



CASE REPORT

Management of Partial Ear Amputation due to Bull Attack: Case Report

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Summary

Unprovoked animal attack injuries in the facial region are not frequent in the emergency departments of Venezuelan hospitals, especially bull attacks, so there are no established management protocols. Injuries to the auricular pavilions, whether lacerations, avulsions or partial amputations, are wounds that require a detailed evaluation to make appropriate decisions for their approach, especially when talking about animal attack wounds, which require a detailed evaluation, adequate irrigation and cleaning of the wound to obtain a good postoperative prognosis. We present the case of a male patient who suffered a bull goring attack, generating multiple facial trauma where bilateral partial amputation of both pinnae was observed, wounds that were treated several hours after the incident with great success, repositioning both pinnae and restoring the function and aesthetics of the area.

Keywords

Pinna, Traumatic amputation, Multiple trauma, Face

to the diversity of their presentation, where multiple wound patterns and a high degree of foreign body contamination can be observed due to the kinematics of the injuries [1].

Injuries to the pinna, being a prominent organ, frequently occur in facial trauma, but are usually caused by mechanisms unrelated to animal accidents. Their treatment is focused on restoring symmetry and cosmetic disfigurement, and it is important to highlight the excellent prognosis of pinna wounds due to the rich vascularity of the area [2].

The management of these wounds in the emergency department requires adequate primary assessment, resuscitation and hemodynamic stabilization, removal of contamination by profuse irrigation and adequate exploration of the wound to decide on the most appropriate treatment [1].

Introduction

Animal attacks generate a considerable number of injuries as well as a high morbidity and mortality rate. Bull goring injuries, provoked or unprovoked, are frequently described in the literature, the most frequent injuries are rib fractures and superficial body lacerations, but injuries to the facial region are infrequent [1].

This type of injury occurs especially in rural areas and is much more frequent in the male sex in approximately 69% of cases. They differ from other types of injury due

Case Report

We present the case of a male patient who suffered a bull attack and presented partial amputation of the left pinna and complex laceration of the right pinna. The lower pedicle was preserved in the amputated pinna, so we decided to manage it by primary reinsertion, demonstrating successful reimplantation in the short and medium term with acceptable functional and aesthetic results.

A 66-year-old male patient from Miri-Miri, Falcon State, Venezuela with no important pathological history,

who suffered 04 hours prior to his admission a bull attack, he was transferred to the Dr. Adolfo Prince Lara Hospital in Puerto Cabello, Carabobo State, Venezuela, where in clinical evaluation showed partial traumatic amputation of the left pinna and complex laceration of the right pinna and left mandibular fracture so it was decided to take him to the operating theatre for damage control ([Figure 1](#) and [Figure 2](#)).

Under measures of asepsis, antisepsis, profuse irrigation was performed with 0.9% solution alternating with chlorhexidine gluconate 0.12%, approximately 120 cc were irrigated in total in each auricle, then the irregular and necrotic tissue was eliminated to perform tissue synthesis with nylon 5-0 "x" points to auricular cartilage at the base of helix, helix, auricular concha of left auricle to then perform the anatomical

reconstruction with nylon 6-0 and simple points in skin ([Figure 3](#)).

In the right auricle, tissue synthesis was performed with 6-0 nylon in the anterior and posterior lobe. Finally, intraoral soft tissue damage control of the mandibular fracture was performed. The patient was given intraoperative broad-spectrum intravenous antibiotic, also a unique dose of dexamethasone 16 mg and was maintained on intravenous antibiotic ampicillin/sulbactam for 7 postoperative days.

The wound was monitored every 4 hours for the first 48 hours to assess the vitality of the reimplanted fragment, and was kept under dressing every 48 hours, with bacitracin ointment and gauze dressings to cover the wounds.



Figure 1: Left ear partial amputation.



Figure 3: Immediate postoperative of left ear reconstruction.



Figure 2: Right ear complex laceration.



Figure 4: 21 days left ear evaluation.

On the ninth day in hospital, we observed areas of dehiscence in the skin and cartilage on the posterior part of the base of the helix of the left auricle, which was resutured with 5-0 nylon and managed with hydrogel dressings.

The patient was re-evaluated after 21 days and showed adequate healing of both pinnae with acceptable aesthetics and preserved function ([Figure 4](#), [Figure 5](#) and [Figure 6](#)).

Discussion

The pinnae are frequently injured structures due to their delicate anatomy and prominent position in the head, within them we can find simple or complex lacerations, hematoma formation, avulsive wounds to varying degrees where if there is a considerable loss or

detachment of tissue they can be defined as traumatic partial amputations [3].

Traumatic amputations of the pinna are rare injuries within facial trauma and represent a major challenge for the surgical and reconstructive approach for the surgeon [4,5].

Alterations in the pinnae can cause great aesthetic discomfort, which contributes to a negative impact on patients' self-esteem and quality of life [5]. It is necessary to take into account all the alternatives in the reconstructive area to restore the functional and aesthetic characteristics of the pinna, so that we can reintegrate patients to their daily activities as soon as possible.

Among the alternatives for the management of partial pinna amputations, there are classic methods such as microvascular reimplantation, primary reinsertion, composite grafts and the preauricular pocket technique proposed by Mladick and Carraway, as well as secondary reconstructive techniques using costal cartilage and postauricular flaps. Of these, there is no gold standard that guarantees the success and survival of the injured pinna, so it depends on the clinical evaluation of the lesion and the remaining pedicle for the choice of the appropriate procedure for pinna reconstruction [6].

D'Arcangelo, et al. conclude in their study that reattachment of the amputated pinna is a safe procedure as long as there is a survivable attachment pedicle for favourable cosmetic results [5].

Our article reports the management of a bilateral traumatic partial amputation of the pinnae caused by a bull attack, which was approached approximately 8 hours after the incident in view of the difficulty of access to primary care which increases the risk of reattachment failure. Despite this, it was decided to perform bilateral primary reattachment with suture under general anaesthesia and in an aseptic environment as adequate vitality of the involved segments of both pinnae was evident.

Gantz, et al. reported 2 cases of traumatic partial amputations with preservation of the inferior lobe pedicle, where they obtained 100% success in performing immediate reimplantation without microsurgery, concluding that it is a safe procedure with adequate functional and aesthetic results. They also mention that a skin bridge of 2.5 to 3 cm is adequate for vascular preservation of the reimplanted pinna [7].

Zhang, et al. determined that good hemoperfusion of the pedicle is a determining factor for the choice of treatment and suggest that in animal bite wounds or severely damaged wounds that have also had a prolonged time to management, primary reattachment is not the technique of choice for reimplantation, but instead recommend microvascular reimplantation.



Figure 5: 21 days right ear evaluation.

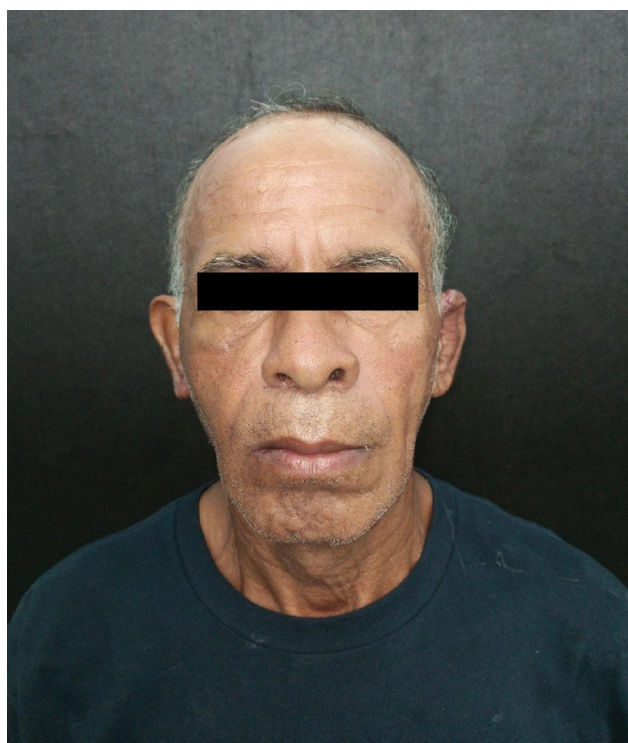


Figure 6: Patient's frontal photograph.

In our case we decided on primary reimplantation because of the presence of adequate tissue perfusion and also because of the logistical difficulty in performing microvascular reimplantation [6].

The rich vascularity of the pinna allows primary reinsertion with a high success rate [3]. We can conclude from our case report that by obtaining survival of the amputated segments in both pinnae, primary reinsertion is a fairly safe procedure for early management of partial pinna amputations in the emergency department.

It is recommended to perform studies with larger samples in view of the lack of evidence in this regard, to evaluate the effectiveness of treatment of this type of injury in the short, medium and long term, which will allow us to establish an appropriate management protocol to obtain better aesthetic and functional results.

Conflicting Interest

We does not have any conflicting interest.

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