An isolated mid-facial swelling: a cause for an otolaryngology referral?

Introduction

This article presents the case of a 3-year-old girl with mid-facial and lower eyelid swelling which was unresponsive to initial antibiotic treatment. She was referred to the on-call otolaryngology team with presumed sinus pathology and orbital cellulitis. After starting intravenous antibiotics a maxillofacial review was arranged and a carious tooth identified as the cause. She underwent an extraction and the swelling settled.

A mid-facial swelling is often erroneously attributed to sinus pathology and referred as orbital cellulitis by the paediatric team, leading to a delay in definitive management. This case illustrates the need to exclude primary dental causes for an acute onset isolated mid-facial swelling in the absence of significant swelling of the eye.

Figure 1. A right-sided facial swelling secondary to dental abscess from a carious tooth.

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Discussion

The maxillary sinus is a closed osseous compartment with few anastomosing veins. Therefore the anterior wall of the maxillary antrum forms an effective barrier to oedema and inflammation. While swelling of the cheek as a result of inflammatory disease in the maxillary sinus has been described, it is a rare cause of isolated swelling of the cheek unless associated with an acquired defect in the anterior maxillary sinus wall (Shugar et al, 1982). Apical tooth infections on the other hand are unique in that the position of the tooth root is in close proximity to the sinus and the overlying facial soft tissues.

The child with a localized swelling of the mid-face can present a diagnostic challenge. A structured approach to the diag-

Table 1. Causes of localized facial swelling

Pattern of onset	Cause
Non-progressive swelling	Epidermoid cysts
	Dacryocystoceles
	Glioma
	Frontoethmoidal cephaloceles
	First branchial arch cysts
Slowly progressive swelling	Capillary haemangiomas
	Cystic masses
	Neurofibroma
	Lymphangioma
	Branchio-otorenal syndrome
	Pseudocyst
	Internal jugular vein ectasia
	Fibrous dysplasia
Rapidly progressive swelling	Rhabdomyosarcoma
	Histiocytosis
	Haematomas
	Non-accidental injury
	Neuroblastoma
	Ewing's sarcoma
	Osteogenic sarcoma
Acute swelling with inflammation	Apical tooth infection
	Dacryocystitis
	Sinusitis
	Mumps
	Lymphadenitis
	Mucous retention cysts

Case Report

A 3-year-old girl was referred to the paediatric team with a right mid-facial swelling and pain. On admission she was pyrexial (38°C). Full blood count showed a raised white cell count (12.7×10^9/litre) and her C-reactive protein level was elevated (11 mg/dl). There was no growth from blood cultures. She was commenced on intravenous co-amoxiclav. The swelling settled and she was discharged on oral antibiotics. She re-presented 48 hours later with increased pain and swelling. An otolaryngology opinion was sought regarding possible sinus pathology and periorbital cellulitis. There was no history of upper respiratory tract infection or purulent rhinorrhoea. On examination there was swelling from the right infraorbital margin to the vermillion border with bruising of the lower eyelid (*Figure 1*). There was no visible propotosis or chemosis and bedside testing of red colour vision was normal. Ophthalmology opinion confirmed normal visual acuity. Examination of the oral cavity showed a carious upper right tooth with an adjacent swelling of the buccal mucosa. There were no signs of rhinitis.

The patient underwent a dental extraction of the upper right deciduous molar tooth. Postoperatively the facial swelling and pyrexia settled. She was discharged on oral antibiotics. At outpatient follow up the swelling had resolved completely.

nosis and management is essential to avoid diagnostic delay and definitive treatment (Ghaly et al, 2009). Khanna et al (2006) categorized the causes of localized facial swelling based on pattern of onset (*Table 1*).

The commonest dental cause of the acute onset swelling and inflammation is a peri-apical tooth infection. In contrast Lee et al (2010) in a series of 121 patients undergoing surgery for unilateral sinus disease only three (3.1%, *n*=97) had cheek swelling at presentation. Conventional rhinology teaching also reports that isolated swelling of the cheek is an unusual finding in rhinosinusitis (Jones et al, 2002). A further review of the literature revealed several rare causes of rapid onset cheek swelling, including bleeding as a result of vitamin K deficiency (Myoken et al, 2010), facial lymphoma (Graham et al, 2009), and dentigerous cyst (Goyal et al, 2010).

This case and discussion illustrates the need for non-otolaryngology specialists to consider primary dental causes in cases of rapid onset mid-facial swelling over the maxillary sinus. BJHM

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LEARNING POINTS

- Maxillary sinus pathology is rare as a cause of localized cheek swelling.
- An isolated mid-facial swelling not involving the eye should be considered dental until proven otherwise.
- An early referral to the maxillofacial team may avoid the need for unnecessary investigations.
- The management of facial swelling often requires a multidisciplinary approach.

An unusual foreign body in the upper cervical oesophagus

A 71-year-old man presented with dysphagia, odynophagia and foreign body sensation in the throat, 3 days after eating a meal that contained fish. X-ray (*Figure 1*) revealed a radio-opaque foreign body in the cervical oesophagus at the cricoid cartilage level with thickening of the prevertebral tissues.

The foreign body was located in a less common site: the upper cervical oesophagus (the lower third is most common). This site usually presents the greatest difficulties for flexible endoscopic treatment. The patient therefore underwent a rigid pharyngo-oesophagoscopy under general anaesthesia when a sickle-shaped foreign body (4 x 1.5 cm) was extracted in one piece, identified later as a piece of crab shell (*Figure 2*). Postoperatively, the patient was closely observed for 48 hours and discharged after 3 days.

Sharp foreign bodies in the oesophagus can be associated with serious complications, e.g. oesophageal perforation and mediastinitis (associated with high mortality). Therefore, rapid, accurate diagnosis followed by appropriate timely endoscopic or surgical intervention is indicated. BJHM

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Figure 1. Radio-opaque ingested foreign body.

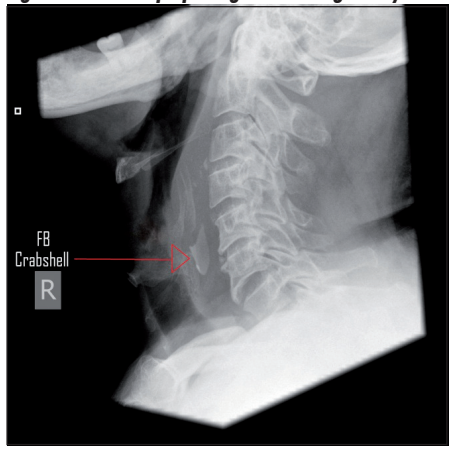

Figure 2. Sickle-shaped extracted foreign body (part of crab shell).