

Frequency of fractured mandible at a Fiji dental clinic (1989-1994)

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Introduction

Fractures of the facial bones are relatively common in western societies. Surveys of such injuries in a number of countries showed that the pattern of these injuries has changed over recent years, with decreased numbers due to road accidents and an increase in those resulting from interpersonal violence¹. In a Norwegian study comparing 291 adult patients in 1970 with 256 adult patients in 1980, all treated at the same institution², the prevalence of maxillofacial trauma from road accidents fell from 24% to 15%, and that resulting from interpersonal violence increased from 39% to 54%.

In Suva, the fractures of the mandible comprise between 90 to 95% of all facial fractures. These mandibular fractures and simple maxillary fractures are treated by dentists at Suva Dental Clinic. Maxillary fractures with some complications are seen by the plastic surgeons at the Colonial War Memorial Hospital (CWMH) in liaison with dentists at the Suva Dental Clinic.

This study was to describe the frequency, aetiology, distribution and treatment of mandibular fractures in patients presenting at Suva Dental Clinic from 1989 to 1994.

Materials and methods

Patients were excluded from this study if they suffered from dental or soft tissue injuries with no bony fractures, suffered from any other facial injury apart from the mandible, or when the records were considered inadequate. A total of 623 patient cards from 1989 to 1994 with fractured mandible

were included in the study.

Information from the patient's record card was coded and transferred to the computer for analysis. For descriptive purpose, the mandible was divided into seven regions; the condylar head and neck, ramus including the coronoid process, angle, body, canine region, alveolar process and symphysis.

Results

The frequency of mandibular fractures during the year 1989 to 1994 is shown in Figure 1. Fijians (78.2%) and Fijian males (84.7%) were mostly affected (See Table 1).

The greatest number of fractures occurred on Monday (21.5%), Friday (18.8%) and Saturday (16.1%). Fractures of mandible were common during the months of December (14.8%), May and August (10.2%) and July (9.3%) (See Table 2).

About 54% of the causes of fracture were not recorded in the dental cards, however, of the known causes, 81.5% were from interpersonal violence including fights, brawls, assault and domestic violence (Figure 2). Other causes of fractures were sports (6.3%), road accidents (6.3%) and miscellaneous (3.1%).

Sex		Race		
Male	Female	Fijian	Indian	Others
84.7%	15.3%	78.2%	11.6%	10.2%

The body of the mandible accounts for 29.7% of all fracture sites, followed by the angle (23.2%) and the symphysis (13.8%). Majority of the fractures occur on the left side of the mandible and were unilateral. Fractures were treated by intermaxillary fixation using eyelet wiring (76.6%), buttons (15.6%), arch bars (5%) and open reduction by direct osseous wiring (1.1%) (Figure 3).

Discussion

The prevalence of fractured mandible was common among Fijians. This may reflect the type and degree of socialisation that Fijians engage in. Although males were commonly injured, it was interesting to note that 15.3% of the women affected, were assaulted by their husbands or boyfriends. Because of the lack of information from the dental cards, it

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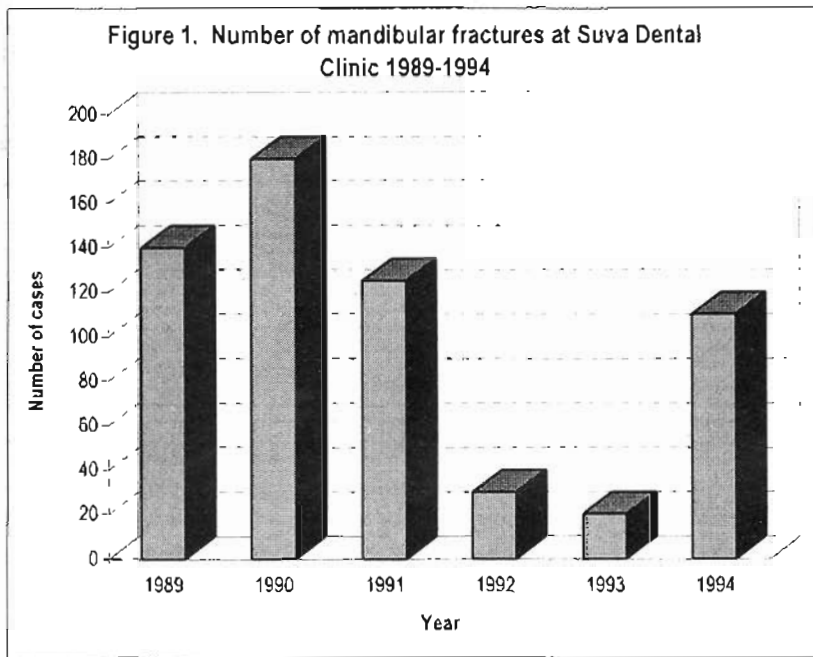


Table 3. Distribution of mandibular fractures by months of the year

Month	%
January	7.8
February	6
March	6.3
April	6.2
May	10.2
June	7.6
July	9.3
August	10.2
September	7.2
October	7.1
November	7.3
December	14.8

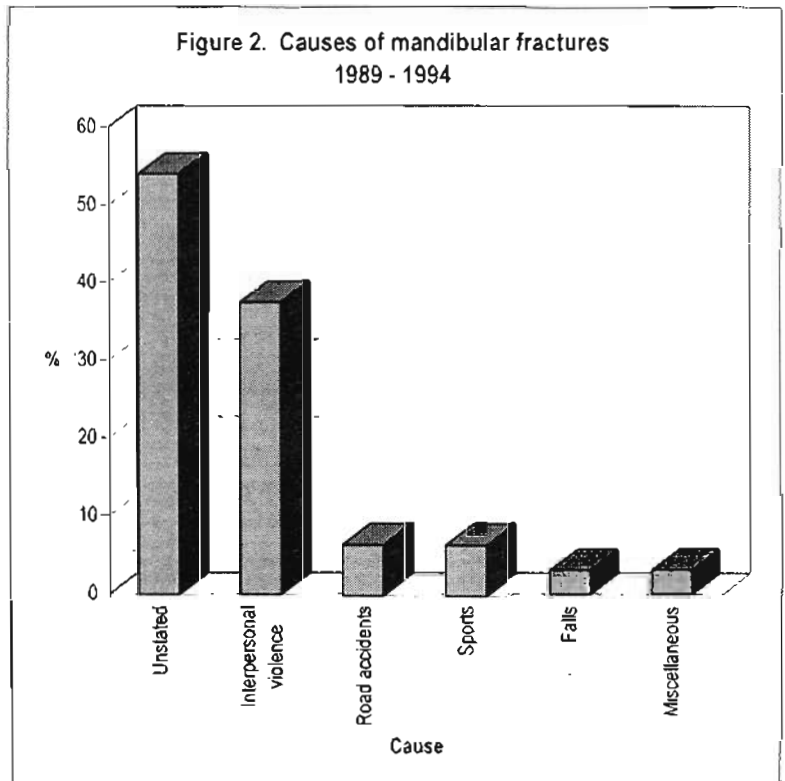
was assumed that the injury occurred on the day of admittance to the hospital. High incidence on Monday were similar to the Otago survey during the years 1979-1986³, perhaps due to social activities of the weekend. Furthermore, the public holidays during the months of December and July showed an increase on the prevalence of the fracture, which may be related to social activities on Christmas and Hibiscus festival weekends.

From this study, it was apparent that more than 50% of the records did not indicate the cause of the fracture. Therefore, it is recommended that a dental history card be formulated to include sufficient information on the fractures of mandible. However, from the recorded cases, interpersonal violence was the main cause of mandibular fractures. The Otago survey³ found that alcohol was the major contributor to fractures resulting from interpersonal violence

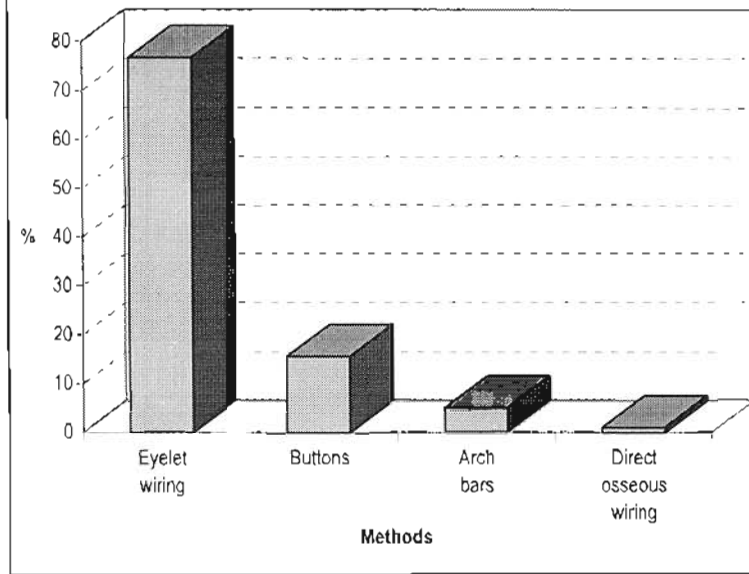
and road accidents. Mandibular fractures sustained from sports was common in rugby union and league. Perhaps, the community should be educated on the preventive approaches, whereby the wearing of seat belts and mouthguards are emphasised.

Table 2. Distribution of mandibular fractures by days of the week

Day	%
Monday	21.5
Tuesday	13.2
Wednesday	10.4
Thursday	11.1
Friday	18.8
Saturday	16.1
Sunday	8.90



**Figure 3. Methods of intermaxillary fixation
1989 - 1994**



The presence of unerupted teeth (e.g impacted wisdom teeth) contributes to a point of weakness in the jaw⁴ and the canine region due to the long roots of the canine tooth at the maximum curvature of the mandible³. Fractures occurring on the left side and are unilateral were common at the Suva Dental Clinic as in the Otago survey³ signifying that most of the assailants are right-handed.

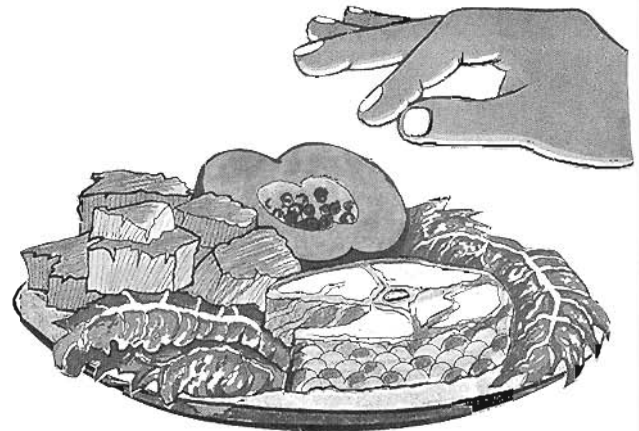
Conclusion

Mandibular fractures are the most common facial fracture, resulting from interpersonal violence. The frequency was

shown to have little variation from 1989 - 1994. Discrepancies in the year 1992 and 1993 was due to missing records at the dental department. Interpersonal violence was the main cause of the known cases of fracture during the years of study, whereas in Otago, it was mainly due to motor vehicle accidents. Most of the cases of fractured mandible occurred on Monday, however, the actual day in which the injury was sustained was hardly recorded. The frequency of fractures is common during the festive period, probably due to the consumption of alcohol. As observed in the Otago study³ and at the Suva Dental Clinic, the site of fracture were mainly unilateral, and on the left side of the body of the mandible. The most preferred method of intermaxillary fixation at the Suva Dental Clinic was by eyelet wiring

References

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