

Review

Recent advances in the management of oral and maxillofacial trauma

Rory C. O'Connor^{a,*}, Kaveh Shakib^b, Peter A. Brennan^c

^a Specialist Registrar in Oral and Maxillofacial Surgery, Nottingham University Hospitals NHS Trust, Queen's Medical Centre, Derby Road, Nottingham, NG7 2UH

^b Consultant Oral and Maxillofacial Surgeon, The Ridgeway, Enfield, Middlesex, EN2 8JL

^c Consultant Oral and Maxillofacial Surgeon, Portsmouth Hospitals NHS Trust, Queen Alexandra Hospital, Southwick Hill Road, Cosham, PO6 3LY

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Abstract

This review summarises recently published papers on maxillofacial trauma in 2 widely read journals: the British Journal of Oral and Maxillofacial Surgery (BJOMS) and the International Journal of Oral and Maxillofacial Surgery (IJOMS). Since a large proportion of the injuries seen in oral and maxillofacial surgery (OMFS) departments are fractures of the facial skeleton, we primarily focus on their assessment and treatment, but also cover problems that affect the temporomandibular joint (TMJ) (including ankylosis), military injuries, polytrauma, and the use of perioperative drugs. Between 2012 and 2013, 121 articles were published in the 2 journals. Most of the research concerned mandibular fractures, particularly those involving the condyle, but epidemiological studies and midfacial fractures were also well represented. Even though the incidence of facial injury is high, it is difficult to collect data particularly when long-term evaluation is required, as rates of compliance and attendance at follow up tend to be low. The number of large-scale studies was therefore small. A concerted effort to collaborate nationally and across specialties to undertake larger studies will help to improve outcomes.

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Introduction

The assessment and management of patients with facial injuries is a core part of the workload of the Oral and Maxillofacial surgeon. The treatment of many injuries has now been standardised, but techniques and technology evolve, and in some areas, such as the treatment of condylar fractures, there is conflicting evidence, and in others there is no evidence at all. To gain an insight into the current controversies about treatment, new approaches to the management

of facial injuries, and future areas that require development, we have summarised articles pertinent to OMFS trauma published between 2012 and 2014 in 2 of the leading journals with the highest impact factors in the field, the British Journal of Oral and Maxillofacial Surgery (BJOMS) and the International Journal of Oral and Maxillofacial Surgery (IJOMS). The review is designed to be an educational resource, not an all-encompassing review to answer a specific question.

Between the 2 journals, 121 articles relating to trauma were published (Tables 1 and 2). The low number of prospective and randomised controlled trials has been highlighted previously,¹ and this trend seems to be continuing. Mandibular trauma is a popular topic but other regions, including the frontal bone and temporomandibular joint (TMJ), are less

* Corresponding author. Tel.: +0115 969 1169; fax: +0115 9627939.

E-mail addresses: roaroconnor@gmail.com (R.C. O'Connor), k.shakib@shakib.org (K. Shakib), peter.brennan@porthosp.nhs.uk (P.A. Brennan).

Table 1

Articles on facial trauma published in the British Journal of Oral and Maxillofacial Surgery in 2012–2013 according to anatomical region.

	Review	Meta-analysis/ RCT	Prospective	Retrospective	Case report/ technical note	Letter	Total
Mandible	-	1	9	7	9	-	26
Midface	1	1	-	4	8	-	14
Frontal	-	-	-	1	2	-	3
TMJ	1	-	1	1	2	1	6
Pan facial	1	-	5	4	-	2	12
Other	3	-	2	2	-	-	7
Total	6	2	17	19	21	3	68

Table 2

Articles on facial trauma published in the International Journal of Oral and Maxillofacial Surgery in 2012–2013 according to anatomical region.

	Review	Meta-analysis/ RCT	Prospective	Retrospective	Case report/ technical note	Letter	Total
Mandible	-	1	8	9	4	4	26
Midface	-	-	3	6	1	4	14
Frontal	-	-	1	-	1	-	2
TMJ	-	-	-	1	-	-	1
Pan facial	-	-	-	4	1	-	5
Other	1	-	1	-	-	3	5
Total	1	1	13	20	7	11	53

Table 3

General key points.

Young men have the highest risk of facial injury because of interpersonal violence and sport. Alcohol and drug abuse are implicated in 15%–40%, and 47% of injuries, respectively

Children from the lowest socioeconomic group are 1.89 times more likely to sustain a facial injury than those from the highest group

Falls are the most common cause of facial injury in people over 60 and cause a large proportion of the total number of facial injuries

No more than 24 hours of postoperative antibiotics are necessary after repair of orbital and mandibular fractures as longer courses do not reduce infection rates further

Perioperative steroids reduce postoperative nausea, vomiting, and swelling, and do not seem to impair healing through immunosuppression

Emergency access to theatre is inadequate for patients with facial injuries and 30% of cases are delayed because others are more urgent

The incidence of serious complications in patients with facial injuries who are operated on out-of-hours is over 3 times that of those operated on in-hours

Table 4

Key points: mandibular fractures.

Cortical bone in the parasymphyseal region may be less than 4 mm thick, so the stabilisation of fractures with screws longer than 4 mm may injure the apices of the teeth

It is not necessary to remove a wisdom tooth that complicates a fractured mandibular angle as postoperative infection rates are the same (11%) whether it is removed or not

For fractures of the angle, the incidence of plates being removed secondary to infection is higher if the plate was placed on the external oblique ridge than on the buccal aspect of the mandible (OR 5.05)

Stress tests suggest that osteosynthesis of a fractured mandibular condyle should be done with 2 plates, as one is not sufficiently stable

Animal and histological studies have shown that resorbable poly D,L-lactide plates and pins are suitable tools in the fixation of condylar fractures, but further evaluation in humans is required

Table 5

Key points: midfacial and orbital fractures.

Children with fractures of the orbital floor are at risk of muscular incarceration because of the trapdoor effect of the bone at the fracture site; this requires prompt surgical release within 24–48 hours to prevent permanent visual disturbance

Fractures of the orbital wall may be treated conservatively if the defect is small (less than 3cm²), with little enophthalmos (less than 2 mm) and if there is no entrapment of periorbital tissue

Cannulation of the lacrimal duct with a silicone catheter can protect the lacrimal apparatus during repair of naso-orbitoethmoidal fractures

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