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Chronic Maxillary Sinusitis May Cause Non-Odontogenic Toothache: A Case Report

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Abstract

A 42-year-old female presented with a 10 days history of severe toothache at the upper right side of the jaw. She had previously undergone treatment for Rhinosinusitis few months back. Following detailed discussion with the ENT team, the patient was diagnosed with chronic maxillary sinusitis. The CT report showed Right chronic maxillary sinusitis with soft tissue attenuation. The nasal turbinate was seen quite prominent in the CT. Further surgical approach was thought appropriate for this chronic condition. She was completely fine & the symptoms were controlled 4-5 days following this surgical intervention.

Keywords: CT PNS, Chronic maxillary sinusitis, Periorbital oedema, Endoscopic sinus surgery, Balloon sinus ostial dilation (BSOD)

Introduction

Chronic maxillary sinusitis is an inflammatory condition of the sinuses which is occurring more than 12 weeks at a time.1 The presentation shows the cardinal symptoms of sinusitis, these are: purulent nasal discharge, facial or dental pain, nasal obstruction etc.2 This case report outlines the evaluation and treatment of chronic sinusitis and reviews the role of the interprofessional team in managing patients with this clinical scenario.

Case Presentation:

A 42-year-old female presented to the Department of Periodontology with a 10-days history of right upper sided severe pain in the gums and the teeth and intermittent stabbing pain and sensitivity to the right lower side of the jaw as well. While eating, her toothache used to worsen whenever she tried to bite on some hard food. Upon taking medical history, it was found that, she had an episode of mild cold and coughs a couple of months back. She subsequently received all the treatment modalities for the same.

On intra-oral examination, she was found to have the following details: tenacious calculus firmly covered to all the facial surfaces of the right maxillary premolars and molars (Grade +++), there was presence of minimal stains, BOP was +ve, in an average 5-6mm periodontal pockets were found irt 14, 15, 16, 17. Tender on percussion (TOP) was +ve irt 13, 14, 15, 16, 17, 18. There were certain other teeth which were extremely sensitive even towards cold water and air flow from the 3 way syringe. These teeth are 43, 44, 45, and 46. No endodontic/ periapical periodontal lesions were found on the any of the teeth of 1st quadrant upon taking RVG x-rays. Cervical abrasions were found irt 33, 34, 35. No pus-discharging sinus was found during intra-oral examination. As there were positive findings for periodontal infections, the pt. was further treated with equigingival & sub-gingival ultrasonic scaling to remove the tartar and plaque, followed by curettage at the 1st quadrant. The patient was given broad spectrum antibiotic along with an anti-inflammatory medication for 5 days. A

chlorhexidine gluconate mouthwash was also prescribed for 7-10 days.

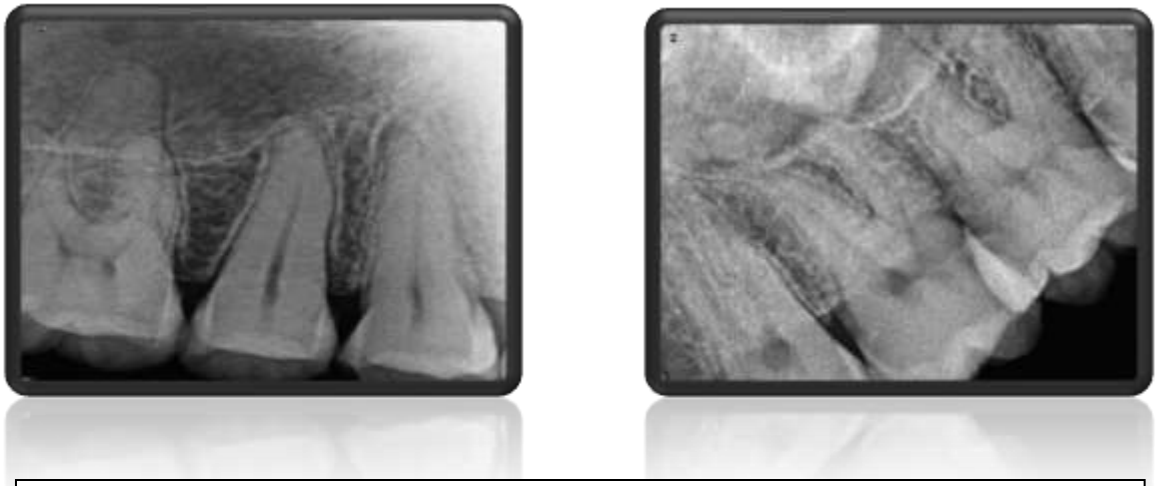

FIGURE 1: RVG radiographs showing no periapical pathologies.

After 2 days, the patient had presented with swelling at the right side of the face. She narrated that there was no improvement in her toothache and no medication was helping to reduce the pain and swelling. She also added that she was not able to sleep at night due to severe toothache. So, for further evaluation, we asked for a CT PNS. Following the report of the CT, the patient was referred to our Otolaryngology specialists.

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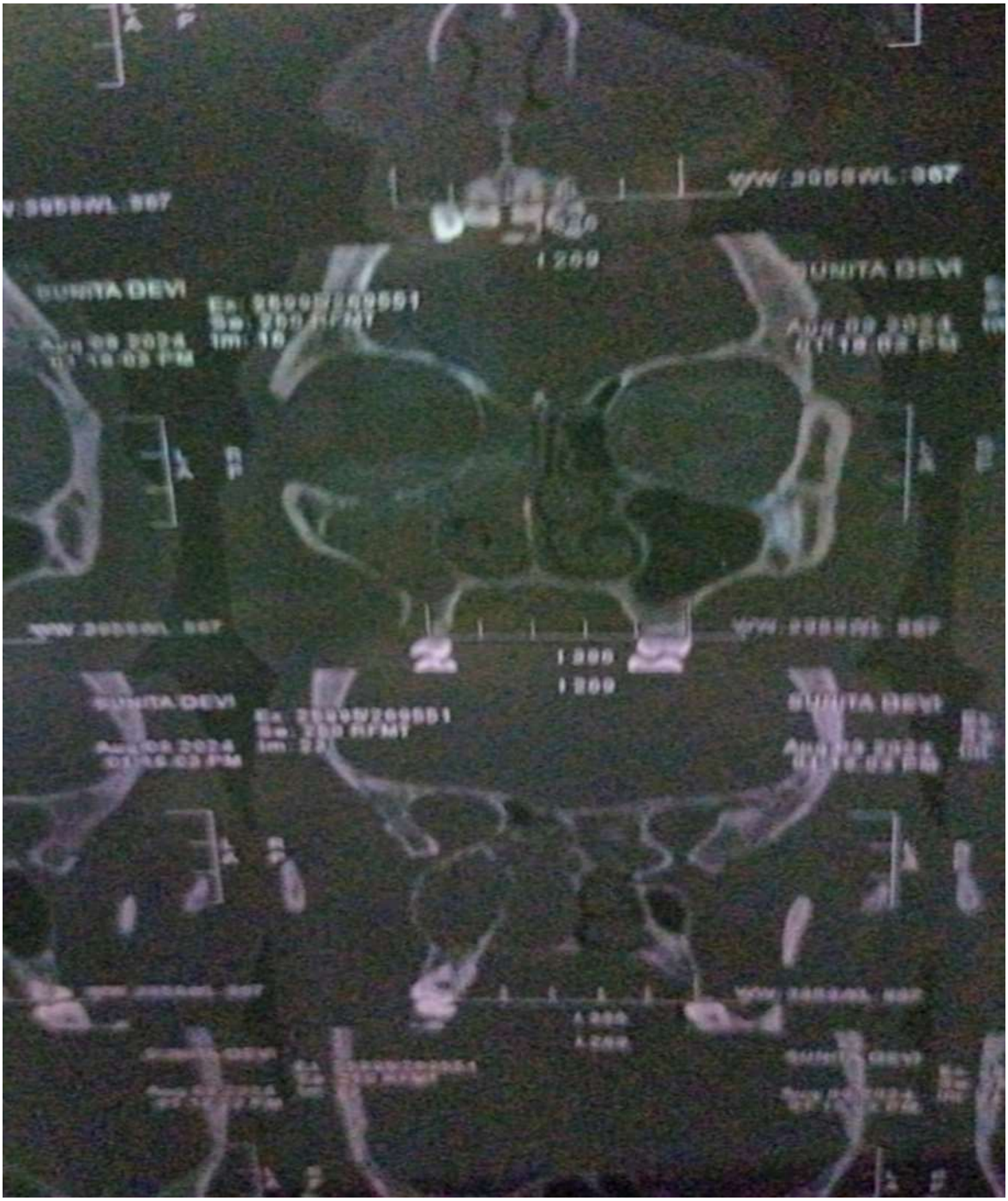
FIGURE 2: CT PNS showing maxillary sinusitis with soft tissue attenuation.



On review in the ENT department, certain clinical findings were found such as, referred pain to the vertex, temple above the inner canthus, right nose was blocked and periorbital oedema was also noted. Neurological examination revealed no abnormality in the function of related cranial nerves. The oropharynx was otherwise normal. Following review of the patient's all the previous dental and medical records; the patient was diagnosed with chronic maxillary sinusitis and referred toothache.

Investigations:

Radiological:

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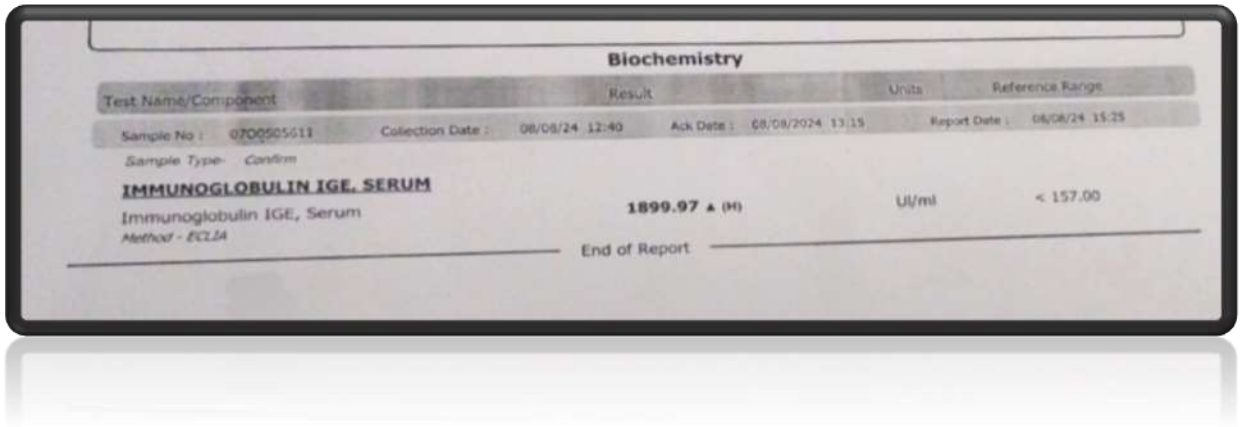
Ct

Right frontal, ethmoidal, maxillary gross opacification and expansion were detected in the CT report. Hyperdense concretions were noted as well. Mild left sided sphenoid sinusitis was also distinguished.

Biochemistry (Serum Ige)

Result of Immunoglobulin IgE (Serum) was excessively high; 1899.97 Ul/ml (Normal range: <157.00) indicating the body is fighting an on-going infection.

FIGURE 3: Serum IgE level showing high value suggestive of an infection.



Differential Diagnosis:

Certain differentials were pondered like: vascular headaches, foreign bodies, fungal infection, brain abscess, myofacial pain, temporo-mandibular joint or jaw pain etc. before coming to the provisional diagnosis.[3]

Treatment:

This case was discussed at the ENT OPD among Two Senior consultants and the best possible decision for the treatment of Chronic maxillary sinusitis was made; i.e., Endoscopic sinus surgery. In this procedure, ENT surgeon uses an endoscope along with some cutting tools to remove the tissue for clearing out all the blockages. This type of endoscopy assisted sinus surgery doesn't require any breach in the skin as it is performed entirely through the nostrils.[4]

Outcome And Follow-Up:

Although, the surgery was a daycare surgery, the patient was discharged the next day after being satisfactorily recovered. She remains under the care of the ENT surgeons' team for further follow up visits.

Discussion:

Rhinosinusitis or simply sinusitis, affects about one in eight adults annually. Generally, the inflammation starts with bacterial or viral infection during a cold. At many times, this infection can result after an allergic reaction, when the immune system attacks the healthy body cells. At that time, it is the body's reaction to that infection which causes the cellular lining of the sinus to swell, blocking the channels that drain the sinuses. This causes mucus and pus to fill up the nose and sinus cavities.

For chronic sinusitis, surgery is an option when the symptoms cannot be controlled with medications and other treatments. The most common type of surgery for the sinuses is called endoscopic sinus surgery; a pencil-sized endoscope is used to see inside the nose and sinuses and guide the surgery. The surgery widens the natural drainage pathways between the sinuses and

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the nose, allowing mucus to get out of the sinuses and air to get in. Medications that are delivered into the nose and sinuses, like sprays and irrigations, can also get into the sinuses better after surgery.[5]

Balloon sinus ostial dilation (BSOD) is a newer treatment option where an endoscope is also used, but instead of carefully removing the bone and tissue that may be blocking a sinus, a balloon is used to make the sinus openings bigger. Although, Balloon dilation is not appropriate for every type of chronic sinusitis case.[6]

Coming to our case, this 42-years-old patient presented with some of the typical signs of chronic localized periodontitis which includes mean pocket depth of 5-6 mm around maxillary premolar and molar, bleeding on probing was there, the patient had more sensitivity towards horizontal percussions than vertical ones which were the definitive indications for issues which are periodontal in origin. Maxillary sinusitis can also present with some of these symptoms and difficulties may arise in distinguishing chronic maxillary sinusitis from the patients with chronic periodontitis.

Detailed medical and dental history in chronological order, comprehensive intra as well as extra-oral examination, waters view/ CBCT/CT imaging along with a multidisciplinary approach; all of these are extremely necessary for assessing and managing these types of cases. As periodontal and endodontic complains can be the initial presentation of this type of case and, therefore, a thorough history with targeted clinical examination are the only ways out.

Conclusions:

Chronic sinusitis may be a benign disorder but, it has significant morbidity.[7] If not treated at the correct time, this may cause meningitis and brain abscess formation, which further increases the chance of morbidity and mortality. As, chronic sinusitis is less common than acute sinusitis, practitioners should inquire in mind for the differentials. Therefore, a mindful history-taking and skilful diagnostic approach along with a multidisciplinary outlook, are inordinately essential in solving and managing these clinical scenarios.[8]

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