

Dental Implant Complicated with Maxillary Sinusitis

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Received: March 25, 2020

Published: April 21, 2020

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Abstract

This article reports a rare complication by iatrogenic cause of a routinely performed dental implant procedure and discusses management of dental implant sinusitis. We also highlight how vigilance and importance to identify this to prevent further complications.

Keywords: Sinusitis; Dental Implant

Introduction

In today's world, with the recent advancement of technology, dental implant has shown great success and gain popularity amongst patients. It has also become a common practice among oral surgeons and dentists [1]. Unfortunately, complications can still occur with dental implants in particular circumstances. Iatrogenic sinusitis is a rare incidence occurring in clinical practice [2].

Foreign bodies can be detected in the paranasal sinuses through a variety of traumatic and iatrogenic events [3,4]. For example, foreign bodies like metal are sometimes found in the paranasal sinuses. However, implant migration or displacement in the paranasal sinuses resulted from surgical inexperience or wrong planning, have been reported in the literature [4,5]. Foreign bodies in the maxillary sinus are relatively uncommon occurrence [2,3]. Endoscopic and open approaches have been described in literature for retrieval of the foreign bodies [5].

Purpose of the Study

The purpose of reporting this case report maxillary sinusitis of the cheek caused by dental implant is to highlight the awareness about possible complications and discuss its clinical management. Here, we also discussed the various imaging modalities and emphasized on the importance for surgical planning.

Case Report

A 52-year-old man presented with a history of foul smelling left nasal discharge and nasal block for 1 week. There was no history of fever, facial pain and toothache. He had a history of insertion of mini dental implant at his left upper jaw 17 months ago. On examination, one of the dental implants was missing, and the patient do not remember losing it. There was also oral antrum communication present at the affected site. Orthopantogram (Figure 1) revealed dental implant in the left maxillary sinus and computed tomography scan (Figure 2a and 2b) showed air-fluid level with an opacity in the left maxillary sinus. He underwent closure of the oro-antral fistula using local flap and removal of foreign body (Figure 3) in the left maxillary sinus via cold-well luc approach after failed endoscopic removal. Post-operative recovery was uneventful.

Figure 1: Orthopantogram revealed dental implant in the left maxillary sinus.

Figure 2a and 2b: Computed tomography scan showed air-fluid level with an opacity in the left maxillary sinus.

Figure 3: The foreign body (dental implant) upon removal via Cald-Well Luc approach.

Discussion

Foreign bodies in the paranasal sinuses usually goes unnoticed till a long period. In our case report, dental implant migration was unnoticed till patient has clinical symptoms of foul-smelling nasal discharge and block for just a week.

There are few possible theories of explanation of implant migration; it was proposed, probably due to nasal air pressure changes, peri-implantitis caused by inflammatory reaction around the implant or wrong distribution of occlusal forces leading to bone resorption [2-4].

Migration of dental implant into the maxillary sinus can be associated with oro-antral communication and/or infection that may involve other sinuses. To prevent further more serious major complications such as pansinusitis, panophthalmitis and orbital cellulitis, presence of the displaced foreign bodies into the sinuses, should be removed as soon as possible [6].

Besides, clinical symptoms and detection of foreign bodies via nasal endoscopy, imaging techniques play an important role for pre-operative diagnosis and surgical planning. Visibility of detection of foreign bodies on plain radiograph depends on their ability to absorb Xray and the tissue in which they are embedded [7]. Nevertheless, computed tomography (CT) is the preferred imaging modality of choice for detection of the majority of foreign bodies [2,8]. Our case, an orthopantogram (Figure 1) managed to show a

dental implant in the left maxillary sinus and CT Paranasal sinuses (Figure 2) showed air fluid level and an opacity at left maxillary sinus.

In oral surgery intervention, surgical removal of dental implants is not common. The treatment modalities for implants displacement into the maxillary sinus have been proposed: an intraoral approach consisting of elevation of a mucoperiosteal flap and the creation of a bony window and transnasal approach using functional endoscopic sinus surgery (FESS) [2,7]. Treatment, however, vary according to the presence of ostium obstruction, oro-antral fistula or sinusitis [8].

Although, there are various of treatment options proposed by different authors with its efficacy, the surgical planning shall be adopted according to the surgeon's preference, ease of surgical access and the associated complications.

Overall, surgical removal of foreign bodies in the sinus regardless of the material should be done to avoid the possibility of sinus infection [9].

Conclusion

We should be aware that foreign bodies can be inserted into the maxillary sinus by dental treatment. Foreign bodies in the paranasal sinuses vary in their size and location. Open approaches are better suited in cases of large foreign bodies or when it is impacted as in our case. Hence the surgeon must be familiar with the different approaches for removing them.

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