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## Soft tissue injuries of the face: a 10 year review

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### Summary

A review of 1,173 soft tissue injuries seen and managed at the University College Hospital, Ibadan over a 10 year period was made. The age range was from 4 months to 85 years with a dominant age group range of 21 – 30 years. The commonest type of soft tissue injury was laceration while the commonest aetiology was road traffic accidents followed by falls. Males were generally more involved than females and the commonest complication was wound dehiscence.

**Keywords:** *Soft, tissue, injuries, face*

### Résumé

Une revue - de 1,173 blessures de tissus moux enregistré et soigné au centre hospitalier universitaire d'ibadan sur une période de 10 ans a été faite. L'âge des patients s'étaient de 4 mois à 85 ans avec le groupe d'âge dominant compris entre 21 et 30 ans. Le type le plus commun des blessures des tissus moux était la laceration alors que la cause la plus commune était les accidents de la route suivie des chutes. Les hommes étaient généralement plus impliqués dans les accidents que les femmes et la complication la plus commune était la déhiscence des blessures.

### Introduction

Although many studies have been carried out on maxillofacial injuries in Nigeria and other parts of the world,[1,2,3,4] only very few studies provided information on the soft tissue component of maxillofacial trauma;[5,6] a lot of emphasis was placed on the hard tissue component by many authors.

This study aims at establishing the pattern of soft tissue injuries of the face by embarking on a review of patients seen at the University College Hospital, Ibadan over a ten year period. The results are compared with previous studies from other centres.

### Patients and methods

This is a retrospective study of 831 patients with soft tissue injuries of the face seen at the Department of Oral and Maxillofacial Surgery, University College Hospital, Ibadan between January, 1989 and December, 1998. Parameters that were recorded included the age, sex, aetiology, types and sites of soft tissue injuries. Others included the treatment given to the patients and the complications observed after the treatment. Soft tissue injuries were classified into abrasions, lacerations, contusions and avulsions [7,8].

### Results

#### Age and Sex Distribution

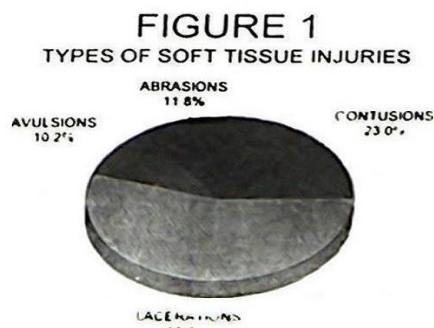
Out of the 831 patients, 601 were males and 231 were females (Male and Female ratio – 2.6:1). The highest age occurrence was in the 21 – 30 years age group (33.0%) (Table 1)

**Table 1:** Age distribution of soft tissue injuries

Age group (years)	No. of patients	%
0 – 10	92	11.1
1 – 20	174	20.9
21 – 30	274	33.0
31 – 40	158	19.0
41 – 50	33	4.0
51 – 60	25	3.0
61 – 70	25	3.0
71 – 80	42	5.0
>80	8	1.0
	831	100.0

#### Type of Soft Tissue Injuries

A total of the 1,173 injuries were recorded in the 831 patients. The commonest injuries were lacerations (55.0%). Others were contusions (23.0%), abrasions (11.8%) and avulsion (10.2%) (Fig.1).





**Site distribution**

The soft tissue injuries were predominantly of the lower third of the face consisting of lips, angle of mouth, cheek and the chin (54.8%). The commonest site was the lips (27.0%). (Table 2).

**Table 2:** Sites of soft tissue injuries

Site	No. of injuries	%
Lips	317	27.0
Cheek	94	8.0
Nose	106	9.0
Eyelids	70	6.0
Chin	211	18.0
Temple	35	3.0
Ear	59	5.0
Forehead	269	23.0
Angle of mouth	12	1.0
	1173	100.0

**Number of injuries per patient**

Of the 831 patients, 579 (69.7%) had one soft tissue injury, 201 (24.2%) sustained two injuries and 31(3.7%) had three injuries. Two (0.2%) had four injuries while 18 (2.2%) about patients had more than four.

**Aetiology**

Road traffic accident was the commonest cause of facial soft tissue injuries accounting for 315 (37.9%) patients. The other causes are as shown in (Table 3)

**Table 3:** Aetiology of soft tissue injuries

Aetiology	No. of patients	%
Road traffic accidents	315	37.9
Falls	208	25.0
Assaults	183	22.0
Sports	83	10.0
Gun shot	23	2.8
Industrial	17	2.1
Bites	2	0.2
	831	100.00

**Treatment-modalities**

About 66.0% of the injuries were treated by direct closure with sutures. Conservative management (ice compresses, antibiotics and analgesics) was utilized in 28.0% of patients. Debridement with delayed closure was employed in 5.4% while 0.6% of patients needed reconstruction (Table 4)

**Table 4 :** Treatment methods of soft tissue injuries

Method	No. of injuries	%
Direct Closure with sutures	774	66.0
Conservative (ice compresses, antibiotics) elevation, analgesics	329	28.0
Debridement with delayed closure	63	5.4
Plastic reconstruction	7	0.6
	1173	100.0

**Complications**

About 85.0% of patients had no complications. Wound dehiscence was noticed in 6.0% of patients while granuloma and fistula formation was seen in 4.0% of patients. In 3.0% of patients, there were paraesthesiae while hypertrophic scar formation was noticed in 2.0% of patients.

**Discussion**

Many statistical reviews of maxillofacial trauma have been published stating the aetiological factors, distribution of injuries, age and sex incidences of patients and results of treatment given [1,2,3,4,5]. However, most of these studies provided information on the hard tissue component of maxillofacial trauma only thereby neglecting the soft tissue injuries of the face.

In this study, it is observed that there are differences in the pattern of aetiological factors, sex and age incidences, presentation and the treatment modalities when compared to studies done on hard tissue only. These differences in patterns have also been noticed in reviews of essentially soft tissue trauma of the face [5,8].

The commonest aetiology of soft tissue trauma to the face in this study is road traffic accident (37.9%). This is in contrast to 13.4% recorded by Key *et al.* [5]. Falls were the commonest aetiology noted in other studies done in United Kingdom [5] and USA [8]. However, it is noteworthy that falls at a value of 25.0% is high in this study shows that a significant proportion of people that sustained soft tissue injuries were involved in falls. Falls were the next common aetiology after road traffic accidents in this study.

Because this study is on soft tissue injuries, many children were included as a result of injuries sustained during domestic falls. Deteriorating economic conditions with



resultant stress on families has probably forced the two parents to work to keep the homes intact. Therefore children were often left at home or with those who gave inadequate supervision. Road traffic accidents still remains a prominent etiological factor in this environment. In the United Kingdom, the incidence of road traffic accidents has been significantly reduced by the compulsory wearing of seat belts and enforcement of drink driving laws [10]. Only two cases of bites (0.2%), one human and the other, animal were observed in this study. This is in contrast with a study done in Chicago, USA where 116 patients were seen and treated for soft tissue injuries due to animal bites over a 10 year period [11]. Bites play very important roles in soft tissue maxillofacial trauma in Western countries[11,12]. It is very likely that the number of injuries due to bites is under-reported in this environment due to social stigmas associated with it.

The male to female ratio of 2.6:1 was observed in his study. This differs from previous studies on maxillofacial fractures where ratio of 16.9:1 and 3:1 were recorded [1,10]. The reason for this increased female involvement might be due to the fact that factors such as falls (25.0%) and assaults (22.0%) played far more prominent roles in soft tissue injuries than in maxillofacial fractures.

The highest age incidence in this study was in the 21-30 years group (33.0%). This conforms to previous studies on maxillofacial fractures in Nigeria and Western Countries [1,10,13,14]. It is however noted in this study that the second (20.9%) and first decades (11.1%) came next to the third decade (21-30 years) instead of the usual fourth decade recorded by many authors [1,2,3,4,10]. This study on soft tissue trauma incorporated many children who would have been left out if the study were to be on maxillofacial fractures. Fractures are rare in children because of the elasticity of bones which tend to stretch rather than fracture during moderate degree of trauma.

The high incidence in the first two decades of life is due to falls at home and in pedestrian type of road accidents. The children in these age groups are the ones usually sent on errands or engaged in hawking unaccompanied by older members of their families. This exposes them to the risk of being knocked down by motorcycles and cars. Eight patients (1%) above 80 years were involved in the soft tissue trauma in this study. Previous studies on maxillofacial trauma in his environment showed that only 0.3% of patients above 80 years were involved [1,10]. However, in Western countries, the involvement of patients above 80 years in maxillofacial trauma has been widely reported[13,14]. The increasing economic stress during the period of this study led to the involvement of old people in activities otherwise performed by younger ones which increased the chances of falls.

The highest incidence of soft tissue injuries occurred on the lips (27.0 %) in this study. This is in contrast to a previous study [5] where the forehead had the highest incidence (53.0 %). In this study, 23.0% of injuries occurred in the forehead. The high incidence on the lips could be attributed to the prominence of the lips in Africans and the proximity of the incisive surfaces of the anterior teeth to the lips which increases the chances of infliction of injury during accidental trauma. Simple methods of treatment were used in this study because the majority of the soft tissue injuries

were not extensive. Direct closure with sutures was employed in 66.0% of injuries where the wounds were clean and linear. Use of alternative materials like adhesives [1,5] and staples [1,6] in Europe was absent in this study. In 28.0% of soft tissue injuries, ice compresses, antibiotics and analgesics were utilized. Debridement with delayed closure was done in 5.4% of injuries where there was an infection. Plastic reconstruction was employed in 0.6% of injuries with considerable loss of tissue.

There is no doubt that injuries to the face has a negative effect on the facial appearance. Therefore there is a need to embark on a preventive programme to reduce the increase in soft tissue injuries and its attendant complications. Seatbelt, drink driving and helmet legislations should be introduced to diminish the incidence of these injuries. There should be adequate social support also to the very young and very old.

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