Dentistry
ISSN: 2161-1122

Mc Conville et al., Dentistry 2015, 5:7
DOI: 10.4172/2161-1122.1000314

Case Report Open Access

Silent Sinus Syndrome-A Rare Cause of Facial Asymmetry

R Mc Conville*, C Sanapala, DP Ramkumar, N Scott and MK Foo

Maxillo-Facial Department, Royal Gwent Hospital, Newport, Wales, UK

Abstract

The authors present a rare case of facial asymmetry caused by silent sinus syndrome in a 30 year-old man. Silent sinus syndrome consists of painless facial asymmetry characterized by unilateral enophthalmos. A discussion of the pathophysiology, management and current literature is included. This case serves to highlight the awareness that all clinicians dealing with the head and neck should possess.

Keywords: Chronic disease; Diagnosis; Differential; Endoscopy; Enophthalmos; Facial asymmetry; Maxillary sinus; Syndrome

Introduction

Silent sinus syndrome was first described by Soparkar et al. in 1994. It is a disease characterized by enophthalmos or hypoglobus secondary to the collapse of the orbital floor in the presence of asymptomatic chronic maxillary sinusitis [1].

Case Report

A 30-year old male was referred to the Oral and Maxillofacial Surgery (OMFS) team by his General Practitioner with "flattening of the right zygomatic area" and the patient complaining that his right cheek was "sinking in over the past 9 months." He was asymptomatic and denied any history of trauma. The patient's medical history was unremarkable and he was a non-smoker.

Clinical examination revealed the right zygoma had a "dished out" appearance, with no bony tenderness. There was enophthalmos of the right eye and cranial nerve examination, including full ocular assessment was normal (Figure 1).

Plain radiographs and computed tomography (CT) of the sinuses revealed that the right maxillary sinus was significantly reduced in volume, with bowing of the medial wall of the right antrum. It was also reported that the right orbit was "relatively" larger than the left (Figure 2).

The patient is currently awaiting functional endoscopic sinus surgery to re-establish normal sinus aeration, followed by a 6 month review to observe for resolution and evaluate the need for orbital floor and zygomatic implants to restore facial symmetry.

Discussion

Silent sinus syndrome is a unilateral collapse of the maxillary sinus and orbital floor associated with negative antral pressures in the absence of sinus symptoms [2]. Over 160 cases have been published in the literature since its first description up to 2011. Presentation is typically in the third to fifth decade of life, with no predilection for sex [3].

It is believed that the syndrome's pathophysiology involves chronic obstruction of the maxillary osteo-meatal complex with hypoventilation of the sinus. Obstruction of the ostium is secondary to mechanisms such as a lateralised infundibulum wall, lateralised middle concha, or a mucocele or a polyp occluding the ostium. Occlusion and hypoventilation of the sinus leads to the development of negative pressure, due to resorption of the natural sinus secretions and subsequent retraction of the sinus walls [4].

Radiographic findings are pathognomonic, with CT imaging characteristically showing ipsilateral maxillary sinus shrinkage and inferior displacement of the orbital floor [5].

Functional Endoscopic Sinus Surgery (FESS) is the gold standard to re-establish normal sinus aeration by relieving the obstruction of the osteomeatal complex [2].

Restoration of facial symmetry, in particular orbital floor repair is a subject of debate. It can either be provided as a single stage procedure in which FESS is combined with orbital floor repair. This may be preferable when severe enophthalmos/diplopia is present [3]. Advantages of a single-stage procedure include reduced morbidity, reduced patient discomfort, and less hospitalization [6]. However, Thomas et al. and Numa et al. found that the inferior displacement of the orbital floor may be self-reversing by natural orbital floor and bony maxillary sinus remodeling after alleviation of the negative pressure in the sinus [7,8].

Conclusion

The typical patient with silent sinus syndrome presents to an

Figure 1: The differential diagnosis included; trauma to the orbito-zygomatic complex, malignancy in the maxillary sinus, an undiagnosed congenital facial asymmetry, or silent sinus syndrome.

***Corresponding author:** Dr. R Mc Conville, Maxillo-Facial Department, Royal Gwent Hospital, Newport, Wales, UK, Tel: 00447743070666; E-mail: mcconvir@tcd.ie

Received May 20, 2015; **Accepted** June 24, 2015; **Published** June 29, 2015

Citation: Mc Conville R, Sanapala C, Ramkumar DP, Scott N, Foo MK (2015) Silent Sinus Syndrome-A Rare Cause of Facial Asymmetry. Dentistry 5: 314. doi:10.4172/2161-1122.1000314

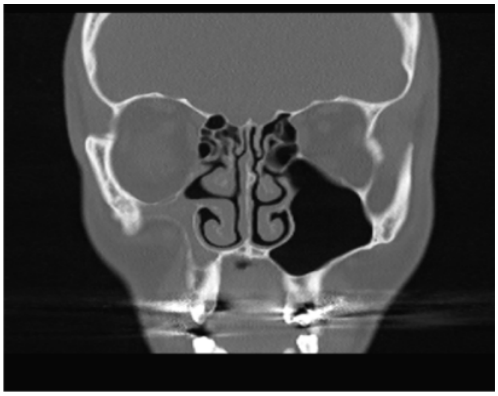

Figure 2: The clinical and radiological features lead to the diagnosis of silent sinus syndrome.

ophthalmologist or an ear, nose, and throat specialist with a prolonged history of painless eye or facial asymmetry, diplopia or both [9]. The presentation of this case resulted in an OMFS referral and thus emphasizes the need for all clinicians exposed to head and neck pathology to be familiar with silent sinus syndrome to ensure the correct diagnosis is made and optimal treatment provided.

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