CASE REPORT

Management of Oroantral Fistula with Root Displaced into Maxillary Sinus: A Case Report

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Abstract:

Oroantral communication is a common sequalae following extraction of maxillary posterior teeth. If it fails to resolve within 48 hours, epithelization of the tract occurs and fistula formation results. It may manifest as nasal regurgitation of fluid during drinking, sinusitis etc. Effective management of the same is required to prevent long term complications. Management strategies ranges from palatal splint, alloplastic materials to buccal advancement flaps, sandwich techniques etc. Effective management requires individualized treatment plan with consideration about size of the fistula, time elapsed, preexisting infection and host defenses.

Key words: Oroantral fistula, Cald-wel Luc approach, displaced root, maxillary antrum.

Introduction

Unnatural communication between oral cavity and maxillary sinus is termed as oro-antral communication[1]. Root or fragment displaced into maxillary sinus is a common complication following extraction of maxillary posterior teeth[2]. Immediate closure of oro-antral communication within 48 hours is indicated; if not may result in chronic oro-antral fistula[3]. Many methods are described in the literature for effective management of this condition which include buccal or palatal alveolar flaps, their modifications, alloplastic materials like gold plate, gold foil, polymethylmethacrylate, lyophilized collagen and autogenous bone grafts[4]. Here we report a case of root displaced into antrum after extraction of first molar and its clinical, radiographic findings and management.

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Case Report:

A 40 year old male presented with chief complaint of leakage of liquids through nose since 1 month. Patient gives history of extraction of left upper back tooth 1 month back. Also gives history of pain in left cheek region since 1 week. Pain is throbbing type and is continuous. There was no associated fever, difficulty in chewing or mouth opening.

On extraoral examination, no abnormalities were detected.

On intraoral examination, a fistula is noted with respect

Fig 1: Intraoral Examination

to maxillary left first molar region (26) (Fig 1). Mirror fogging test and water holding test was positive. Surrounding area appears normal. On palpation, inspectory findings were confirmed. Tenderness was present over vestibular region.

Cone beam computed tomography (CBCT) revealed retained root with respect to left maxillary sinus (Fig 2).

It was provisionally diagnosed as Oroantral fistula with retained root in left maxillary antrum and was treated using Caldwel Luc approach under general anesthesia.

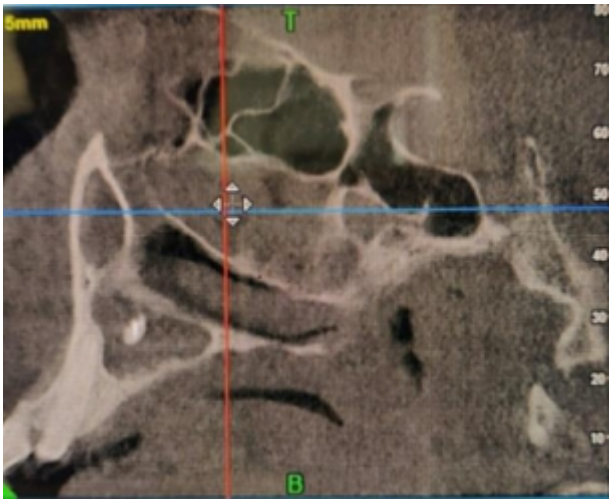

Fig 2: CBCT

Fig 3: Intraoperative photographs

Under general anesthesia, a crestal incision was given from 28 to 25 region. Full thickness mucoperiosteal flap was raised. Bony window created using postage stamp technique to approach the sinus. Root tip was removed using the opening created (Figure 3). A silky cleansing of the site was performed with elimination of the fistulous cord [4]. A saline and betadine rinse to cleanse the sinus was also performed.

Periosteal scoring was done and buccal flap was advanced following removal of fistulous tract and freshening of the margins to close the defect.

Horizontal mattress sutures were placed and patient was put on antibiotics, analgesics and nasal decongestants for one week.

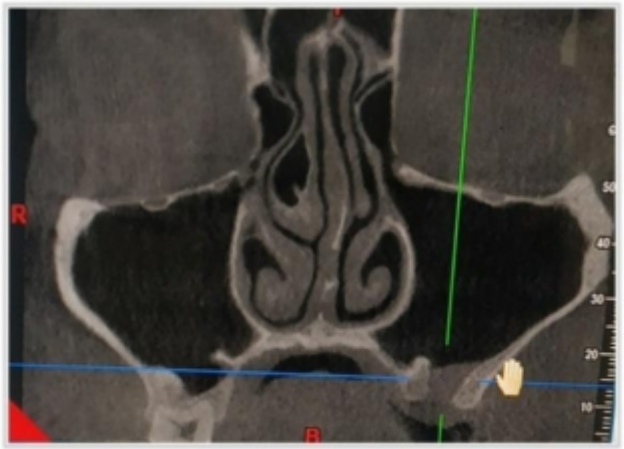

Fig 4: CBCT Postop

Postoperative follow up was done at 1 week, 2 weeks 1 month and 6 months (Figure 4). Healing was uneventful with closure of fistula.

Discussion:

Oroantral fistula is a common sequelae following extraction of maxillary posterior teeth[5].Perforation of the sinus floor occurs due to close anatomical relationship between teeth and antrum which complicates the procedures like extraction, periapical surgery, cyst or neoplasm removal, placement of implants etc[6]. Maxillary second molars are the teeth most frequently associated with formation of oroantral communication with an incidence of 45%, followed by third molars (30%), First molars (27.2%) and first premolars (5.3%)[9].

Oroantral communication or fistula presents with fluids escaping from oral cavity into the nostril, chronic sinusitis, change in voice resonance and discharge from extraction site[7].

Conebeam computed tomography is a useful diagnostic aid which permits to identify thickening or opacification of sinus mucosa, nasal meatus aeration or pathological status of ethmoidal or other sinus[4].

The size of the fistula, the time of diagnosis and the presence of sinus infection are important aspects to be considered while deciding the treatment plan[8]. Various modalities of treatment which are described in the literature include buccal advancement flap, palatal rotation flap, combination flap, buccal fat pad, bone grafts, non-surgical modalities like palatal splint, or this techniques in combination as a two layered or three layered closure(Sandwich technique).[5,11]

Closure of fistula is technique sensitive and if the protocol not adhered may result in recurrence[10]. Successful oroantral fistula closure requires methodological and systemic treatment approach which includes control of local factors of infection, sinusitis, optimizing general health and choosing appropriate surgical technique tailored to an individual patient[5].

Common reasons for failure or recurrence include impairement of blood supply due to excessive tension on the flap, inadequate irrigation and antibiotic therapy for the existing sinus infection, inadequate removal of epithelialized margins and inadequate bony margins trimming prior to closure or post-operative instructions not given properly or patient negligence[7].

Conclusion:

Closure of long standing oro-antral fistula often presents as a challenge to surgeons. Controlling chronic sinusitis, nasal regurgitation, flap advancement, decision on single or double layer closure requires a systematic approach for generating an effective treatment plan.

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References:

1. Oswal NP, Sayed AR, Khutwad GK, Vadane AK. The oroantral fistula: A case report. J Oral Med Oral Surg Oral Pathol Oral Radiol, 2016; 2:237-239
2. Santos JW de M, Oliveira ER da S, Chaves Neto HP, Ramos FS, Fonseca Neto B da, Gomes E da S, Germano AR. Modified Caldwell-Luc Technique to retrieval of tooth fragment displaced into the maxillary sinus: A case report. RSD. 2021; 10: e26210212353
3. Diachkova E, Morozova E, Blagushina N, Tarasenko S. The Modified Caldwell-Luc Approach with the Use of Collagen Material for Treatment of a Chronic Perforated Maxillary Sinusitis. Case Rep Dent. 2020; 2020: 8874227
4. Mainassara Chekaraou S, Benjelloun L, El Harti K. Management of oro-antral fistula: Two case reports and review. Ann Med Surg (Lond). 2021; 69(102817):102817.
5. Ramanathan A, Acharya V. Closure of long-standing oroantral fistula: Surgical challenge in medically compromised patient-A case report. Clin Case Rep. 2020; 8:1957–61.
6. Rivera CJ, Hernández VA. Oroantral communication. A case report. Rev ADM. 2013; 70: 209-212.
7. Khandelwal P, Hajira N. Management of oro-antral communication and fistula: various surgical options. World J Plast Surg. 2017; 6:3-8
8. Kwon M-S, Lee B-S, Choi B-J, Lee J-W, Ohe J-Y, Jung J-H, et al. Closure of oroantral fistula: a review of local flap techniques. J Korean Assoc Oral

Maxillofac Surg. 2020; 46:58–65

9. Parvini P, Obreja K, Begic A, Schwarz F, Becker J, Sader R, et al. Decision-making in closure of oroantral communication and fistula. Int J Implant Dent. 2019;5:13.
10. George E. Triple-layered closure of an oroantral fistula: A case report. Int J Oral Maxillofac Implants. 2018; 33:e33–6
11. Sandhya G, Reddy PB, Kumar KA, Sridhar Reddy B, Prasad N, Kiran G. Surgical management of oro-antral communications using resorbable GTR membrane and FDMB sandwich technique: A clinical study. J Maxillofac Oral Surg. 2013; 12:254–9

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