

Fractures of the Zygomatic Complex.

A Comprehensive Review of 10 years Surgical Management.

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Introduction

The zygomatic complex (ZMC) is crucial in maintaining facial contours and it also significantly contributes to orbital integrity. When the ZMC is fractured (Figure 1a-d), aesthetic and functional problems arise which regularly require surgical management, which has evolved and improved over the last 2 decades.

Aims

The aim of this study was to assess the surgical management, complications and post-operative long term sequelae of treated fractures of the zygomatic complex.

Materials & Methods

A retrospective analysis of patients treated between 2001-2011 was undertaken using medical and radiographic records. Patient age, gender, fracture location, surgical technique, concomitant injuries and treatment outcome were noted and tabulated.

Results

Of the 1343 patients treated most fractures were male (88%) and aged between 21-30 years. The age range was 6 to 92 years with 443 (33%) in the 21-30 years group. The main aetiology was interpersonal violence, followed by road traffic collisions, falls and sports injuries. (Figure. 2) Bilateral fractures were found in 53 patients (1%), whereas unilateral fractures of the right side were found (49%) and left side (50%) respectively. A total of 5.7% of patients had exploration or treatment of orbital floor defects with the use of calvarial bone graft, silastic sheet or titanium implants. (Figure. 3)

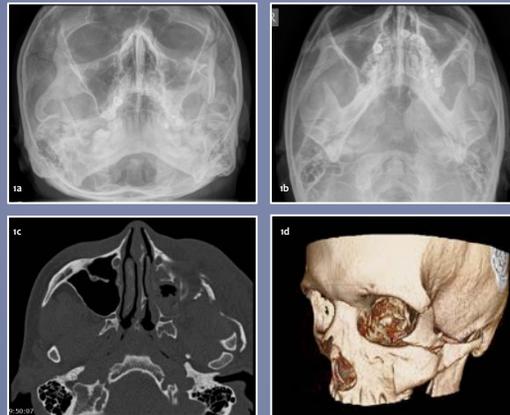


Figure 1. a,b OM views 10° and 30° respectively demonstrating fracture left ZMC. c, CT demonstrating fracture left ZMC (different patient) d, 3D CT image of patient in c.



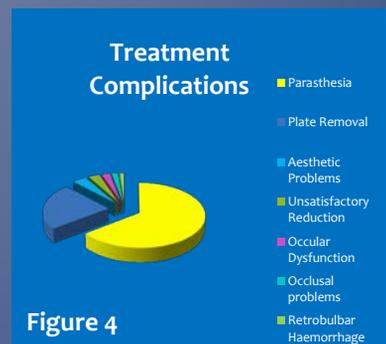
The most frequent complication was paraesthesia of the infra-orbital nerve (ION) persisting more than 4 months (11.09%). Complications involving eye function resulting in diplopia, amaurosis and impaired eye movement occurred in 5 patients.

Retrolubar haemorrhage occurred in 3 patients (0.002%), either in the recovery room or on table. Other complications included aesthetic-functional defects of the lower eyelid, unsatisfactory reduction, plate exposure requiring removal and occlusal problems, with one patient requiring a zygomatic osteotomy as a secondary reconstructive treatment. (Figure. 4)



Discussion

Long-term epidemiological data collection regarding facial fractures is important for the evaluation of existing preventative measures and is useful in the development of new methods of injury prevention and treatment. One of the most obvious findings was the prominence of injuries in men which is a consistent finding in other studies. [1]



A significant proportion of the injuries were associated with drug and alcohol abuse, speeding and disregard for the use of a seatbelt.

Unacceptably poor surgical outcomes are uncommon. Significant facial asymmetry requiring surgical revision occurred in only 10 patients, post-operative infection rates were extremely low and nearly always resolved with antibiotics. The low rate of retrolubar haemorrhage encountered and the immediate presentation of the cases supports the argument of safely managing ZMC fractures as day cases with regards to this. The data collected represents an overall lower rate of surgical complications than previously published. [2]

REFERENCES

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