



## Incidence of Ear Trauma at Souza Aguiar Municipal Hospital - Rio de Janeiro, Brazil

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### Abstract

Any change in the shape or position of the ear, can bring a psychosocial disorders to the patient [1]. Ear trauma is difficult to manage because each one presents a peculiar deformity, in addition to the ear frame being less vascularized [2]. A retrospective study was performed at the Souza Aguiar Hospital in the period from 2012 to 2015, which were submitted to ear reconstruction. The objective was to show the incidence of ear trauma and the types of lesions found. The highest incidences of ear trauma were human bite, canine bite and burn. We conclude that a good care in the emergency should be done with accurate cleaning and removal of devitalized tissues for later reconstruction.

**Keywords:** Trauma; Reconstruction; Amputation; Ear; Emergency

### Introduction

The ears are not the most remembered part of the body, but any change in the shape, size, symmetry and absence of the same cause discomfort to the patient and serious psychosocial problems, besides their usefulness, because without them we could not wear glasses. Deformities may be congenital or traumatic [3, 4]. Ear trauma is a challenge to the plastic surgeon or even to the general surgeon and the clinician who in the vast majority of cases receive these cases in the emergency, which is not trained to conduct the first care. Each case has a peculiarity because it does not follow the same pattern of traumatic deformity, remembering that the ear is a cartilage with a thin vascular envelope that is not vascularized and thus requiring even more of the Plastic Surgeon [5]. The form of the first care in the emergency will influence the result, since the trauma when it affects only the skin is a case of less complexity, if it reaches cartilage (partially or totally amputated), it is already a case of greater complexity, leading to the reconstruction of the auricular pavilion [6]. Relevance with ear trauma is whether or not there is contamination which can prevent cartilage exposure [7].

The traumatic causes described by Avelar are [5]:

1. Car Accidents
2. Cutting instrument amputations
3. Amputation by avulsion of the scalp (scalping)
4. Unfavorable results after ear correction
5. Burns:
  - a) Fire caused by combustion with ethanol, benzene, and other liquids
  - b) Fireworks
  - c) Hot liquids (water, milk, oil)
  - d) Cold temperatures (ice and snow) and chemical liquids: acids
  - e) Secretion of venomous animals
  - f) Electricity.
6. Bites:
  - g) Animal bite caused by horses, cows, dogs, pigs, camels.
  - h) Human bite
7. Piercings
8. Acupuncture
9. Earrings
10. Martial arts: judo, boxing, jiu-jitsu, karate
11. Infections

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## Objective

1.To show how much ear trauma; 2. Proportion of lesions in face with incidence of ear lesions; 3. Investigate lesions (with and without loss of ear cartilage and partial and total amputation); 4. The causes: (a) bite (human and animal), ( b) accidents (motor vehicles and motorcycles), (c) burns (electric, fire, acids, etc.).

## Materials and Methods

Retrospective study of 24 patients submitted to posttraumatic ear reconstruction from 2012 to 2015 at the Plastic Surgery Service of the Souza Aguiar Hospital, aged 23 to 62 years, 7 females and 17 male.

## Results

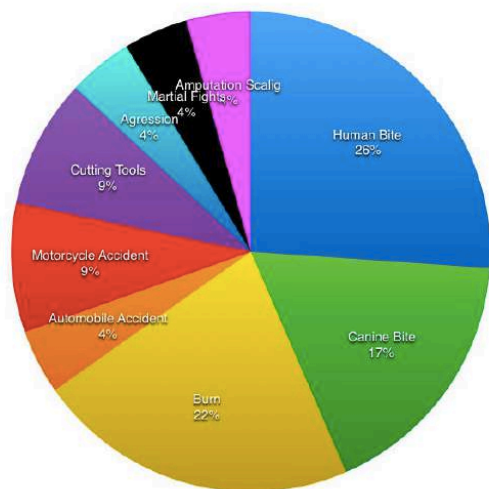
### Causes of ear trauma:

Accident by burn, is very common in Rio de Janeiro, but to our surprise or trauma by human bite (26% of cases), is our largest case of thirty of ear, followed by burn (22% of cases), and Human bite (17% of the cases) [Table 1] being in third place. We also noticed that the ear is more affected than the left ear. And bilateral cases are very rare.

Cause	Patients( %total)	Right	Left	Bilateral
Automobile Accident	1 (4%)	0	1	0
Motorcycle Accident	2 (9%)	1	1	0
Human Bite	6 (26%)	4	2	0
Canine Bite	4(17%)	1	3	0
Burn	5 (22%)	3	2	0
Agression	1 (4%)	0	1	0
Cutting Tools	2 (9%)	2	0	0
Marital Fight	1 (4%)	0	0	1
Scaling Amputation	1 (4%)	1	0	0

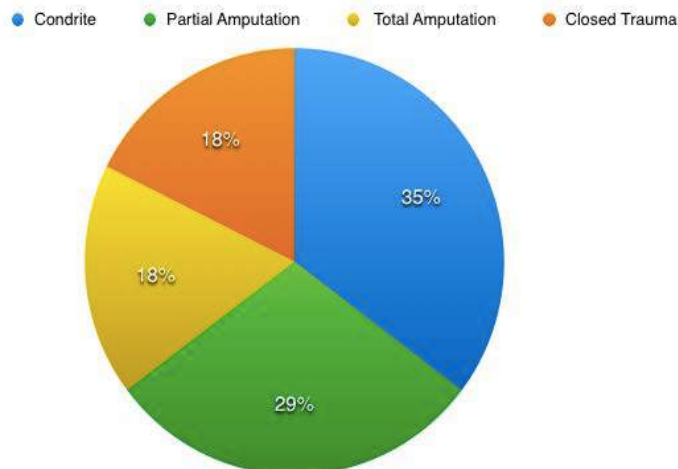
Table 1: Causes of ear Trauma

Human Bite 26% Canine Bite 17% Burn 22% Automobile Accident 4% Motorcycle Accident 9% Cutting Tools 9% Agression 4% Amputation Scalig 4% Marital Fights 4%



## Types of injuries:

Regarding the types of lesions chondritis is first (35% of the cases), showing the importance of knowing how to treat this type of lesion. Then there is partial amputation (29% of cases) and total amputation and closed trauma (both 18% of cases).



Case 1: Male 27 years, bottle aggression, partial avulsion.



Figure 1: Patient in emergency Primary Suture.

Case 2: 42 years, motorcycle fall and partial ear avulsion.



Figure 2: Motorcycle crash and ear laceration.



**Figure 3:** Replacement of the flap and primary suture.



**Figure 4:** Replacement of the flap and primary suture.

**Case 3:** Female, 23 years old human bite with total amputation.



**Figure 5:** Patient in emergency room



**Figure 6:** The cartilage was implanted in the patient's arm. But this one infected and the cartilage became For reconstruction.

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## Discussion

The trauma is the cause of numerous mutilations of the human body with destruction of several segments of the body. The ear is very frequently affected by human bite, animal, car accident, burns, cutting element and more. We have conducted a survey in the last 3 years exhibits diversified forms of amputation. Urgent care is of the utmost importance in order to identify devitalized tissues and take advantage of the segments that may be feasible to recompose the organ. During the first hours should be made accurate cleaning of the wounds and avoid rotation of cutaneous flaps. Definitive repair should only be performed after complete wound healing [8, 9]. For defects of the earlobe the nasal septum provides thin cartilage that is extremely useful and an incision is made around the earlobe, and the cheek and neck skin is advanced beneath the earlobe as in a face lift [10, 11]. In partial reconstruction maybe used retro auricular flaps with superior pedicle repair the upper part of the helix. In the total reconstruction of the ear can be used costal cartilage or Medpor for the framework of the ear and two surgical times [12].

## Conclusion

As the ear is totally external organ is exposed to the traumatism that may occur partial or total amputation whose repair requires meticulous programming. The first care is of great importance to protect fabrics that can be used in the repair.

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