

## Nasal Tip Avulsion due to Dog Bite

Dear Editor,

The number of pets in homes has been increasing in recent years, and in consequence, the number of injuries caused especially by cats and dogs is increasing. Although most of these injuries are minor abrasions and scratches that do not require intervention, there are rare cases with more severe outcomes that require surgical intervention or reconstruction.

Bite wounds are injuries inflicted by an animal or human tooth. Animal bite wounds are among the most common reasons for visiting the emergency room. Dogs, cats, and humans, respectively, are often blamed for bite wounds.<sup>[1]</sup> Primary reconstruction is recommended in bite cases when there is no amputation. In amputated cases, replantation is a safe and effective method if the amputated piece is available; whereas advanced reconstruction techniques may be required if the piece is missing. In this report, we present the case of a patient who presented to the emergency room with a partially amputated nasal tip caused by dog bite and discuss the processes that should be followed in such situations.

A 36-year-old male patient with no other comorbidities presented to the emergency room with a nasal tip amputation due to dog bite. The patient's vital signs were stable. The amputated piece was brought to the emergency room in a bag of ice. The amputation involved the nasal tip and the skin of the proximal one-third of the columella. The nasal dorsum was partially lacerated [Figure 1]. The patient's account revealed that he had been evaluated in two different centers before presenting to our emergency room and was recommended to be followed up by dressing without surgical intervention because it was a case of animal bite. In the emergency room, the patient was administered analgesics, tetanus prophylaxis, and 1 g of cefazolin and then transferred to the operating room [Figure 2]. The wound was washed, and devitalized tissues were debrided. Care was given to preserve the maximum amount of tissue. Partial lacerations were sutured. The amputated piece was placed and cleaned in povidone-iodine and washed with isotonic solution and then adapted to the defect site. The wound was closed with tie-over dressing to ensure the full adaptation of the graft onto the defect site and the procedure was finalized. No complications were experienced in the early postoperative period. 2 × 1000 mg oral amoxicillin and clavulanic acid treatment was immediately started as recommended by the Infectious Diseases Department. Close monitoring of the dog that caused the wound was recommended for rabies evaluation. The patient was discharged on the 1<sup>st</sup> postoperative day and asked to return for follow-up examinations on the 3<sup>rd</sup> and 6<sup>th</sup> day. The tie-over dressing was removed on the 6<sup>th</sup> day, and the graft was seen to be well adapted to the defect site. The wound was followed up with daily fusidic acid cream dressing. Rabies vaccine was not needed since the dog did not show any

signs of the disease. Esthetic results were found of acceptable quality in the 3<sup>rd</sup>-month evaluation of the patient [Figure 3].

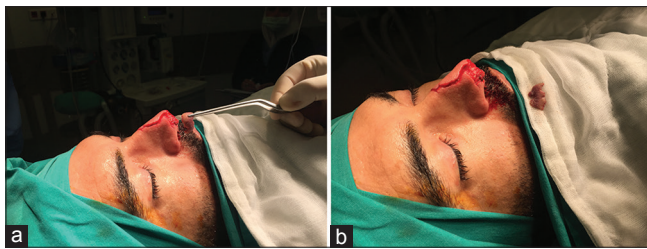
The nature of dog bites is mostly tear-type soft tissue injuries. The wound is usually contaminated with the flora of the animal's mouth. Therefore, infection is more likely compared to other types of injuries. While delaying the reconstruction and following-up with irrigation and dressing may be recommended because of this possibility, primary wound reconstruction should nevertheless be tried. The patient should be closely followed up, and removal of one or more sutures may be considered if an infection develops.<sup>[2]</sup>

Knowledge about the presence of rabies in the animal is very important in animal bites. 10%–20% of the humans bitten by dogs with rabies get infected. The face and neck regions are more susceptible to infection. Dogs with rabies can be infectious several days before they show symptoms, and the virus resides in the saliva of its host. Infection can occur even in abrasions that have contact with the dog's saliva. Its incubation period is 2–8 weeks in humans but shorter in dogs. Therefore, if the dog can be observed in the days after the incidence, this will give them time to start rabies injections in the patient.<sup>[2]</sup>

The first published account of nasal replantation reports a procedure performed by Fioravanti in 1570. It accounts of a man whose nose was cut off by a Spanish soldier in an argument. Fioravanti reported that he cleansed the amputated piece and bound it in place for 10 days and the replanted piece survived.<sup>[3]</sup> Fuleihan *et al.*, on the other hand, report to have successfully replanted an almost completely amputated nose. The authors suggest that cooling the amputated piece and adapting it onto the defect site, and treating the wound with anticoagulants, multiple incisions, and antibiotherapy is an effective method in such cases.<sup>[3]</sup>



**Figure 1:** View of the patient at presentation to the clinic



**Figure 2:** (a and b) View of the defect and avulsed piece in the operating room

As we did in our case, Miller *et al.*<sup>[3]</sup> suggest avoiding aggressive debridement since the viability of the underlying tissue supports coverage and structure in the presence of cyanosis and crusting in the postoperative period. The graft, even in the worst-case scenario, will act as biological dressing and prevent wound contraction.

Grafts are nourished by the plasmatic circulation, the spontaneous anastomosis of the vessels in donor and recipient tissues, and the penetrating vessels from the recipient tissue. Therefore, tissue thickness is an essential factor in graft nourishment. Bigger problems may arise in the nourishment of tissues that are farther than 1 cm from the recipient site.<sup>[3]</sup> As a result, smaller-scale amputations are more likely to survive.

Moreover, having the option of replantation will contribute to the psychological and emotional wellness of the patient. Patients will have more difficulty in accepting secondary wound healing or advanced reconstruction techniques instead of first giving a chance to replantation when the tissue appears pink and “lively.” They will be relatively more prepared both psychologically and emotionally for a flap procedure after the replantation option is tried and seen to be unsuccessful.<sup>[3]</sup>

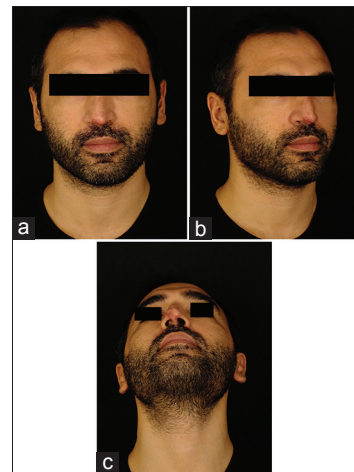
To summarize, wound reconstruction should be planned as soon as possible in nasal amputations due to animal bite. In many centers, as we have seen in our case, primary reconstruction is delayed with concerns of infection, and mostly, secondary wound healing is recommended in animal bite wound cases. However, we believe that successful results can be achieved with appropriate cooling, debridement, suitable surgical technique, and postoperative care in early replantation performed under appropriate conditions. We further believe that even with a failed replantation attempt, the final defect will become smaller, and the necessary secondary procedures will be less morbid.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that his name and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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Nil.



**Figure 3:** (a-c) Frontal, oblique, and bottom views of the patient in the 3<sup>rd</sup> postoperative month

### Conflicts of interest

There are no conflicts of interest.

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