Cemento-Ossifying Fibroma: Case Series, Systematic Reviewmeta-Analysis: A Data Base Research

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ABSTRACT
Cemento-ossifying fibroma (COF) is a rare benign fibro-osseous neoplasm that primarily affects the jawbones. This case report presents the clinical features, diagnostic workup, surgical management, and post-operative outcomes of a 23-year-old female patient named Shailaja who presented with pain and swelling in the right maxillary sinus. The report emphasizes the importance of thorough pre-operative evaluation, including imaging and histopathological examination, as well as the significance of post-operative follow-up for successful treatment. Relevant articles supporting the discussion are provided.

Keywords: cemento-ossifying fibroma, fibro-osseous neoplasm, maxillary sinus, pre-operative procedures, post-operative procedures

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INTRODUCTION
Cemento-ossifying fibroma (COF) is a rare benign fibro-osseous neoplasm characterized by the excessive proliferation of fibrous connective tissue and the formation of bone-like and cementum-like structures1. COF most commonly affects the jawbones and may present with symptoms such as pain, swelling, and functional disturbances. This case report describes the clinical management of a 23-year-old female patient named Shailaja who presented with pain and swelling in the right maxillary sinus. The report highlights the importance of comprehensive pre-operative evaluation and meticulous surgical intervention for favorable treatment outcomes.

CASE PRESENTATION
A 23-year-old female patient named Shailaja presented to the oral and maxillofacial surgery clinic with a complaint of pain and swelling in the right maxillary sinus region. The patient reported intermittent pain, aggravated while chewing, along with swelling in the right cheek.(fig;1,2) Clinical examination revealed tenderness on palpation over the right maxillary sinus area. Intraoral examination demonstrated expansion of the buccal cortical plate in the right maxillary molar region. Based on the clinical findings, radiographic investigations were initiated.

PRE-OPERATIVE PROCEDURES

Pre-operative workup included a detailed medical and dental history, clinical examination, and radiographic evaluation. Panoramic radiography (fig;3) and cone-beam computed tomography (CBCT)(fig 4,5,6,7) were performed, revealing a well-defined radiolucent lesion with areas of calcification in the right maxillary sinus region, extending into the molar and premolar region. An incisional biopsy was performed, and histopathological examination confirmed the diagnosis of cemento-ossifying fibroma. Informed consent was obtained from the patient, and a comprehensive discussion regarding the treatment plan was conducted.

OPERATIVE PROCEDURES

Under general anesthesia, a modified Caldwell-Luc approach was performed to access the lesion in the right maxillary sinus. The lesion was carefully dissected from the surrounding tissues, ensuring complete removal while preserving adjacent vital structures (fig 8,9). The surgical site was thoroughly irrigated, and primary closure was achieved. The excised specimen was sent for histopathological examination to assess the margins and confirm the diagnosis of cemento-ossifying fibroma.

POST-OPERATIVE PROCEDURES

The patient was closely monitored during the post-operative period for wound healing and the resolution of symptoms. Regular follow-up visits were scheduled to evaluate the patient's condition and assess treatment outcomes. Serial radiographic examinations, including panoramic radiography and CBCT, were performed to monitor bone regeneration and confirm the absence of recurrence. The patient remained asymptomatic, with no evidence of recurrence during the follow-up period of 3 months. (fig :12,13)

Figure 1,2; Pre-Operative View

Figure 3. OPG

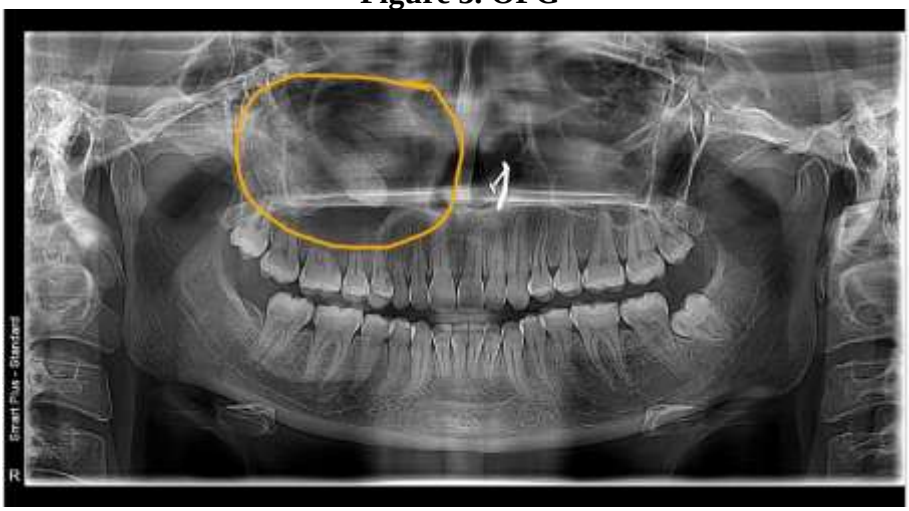
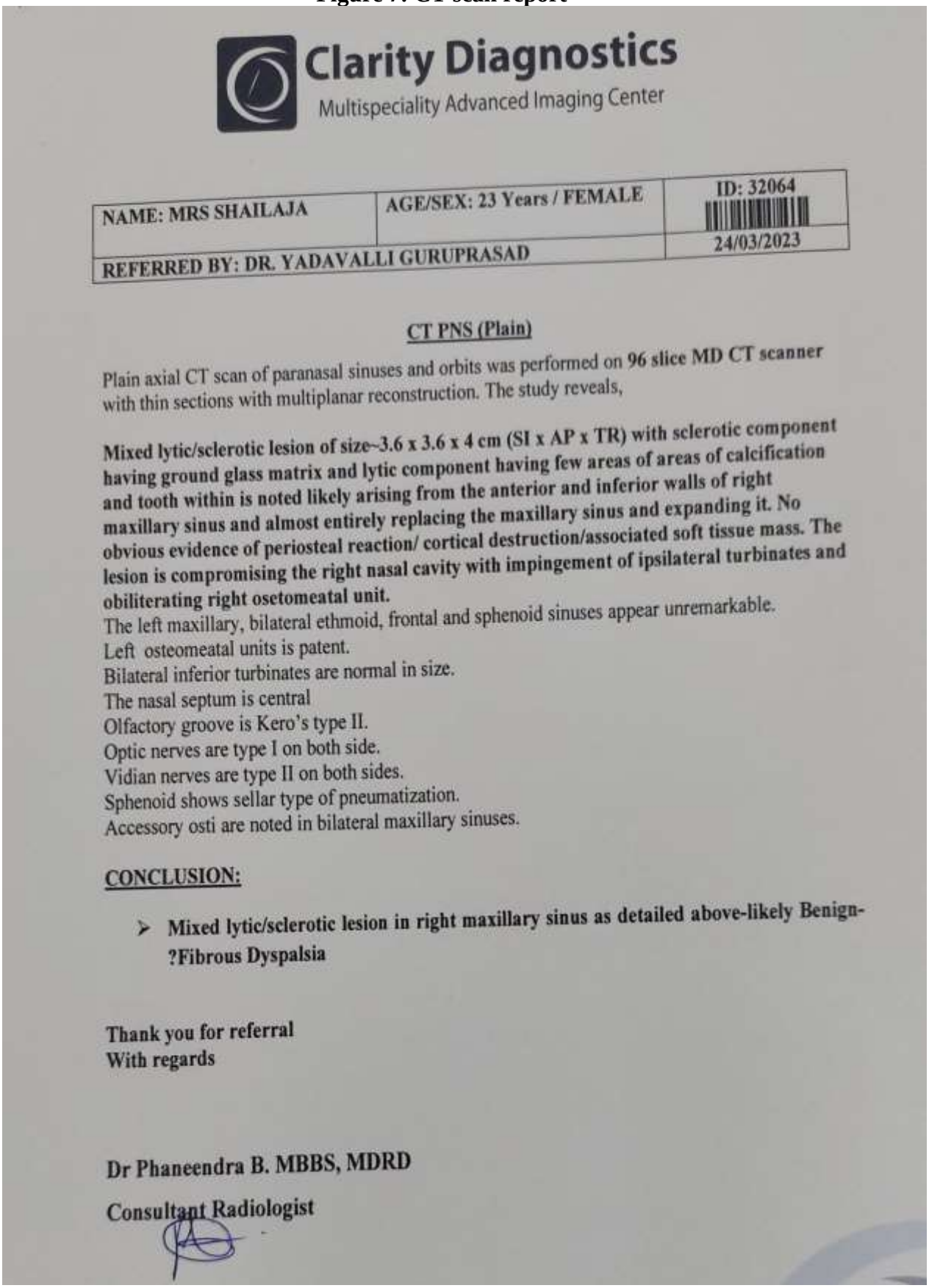


Figure 4 CT axial section

Figure 5 CT coronal section 1

Figure 6; CT coronal section 2

Figure 7: CT scan report



Clarity Diagnostics
Multispeciality Advanced Imaging Center

NAME: MRS SHAILAJA	AGE/SEX: 23 Years / FEMALE	ID: 32064
REFERRED BY: DR. YADAVALLI GURUPRASAD		24/03/2023

CT PNS (Plain)

Plain axial CT scan of paranasal sinuses and orbits was performed on **96 slice MD CT scanner** with thin sections with multiplanar reconstruction. The study reveals,

Mixed lytic/sclerotic lesion of size~3.6 x 3.6 x 4 cm (SI x AP x TR) with sclerotic component having ground glass matrix and lytic component having few areas of areas of calcification and tooth within is noted likely arising from the anterior and inferior walls of right maxillary sinus and almost entirely replacing the maxillary sinus and expanding it. No obvious evidence of periosteal reaction/ cortical destruction/associated soft tissue mass. The lesion is compromising the right nasal cavity with impingement of ipsilateral turbinates and obiliterating right osetomeatal unit.
The left maxillary, bilateral ethmoid, frontal and sphenoid sinuses appear unremarkable.
Left osteomeatal units is patent.
Bilateral inferior turbinates are normal in size.
The nasal septum is central
Olfactory groove is Kero's type II.
Optic nerves are type I on both side.
Vidian nerves are type II on both sides.
Sphenoid shows sellar type of pneumatization.
Accessory osti are noted in bilateral maxillary sinuses.

CONCLUSION:

- **Mixed lytic/sclerotic lesion in right maxillary sinus as detailed above-likely Benign-?Fibrous Dyspalsia**

Thank you for referral
With regards

Dr Phaneendra B. MBBS, MDRD

Consultant Radiologist

Figure 8,9: Intra operative

Figure 10: specimen

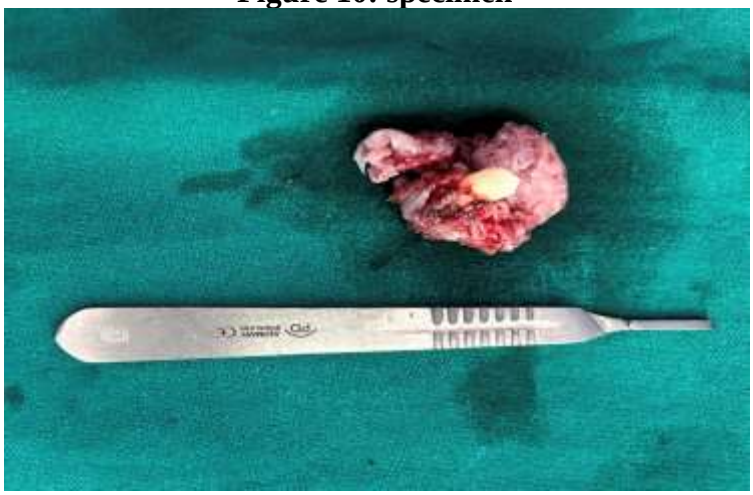


Figure 11: HP Report

MC-2288
Sample Source: AMRUTH BELLARY
Received At:Shivajinagar

Visit Ic

Name: MS SHAILAJA (2445)
Age: 23 Year(s) Gender: F Contact No.:
Ref. No. Referring Dr.:
Reported: 11/04/2023 11:30
Report Status: Final

HISTOPATHOLOGY TEST REPORT

SLIDE REVIEW FOR STAINED SLIDES

IMPRESSION :

Morphological features are most consistent with cemento-ossifying fibroma (See note).
Note: Radiological correlation is essential to distinguish this from fibrous dysplasia which is a close histological differential.

NICAL DATA :-
Right maxillary sinus cystic lesion? Spindle cell lesion.

SECOND OPINION :
Received two paraffin blocks bearing no:2445/23-A,DECAL.

REPORT
The sections examined show parts of a fibroosseous lesion composed of short fascicles of minimally pleomorphic spindle shaped cells which have oval nuclei, inconspicuous nucleoli and scant to moderate amounts of amphophilic cytoplasm within a collagenous stroma. There are foci of new bone formation rimmed by osteoblasts. Cementum like material is also present. Towards the periphery, trabeculae of lamellar bone is noted. Mitotic activity is inconspicuous. Negative for features of malignancy.

SITE :-
Right maxillary sinus.

NOTE 3
his report is made on basis of slide(s) / block(s) submitted

DATE OF REPORTING
11/04/2023

2 Block(s), 2 Slide(s) Enclosed. Pl preserve them carefully.

------ End of HISTOPATHOLOGY TEST REPORT Report ------

Report Entered By
Dr Aswathy Menon

Seen By Pathologist

Reported By Pathologist
Dr. Aswathy Ashok Menon
TNMC NO.: 105802

Dr.Anitha M
Pathologist
KMC NO. - 73865

Anand Diagnostic Laboratory Pvt Ltd - A Neuberg Associate - Neuberg Anand Reference Laboratory Pvt Ltd
Anand Tower, No.54, Bowring Hospital Road,Shivajinagar,Bangalore-560001
Sample collection time is mentioned at the end of the Report
Reference Laboratory | Toll Free: 1800 425 1974 | Web: www.anandlab.com | Email: enquiry@anandlab.com

Page 1

Figure 12,13: post operative

DISCUSSION

Cemento-ossifying fibroma is a rare fibro-osseous neoplasm that requires a multidisciplinary approach for accurate diagnosis and successful management1,2. The pre-operative workup, including clinical examination, radiographic evaluation, and histopathological diagnosis, is essential for proper treatment planning3. Surgical excision with clear margins remains the treatment of choice, ensuring complete removal of the lesion3,4,5. Regular post-operative follow-up is crucial for monitoring healing, detecting potential complications, and assessing long-term outcomes5.

CONCLUSION

This case report highlights the clinical presentation, diagnostic workup, surgical management, and post-operative outcomes of a 23-year-old female patient diagnosed with cemento-ossifying fibroma in the right maxillary sinus. Thorough pre-operative evaluation, including imaging and histopathological examination, aids in accurate diagnosis and treatment planning. Early diagnosis, meticulous surgical resection, and regular post-operative follow-up are vital in achieving successful outcomes in the management of this rare fibro-osseous neoplasm. Further studies are warranted to explore the etiology, pathogenesis, and long-term outcomes of cemento-ossifying fibroma to improve the overall management of this condition.

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