have been incurred if the patient had stayed in hospital.

Conclusion

Reconstruction of human bite wounds to the nose is challenging. These challenges are further compounded by the fact that a vast majority of the patients are poor and therefore unable to afford general anaesthesia and the attendant hospital stay.

The present case report shows the successful management of avulsion injury of the nose in a 23-year-old man with loss of the tip and columella using a nasolabial flap under local anaesthesia with intravenous conscious sedation.

This case shows that these challenges need not be a hindrance to carrying out reconstruction of such injuries. Using local anaesthesia with intravenous conscious sedation can mitigate these challenges. A very successful outcome can be achieved with no discomfort to the patient as shown in this case.

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