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CASE REPORT

Uncommon cause of non-healing extraction socket with oro-antral fistula- A Case Report

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Abstract

Fungal infections of maxillofacial region are opportunistic, of which Aspergillosis is 2nd most common next to candidiasis. Aspergillosis is caused by Aspergillus (A.flavus, A.fumigatus) occurs in two forms- invasive & non-invasive. Aspergillosis usually affects immunocompromised patients. A case of non-healing upper first molar socket with Aspergillosis of maxillary sinus is described, which was initially thought to be an oro-antral fistula. A detailed account of the initial attempts at management, the resulting complications as well as the final management, till the outcome is described.

Introduction

A case of non-healing upper first molar socket is described, which was initially thought to be an oro-antral fistula. A detailed account of the initial attempts at management, the resulting complications as well as the final management, till the outcome is described.

Case report

A 62-year-old male farmer reported to the Dept. of oral and maxillofacial surgery of the Authors College with a complaint of blood stained mucous discharge from the left nostril on sneezing and foul breath with bad taste since 2 months.

The patient had undergone extraction of upper left permanent first molar 2 months back at his local dentist's office. He had discomfort in the region of the extraction socket. Soon after, expression of a yellowish foul smelling discharge followed from the socket and the patient also had heaviness of the left upper jaw around the same time. He then reported to the dentist with his problems, who diagnosed it as an oro-antral fistula. He was then referred to the author's institution for further management.

The patient was a known hypertensive since 5 years under control with medication, apart from which his medical history was not contributory. There wasn't any history of fever, headache, cough, allergic rhinitis or alteration in voice. He was normally built and without signs of malnutrition.

Extra orally, his face was symmetric, with tenderness over the left malar region being the only abnormality. On intraoral examination, left maxillary 1st Molar (26) and 2nd Molar (27) were missing with a non-healing socket of 26 with blood stained discharge from the opening of the defect. IOPA of 26 regions showed a breach in the continuity of floor of the maxillary sinus. The PNS view showed cloudy opacity of the left maxillary sinus.

A diagnosis of chronic bacterial maxillary sinusitis secondary to oroantral fistula in relation to 26 was made. (Figure-1&2)

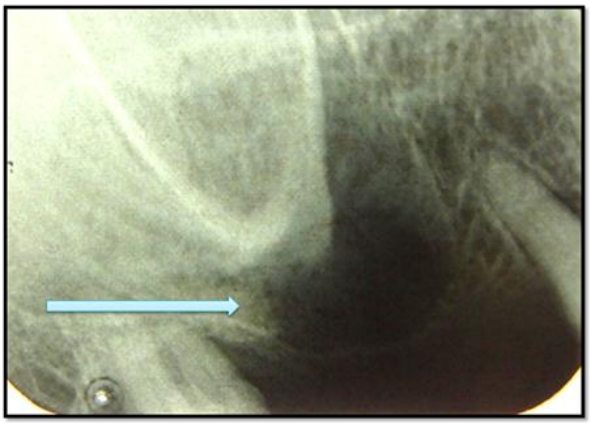

Figure-1. IOPA – Breach in the continuity of floor of the maxillary sinus

Figure-2. PNS – shows cloudy opacity of left Maxillary Sinus

The patient was subjected to antrum regime for 7 days and then extraction socket was curetted and primary closure was achieved. However the socket showed no signs of healing. Exploration of the maxillary sinus through a Caldwell-Luc approach was planned. All of the patient's lab reports including DLC, ESR, HIV, HBsAG and RBS were within normal limits. Intra operatively on reflecting the mucoperiosteal flap, erosion of the anterior wall of the maxilla, with blood stained discharge from the opening was noticed. Through the opening, the maxillary sinus lining was enucleated in piecemeal, but the sinus contents and lining appeared unusual. A brownish, friable mass was found in the left maxillary sinus with excessive bleeding. This, together with the necrotic debris, was completely removed using debridement and suctioning. The floor of orbit remained intact. The surgical wound was then closed and the oroantral fistula was repaired with Rehrmann's buccal flap. The patient was put on Augmentin (amoxicillin-clavulanate) and Metrogyl intravenously for 1 week during the initial post-operative period. (Figure-3, 4, & 5)

Figure-3.Erosion of the anterior wall of maxilla

Figure-4. Debridement of the friable loose mass through the antral opening

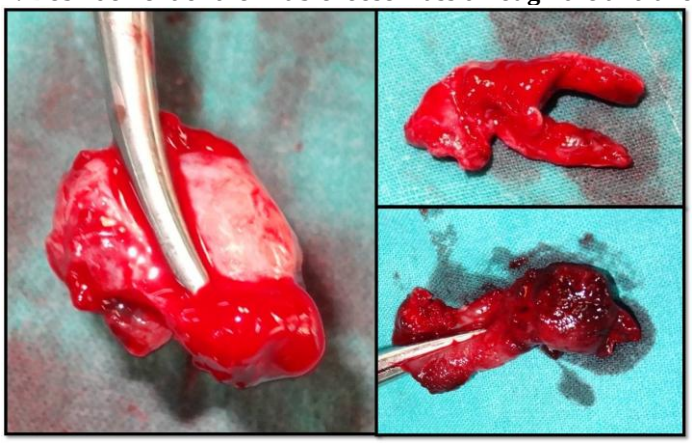

Figure-5. Enucleated specimens

Microscopic examination of the specimen revealed pseudostratified ciliated columnar epithelium and fungal hyphae with acute angulations and fungal masses; the specimen was reported as aspergilloma. (Figure-6)

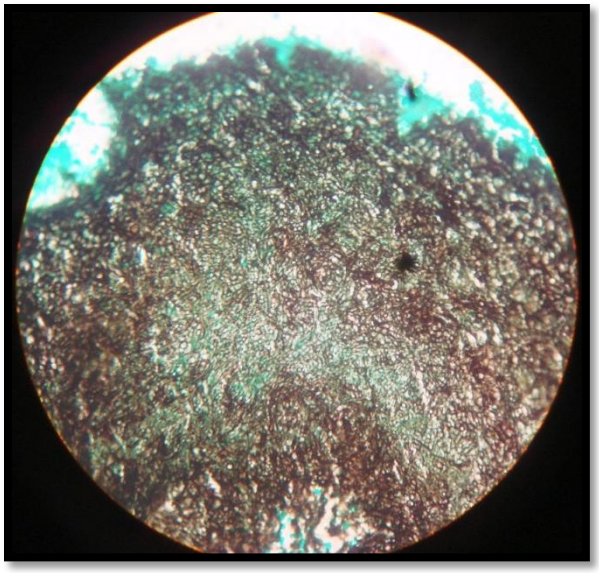

Figure-6. Photomicrograph of the slide, stained using Grocot Gomori Methanamine Silver showing the presence of fungal hyphae and spores. Fungal elements stained black and appear refractile.

The histopathological diagnosis was chronic maxillary sinusitis with aspergilloma – Invasive Aspergillosis of Left Maxillary sinus. Due to the aggressive nature of the lesion the patient was referred to the department of internal medicine for further management with systemic anti-fungal therapy. The patient was then given Itraconazole 100mg, thrice daily for 3weeks. The symptoms of the patient resolved and the PNS view taken 2 weeks later showed resolution of the Left Maxillary sinusitis. (Figure-7)

Figure-7. PNS taken after 2 weeks shows resolution of the lesion

Summary

The patient underwent extraction of 26, a common procedure in dentistry, which led to a common complication, an oro-antral fistula.

Conventional surgical management failed to resolve the symptoms; hence a simple repair under local anesthetic was precluded.

Sinus lining enucleation through an open approach and subsequent closure of the defect was deemed prudent, which was accomplished successfully under general anesthesia.

The histo-pathological diagnosis however was crucial in completely eradicating sinus disease with systemic targeted therapy.

Discussion

Solitary aspergillosis of the maxillary sinus, however, occurs in otherwise healthy patients although it is relatively rare. Symptoms are usually inconclusive.[1, 2]

Antral aspergillosis following tooth extraction or endodontics results in symptoms of localized pain, tenderness, and nasal discharge[3-6], which were the presenting complaints in this case. In spite of the suggestion that an antrolith is diagnostic of aspergillosis in the maxillary sinus, in most cases, muddy, cheesy, and necrotic materials have been observed during surgery.[7-9], like those observed in this case intraoperatively.

Our understanding of fungal infections has changed, as has the management of such conditions. Signs of fungal infection vary from allergic sinusitis and fungal

Masses to invasive fungal sinusitis as part of a wider spectrum of disease. Aspergilloma of the facial sinuses is usually associated with some predisposing factor be it immunosuppression, local tissue hypoxia, or massive fungal inoculation.[2] In the normal host, the disease often presents as an allergy or a low-grade sinus infection resulting in the formation of a fungal mass or aspergilloma.[10-12] According to Katzenstein, sinus mycoses can be classified as (1) noninvasive chronic mycoses (fungus ball), (2) a1lergic mycosis, (3) chronic indolent invasive mycosis, and (4) fulminating invasive mycoses. Types 3 and 4 are found in the immunosuppressed and can be fatal because the inflammatory response is often weak or absent, delaying diagnosis and leading to extensive tissue destruction necessitating extensive surgery and medical care. In the immunocompetent, type 1 and 2 are common, with a granulomatous inflammatory response and necrosis.[3,12-13] The peculiarity of our case lies in the fact that invasive aspergillosis had occurred in an otherwise immunocompetent individual .

With respect to the treatment of Antral Mycosis(AM), it is necessary to remove surgically the sinus fungal masses and ensure the establishment of adequate sinus drainage and aeration via the Caldwell-Luc (CL) procedure or endoscopic sinus surgery (ESS).[14] Aspergillomas may be treated with a traditional Caldwell- Luc operation or by the newer functional endoscopic techniques. The outcome with either is good and there is rarely a need for systemic antifungal substances such as amphotericin B, unless there is invasive disease or the patient is immunosuppressed.[15] Since our patient did have an invasive disease, systemic antifungals were administered.

However, the results of Costa F. et al suggested that ESS with middle meatal antrostomy is the gold standard surgical procedure to manage maxillary AM. General or local antifungal drugs are not indicated. Combined approach with intraoral surgical access from the anterolateral wall of the maxillary sinus has to be reserved for selected cases in which ESS does not permit complete extraction of all fungal concretions or foreign bodies. They also felt that the traditional CL procedure should be avoided because of its detrimental consequences for sinus physiology.[14] It is important to bear in mind that Endoscopic sinus surgery with a middle meatus antrostomy is associated with a technical problem for the treatment of maxillary AM. It does not allow visualization of the angle formed by the bony lacrimal duct and the anterior maxillary sinus wall (lacrimal recess of the maxillary sinus). Permanence of mycotic concretions at this level has been suggested as a possible cause for recurrence.[16]

This case highlights the importance of inclusion of aspergilloma infections when patients present with an asymptomatic radio-opacity of maxillary sinus[2] and also as an uncommon cause for nonhealing extraction socket with oroantral fistula which resist even after an attempt of conservative surgical management.

Conclusion

It is the unique and intricate association of teeth and the maxillary sinus that makes the knowledge of sinus anatomy, physiology & pathology, crucial to the practicing Oral & Maxillofacial Surgeon. One aspect of sinus disease is the management of fungal infections, in this case, aspergillosis, which calls for conservative debridement of sinus, histopathological identification of the cause and systemic medication, when necessary. An organized approach, in such cases, will most often lead to favorable outcomes.

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