Initial Assessment, Management and Referral of Common Maxillofacial Presentations: Orbital Fractures

TARGET AUDIENCE	Primary and secondary care clinicians
PATIENT GROUP	All adult and paediatric patients

Clinical Guidelines Summary

Overview

1) The clinical spectrum of facial trauma ranges from minimal soft tissue injuries to life threatening panfacial trauma.
2) This guide aims to outline basic assessment, early management and referral pathways for the more common patterns of facial trauma namely:
    - Fractures of the mandible
    - Fractures of the zygomatic complex/arch
    - Orbital fractures
3) At presentation patients should be managed according to Advanced Trauma Life Support (ATLS) protocol so that life-threatening injuries/complications are prioritised.

Guideline Body

Orbital Fractures

The most common isolated orbital fracture is a “blow-out” fracture involving the orbital floor +/- medial wall.

Clinical Features

1) **An eye that is swollen shut still needs to be examined** in order to exclude orbital compartment syndrome, globe injury or a paediatric orbital floor injury. This will ensure that sight threatening injuries are not missed. Common eye examination findings would include:
    - Subconjunctival haemorrhage
    - Restriction of eye movement
    - Diplopia: Differentiate between monocular and binocular diplopia; monocular diplopia suggests ocular injury requiring ophthalmology referral

2) Numbness of lateral nose, anterior cheek/lip, lower eyelid or upper gums

Imaging

1) Occipitomental views (“facial views”). Often at 10 and 30 degrees
2) **CT facial bones indicated if patient requires CT head** or after discussion with OMFS

Must-Not-Miss Diagnoses

1) Orbital Compartment Syndrome: an unusual but significant complication where intra-orbital pressure increases (most commonly due to haemorrhage but also possible with gas) with resultant compression of the optic nerve.
    - features include reduced visual acuity (loss of red colour sensitivity may be earliest sign), a fixed and dilated pupil, a proptosed and tense globe, ophthalmoplegia and pain

- management involves immediate lateral canthotomy and cantholysis with supplementary medical management including high-dose steroids and 500mg IV acetazolamide and urgent discussion with Oral and Maxillofacial Surgery (OMFS) and Ophthalmology teams

2) Paediatric orbital injuries: Children are particularly at risk of extra-ocular muscle entrapment with orbital floor injuries. This is due to a greenstick type injury with "nipping" of the extra-ocular muscles. Unlike in adults where there is likely to be an open volume defect, in children a "trap-door" defect may occur which can result in early necrosis of the trapped soft tissue.
    - classically presents as the "white eye blow out fracture" where there is **restricted ocular motility** +/- features of an exaggerated oculo-cardiac reflex. These patients are often misdiagnosed with a head injury as they feel sick when opening the affected eye.
    - confirm diagnosis with CT orbits
    - require admission and urgent surgical intervention to prevent muscle necrosis and permanent visual problems

Management

1) Any concerning eye signs (reduced visual acuity, globe injury, signs of orbital compartment syndrome in any patient or signs of restricted eye movements in children) warrant urgent Ophthalmology and OMFS referral
2) All patients with orbital fractures should be instructed not to blow their nose for 3 weeks due to the risk of surgical emphysema
3) In the absence of any concerning features these closed orbital fractures will be reviewed in an OMFS outpatient clinic in 7-14 days.
4) Antibiotics are not routinely required

How to Refer Orbital Fractures to OMFS

1) If the patient requires immediate OMFS review:
    (i) In-hours (8am-5pm):
        - Monday-Thursday- on-call service based in Forth Valley Royal Hospital (Tel: 01324 566000, Bleep: #1143)

- Friday- on-call service based in Queen Elizabeth University Hospital Glasgow (Tel: 0141 201 100, Bleep #17666)

(ii) Out-of-hours:

- On-Call SHO can be contacted through Monklands switchboard with an on-site ANP triaging calls from 10pm-7.30am

2) If the patient does not require immediate OMFS review:

(i) Emergency departments can send patient details to OMFS administration team who will give details to day team/arrange trauma clinic appointment

(ii) Other areas of hospital can give patient details to the on-call team as above

References/Evidence

1. Kerwala C, Newlands C, editors. Oral and Maxillofacial Surgery (Oxford Specialist Handbooks in Surgery). 2nd ed. Oxford: OUP Oxford; 2014.
2. Payne KFB, Goodson MCG, Tahim AS, Ahmed N, Fan K. On-Call in Oral and Maxillofacial Surgery. 2nd ed. Enfield: Libri Publishing; 2015.
3. Sadler A, Cheng L. Dentist on the Ward. 6th ed. Sorejaw Publishing; 2015.

Appendices

1. Governance information for Guidance document

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Distribution	Primary/Secondary Care

CHANGE RECORD

Date	Lead Author	Change	Version No.
		e.g. Review, revise and update of policy in line with contemporary professional structures and practice	1
			2
			3
		.	4
			5

2.You can include additional appendices with complimentary information that doesn't fit into the main text of your guideline, but is crucial and supports its understanding.

e.g. supporting documents for implementation of guideline, patient information, specific monitoring requirements for secondary and primary care clinicians, dosing regimen/considerations according to weight and/or creatinine clearance

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