

Case Report

Pinna reconstruction in a 2-year-old: a case report

Pallavi Gupta^{1*}, Piyush Gupta², J. S. Randhawa³

¹Department of ENT, Indian Naval Hospital Vizag, India

²Department of Surgery and Trauma, Indian Naval Hospital, Vizag, India

³Department of Surgery and Paediatric Surgery, Indian Naval Hospital Vizag, India

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*Correspondence:

Dr. Piyush Gupta,

E-mail: piyush.trauma@gmail.com

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ABSTRACT

Pediatric age group is one of the most vulnerable groups to trauma and morbidity occurring thereby. And that too requiring reconstruction of ear pinna is in itself a challenge. Confronted with such situation is not an easy situation for any trauma team. Successful outcomes in auricular reconstruction rely on the surgeon's careful analysis of the defect as well as knowledge of the different reconstructive options available. We present one such case and discuss the relevant anatomy and operative options for surgeons.

Keywords: Ear trauma, Pinna repair, Pediatric trauma

INTRODUCTION

Ear pinna laceration is known to be the least commonly encountered emergencies in the pediatric age group.¹ Ear is a prominent part of face and prone to trauma in craniofacial traumas. They can be caused by various modes of injuries such as road traffic injuries (RTI), assaults, sports or fall from height. Common injuries encountered are ear lacerations, avulsions and penetrating wounds. These injuries are not only disfiguring but also have a high risk of complications like perichondritis in the long term.² This report discusses one such case of a non-microsurgical primary reattachment in a child.

CASE REPORT

A father was riding a motorcycle with his 2-year-old child sitting on his front part when he skidded on the road. He himself suffered minor abrasions to arms and face; whereas the child sustained a full thickness, near complete laceration of left ear pinna (Figure 1). They were brought to this hospital after 1 hour of injury. In the emergency dept, primary and secondary surveys were carried out as per the ATLS protocol and found them to

be stable with no internal injuries to head or torso. The child's ear needed surgical attention. The parents were counseled and prognosticated by the ENT specialist, before the child was taken to operating room.



Figure 1: Pre operative image with extensive avulsion of left ear pinna and abrasions over the left cheek.



Figure 2 (A and B): Intra operative image showing pinna was hanging by skin bridge ear tragus and a meticulous V Y advancement flap done.



Figure 3 (A and B): After 2 weeks of surgery, the child had a healthy pinna, symmetric with other side and minimal scarring.

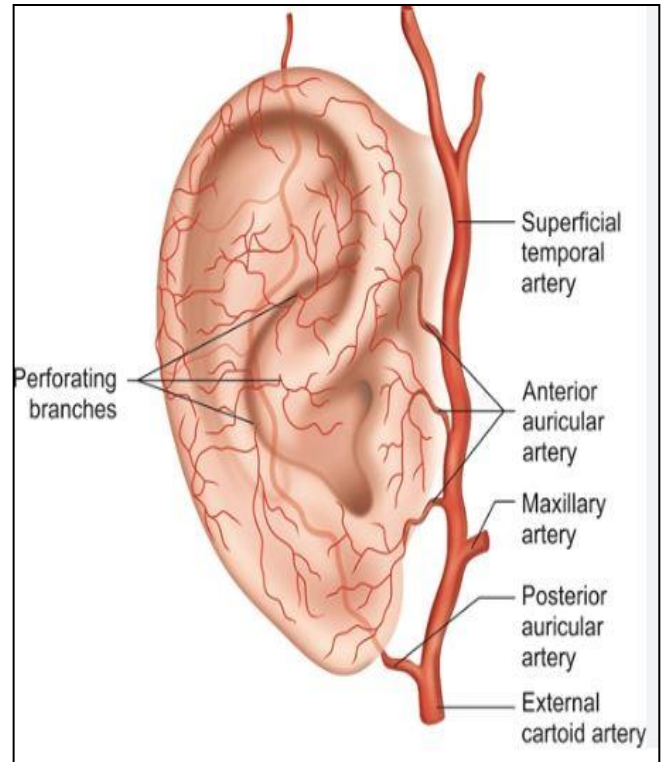


Figure 4: Anatomical description of arterial supply of pinna.

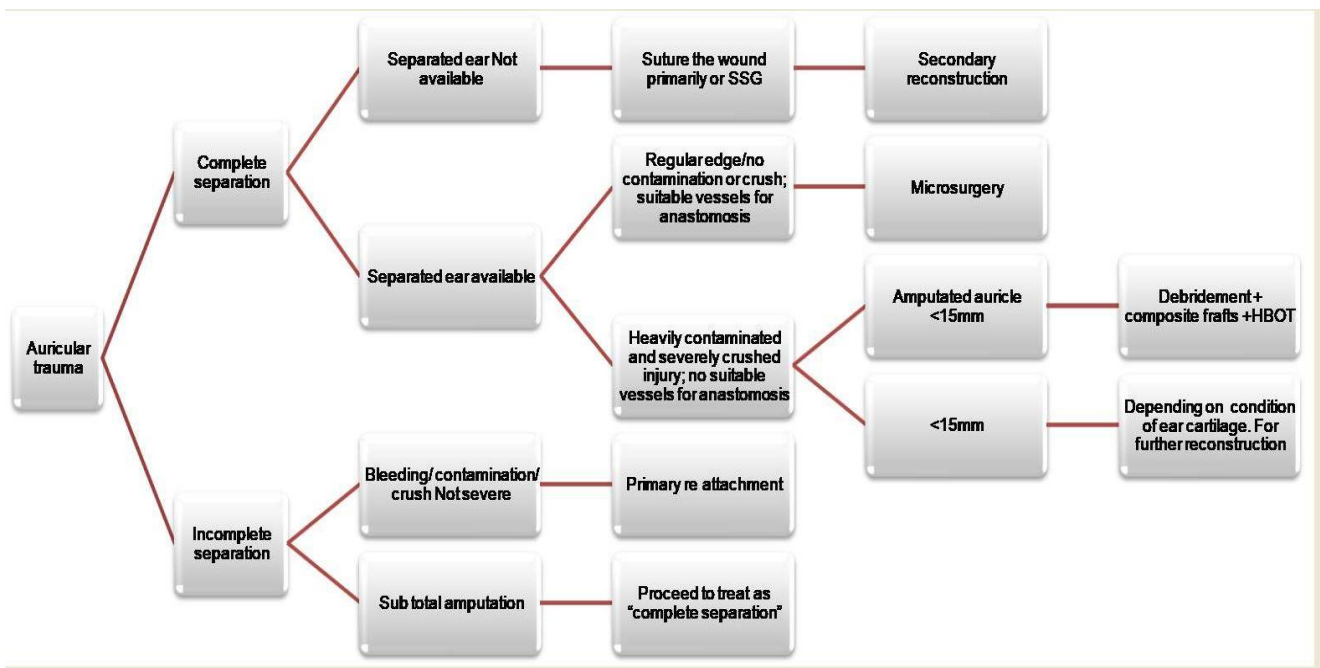


Figure 5: The initial approaches to treatment of auricular trauma (Zhang et al)⁴.

The wound was a full thickness avulsion with loss of post aural skin exposing the posterior cartilage. The pinna was hanging by a skin bridge near its tragus. The wound was meticulously cleaned and toileted off all the dirt and debris. A VY advancement flap was performed and cartilage covered with a well vascularized skin paddle.

(Figure 2) Post operatively, child was given intra venous iv antibiotics for 5 days and dressing changed alternate days. The sutures were removed after 7 days and the flap was noted to be healthy, without any infection or deformity in the long term (Figure 3).

DISCUSSION

Children of preschool age group are more prone to trauma at homes, due to falls, foreign objects or domestic trauma and less due to RTI.³ Children have smaller body mass than adults thus the energy imparted from falls results in greater force being applied per unit body area. In addition, a larger head to body ratio makes cranio-facial trauma more common in this group. In this case the child was on a motorbike unrestrained and fell off it to sustain such a grievous injury

Once brought to zonal centre like this one, it is mandatory to perform a quick initial assessment, primary survey and its adjunct to rule out any life-threatening injuries. That is followed by a secondary survey performed to identify the injuries and other relevant history for the treating team.

The ear injuries are quite disfiguring and often associated with complications and asymmetry. The skin adhering to the pinna's lateral surface poses a bigger challenge to repair in cases with skin loss compared to its medial surface.³ The dual arterial supply of pinna makes it unique for wound healing. Helical arcades and perforators from the crus of the helix to the lobule are responsible for the survival of complex pinna lacerations (Figure 4). The definitive management algorithm depends on the severity of laceration, residual blood supply to pinna, level of contamination and surgical expertise available (Figure 5).

There are multiple treatment options of salvage of a lacerated ear pinna.⁴ For completely avulsed or unviable pinna differ and may include local or regional flap and amputation followed by reconstruction. Local flaps such as post auricular island flaps (VY plasty) or helical advancement flaps may be needed for cases with a very narrow pedicle or skin loss >2 cm. Other local flaps are described are the Limberg flap, Gavello flap technique, Baudet technique, Rhomboid flap.⁵ In this case the authors have applied a VY plasty advancement flap

technique. It is generally used for the repair of small and medium size cutaneous defects. It has the advantage of a robust vascular supply and a reliable healing pattern. It is commonly done for hands, tips of digits, and facial reconstruction as this flap is perfused equally in all directions and tip necrosis is uncommon.

CONCLUSION

Any trauma in pediatric age group has to be dealt with caution in view of their unique physiological characteristics. Ear is of aesthetic importance and that too if not done timely and properly may leave physical and psychological scar. The application of soft tissue reconstruction techniques for this case and its successful outcome is a proof of this robust flap and its versatility.

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