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Foreign Body Displacement For The Maxillary Sinus And Surgical Removal By The Caldwell-Luc Technique: Clinical Case

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Abstract

Until some time ago it was relatively rare, the presence of foreign bodies in the sinuses of the face and the most commonly found ones were of residual roots or even of dental elements that by intimal conditions were introduced in the maxillary sinus, practically being remnants of perforating traumas. With the advent of the Age of Implantology, it has become more common to find cylinders introduced into the maxillary sinuses, mainly due to failure in surgical planning, lack of preparation of the specialty, or even failures at the time of cylinder placement, culminating in an important iatrogeny. The frontal and maxillary sinuses are the most frequently involved although there are reports involving the ethmoid and sphenoidal sinuses. This article reports the case of a patient with a foreign body in the maxillary sinus, the removal of which was performed using the Caldwell-Luc technique, with successful surgery, presenting good patient recovery.

Keywords: sinus maxillary; foreign body; oral surgery

Introduction

The maxillary sinus is represented by a pneumatized space, located bilaterally, inside the maxillary bone. The displacement of foreign bodies into its interior is a commonly encountered occurrence resulting from penetrating insults, as in high-energy kinetic traumas, in which objects (firearm projectiles, pieces of glass, stones, wood, and many others) Can be thrown into the breast and also during dental procedures when teeth, tooth roots, dental cement, printing paste, gutta percha cones, dental amalgam, implant cylinders, can also be thrown into the interior, characterizing Important iatrogenic 1,3,7,9,10.

In dental medicine it is common to find errors before, during and after treatments, and these iatrogenies can occur in all phases of the dental act, from the relationship with the patient, in the diagnosis, and in the treatment. The main and most common reasons refer to lack of planning, diagnostic error, human failures during treatment and accidents 2, 8,10.

To minimize the occurrence of these errors, the traditional sequence in clinical care must be strictly adhered to, ie a detailed anamnestic harvest, followed by meticulous physical examination, the request for complementary tests, the construction of diagnostic hypotheses and only from this point to decide Which conduct to be adopted, aiming at effectiveness and success in the planned conduct. 8.11

The Dentist when identifying the presence of a foreign body in the maxillary sinus has a challenge in both the diagnosis and the surgical procedure, since factors such as size of the object, difficulty of access, anatomical proximity of the foreign body to the adjacent vital structures must be taken In consideration for the choice of the best surgical technique 6,7,9.

The Caldwell-Luc technique has been suggested as a means of access to the maxillary sinus, allowing its inspection and treatment of the diseases that affect it. This technique is used for the treatment of irreversible chronic maxillary sinusitis, removal of dental roots and foreign bodies, excision of antrochoanal polyps, mucoceles, pioceles, tumors, odontogenic cysts and repair of fistulas 3,4,5,6,11

The present report aims to present a clinical case of displacement of a dental implant into the maxillary sinus and its surgical removal through a bone window in the lateral wall of the maxilla by the technique of Caldwell Luc.

Case Report

Patient RSN, female, 52 years old, white skin, attended the Clinic referred by another professional for assessment, diagnosis and therapeutic conduct, and the reason for the consultation was for evaluation of foreign body in the maxillary sinus. In the anamnesis the patient reported that at the time of placing the dental implant there was the displacement into the maxillary sinus. Imaging, Panoramic Rx and Cone-Beam Tomography (Figure 3) were performed, which are important for the diagnosis and treatment planning to be recommended.

Images were obtained with KODAK 90003D tapered beam apparatus. The axial sections were obtained with a thickness of 0.2 mm. Parasagittal reconstructions were obtained with 1.0 mm spacing between the cuts. A ruler can be seen below each parasitic cut and panoramic image with a 10 mm scale. From the axial cuts and multiple sections reconstructions in the CD, It can be observed (Figure 2 and 4):

- Partially edentulous jaw absent teeth 18, 16, 15, 14, 26 and 28.

- Discrete-Moderate alveolar bone loss in the present teeth. Relate to clinical data.

- Presence of a screw for fixation of material for bone grafting in the edentulous region of the tooth 14. Place figure separately from the CT

- Endodontically treated teeth 17, 13 and 25.

Parasagittal, Axial, Sagittal and Coronal sections:

Sixty parassagittal sections were numbered from 0 to 29 (right side) and 30 to 59 (left side), 01 axial cut, 02 sagittal cuts and 1 coronal cut, which showed:

- Significant thickening of the sinus mucosa in the right maxillary sinus.

- Hyperdense, heterogeneous, irregular image, adjacent to the floor of the right maxillary sinus suggestive of biomaterial bone graft material associated with a maxillary sinus survey, visualized in the parasagittal and multiple sections.

- Hyperdense, heterogeneous, regular image, adjacent to the floor of the left maxillary sinus, suggestive of biomaterial bone graft material associated with maxillary sinus lift, visualized in the parasagittal and multiple sections. The remaining alveolar bone in the teeth 16, 15, 14 and 26 region presents a moderate but significant reduction in height, heterogeneous alveolar bone trabeculation and bone cortices with small irregularities. Tomographic image compatible with bone graft material inside the right maxillary sinus, visualized in the sagittal section. Tomographic chart suggestive of a bone graft associated with maxillary sinus lift in the edentulous region of the teeth 16, 15, 14 and 26. Tomographic imaging suggestive of the alveolar bone border with variation in height and heterogeneous alveolar bone trabeculation in the region of the teeth 16, 15, 14 and 26.

Measurements were made between the vital anatomical structures and the corresponding alveolar bone ridges to plan dental implants in the region of the teeth 16, 15, 14 and 26.

It suggested the presence of a foreign body, of radiopaque intensity, measuring approximately 03 x 08 mm in size, with characteristics of dental tissue, located in the left maxillary sinus near the distal root of the first molar.

The imaging tests confirmed the diagnostic hypothesis and were also used as an important auxiliary resource in the choice of surgical technique.

Confirmation of the root-root diagnosis was acquired by removal of the root canal through the Caldwell-Luc surgical procedure (Figure 2) under local anesthesia. An incision approximately 3 cm from the region of the canine pillar to the region corresponding to the zygomatic pillar was performed according to the description of the technique. By exposing the anterior wall of the maxillary sinus and the base of the zygomatic bone through the mucoperiostal detachment, an elliptical shaped window was performed with spherical drill # 6, under constant irrigation with 0.9% saline solution. The fragment was located and removed with the aid of curve Healstead clamp, constituting of a root remainder (Figure 5). Continuous suturing was performed with vicryl 4.0 wire (Ethicon, Johmson & Johmson; São José dos Campos - SP). The postoperative medication was Amoxicillin 500 mg - 8/8 h for 7 days

Currently, the patient is being followed up, with no complaints or episodes of inflammatory process recurrence, as well as any alteration of normality in the maxillary sinus.

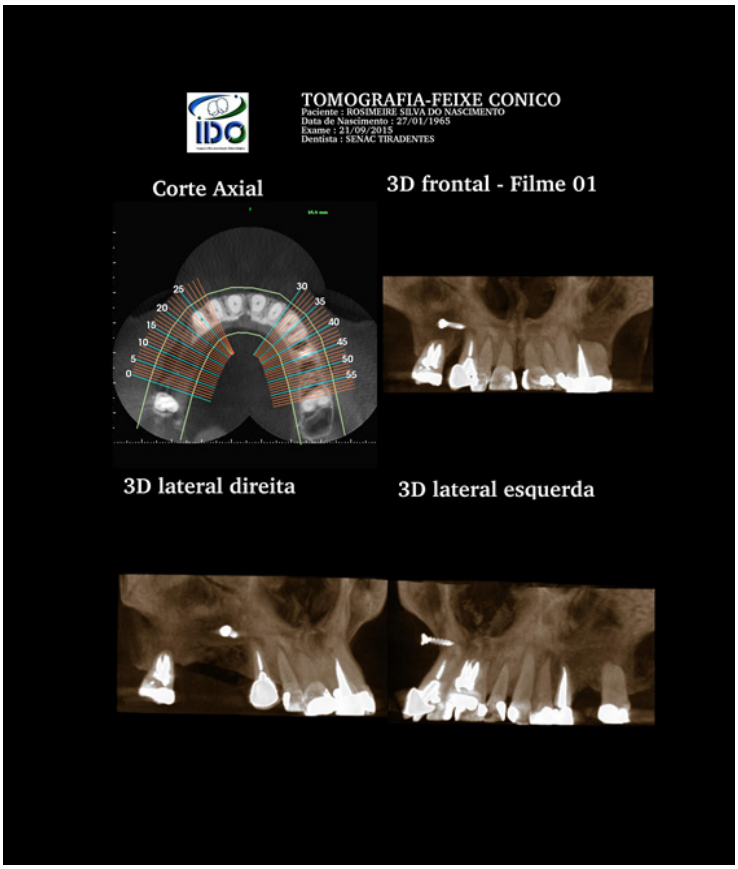

FIG. 1 - Tomography of the Cone Ray - Axial sections

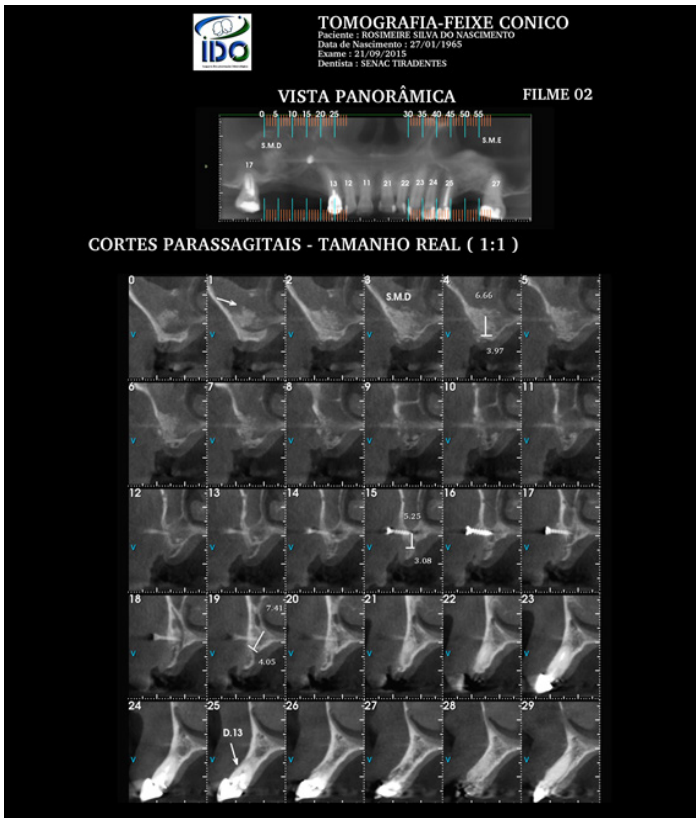

FIG. 2 - Tomography of the Conic Beam – Parasagittal sections

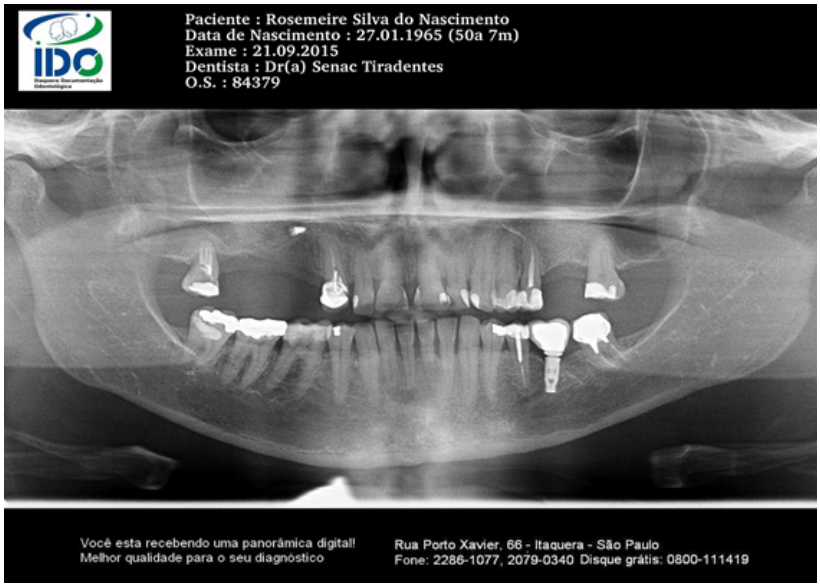

FIG. 3 - Panoramic Radiography

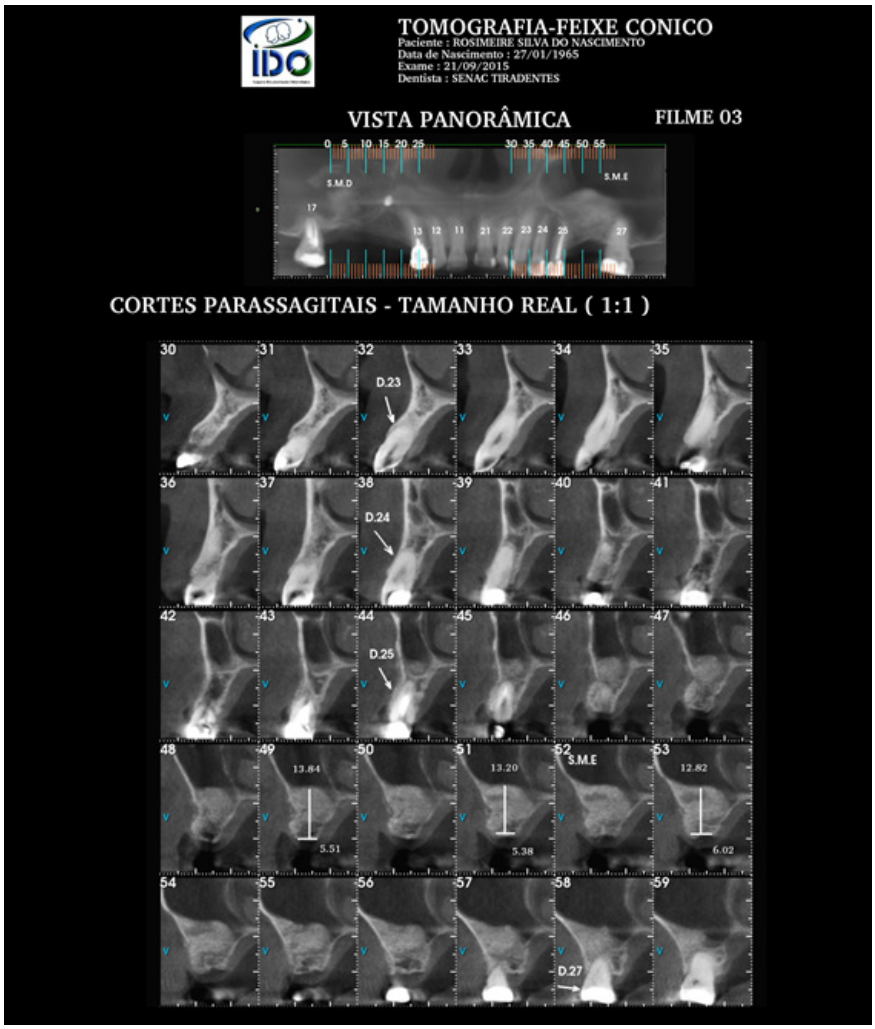

FIG. 4 - Conic Beam Tomography - Parasagittal sections - Actual Size

FIG. 5 – Object (body foreign) removed from the maxillary sinus

FINAL CONSIDERATIONS

With the possibility of accidents occurring during surgical procedures and the presence of foreign body penetration in the maxillary sinus in routine dental care, it is of great relevance for dentists the complete anatomical domain of the region and the specific training for Interventions when necessary.

Panoramic radiography is the most commonly used complementary exam, although it can cause a widening measured around 25%. In this perspective, the location of a foreign body in a two-dimensional radiographic plane is difficult, requiring three-dimensional images that are provided by computed tomography.

Treatment of changes in the maxillary sinus, especially the removal of foreign bodies, is frequently reported in the literature using the Caldwell-Luc technique, although there are reports of alterations in the maxillary sinus after this type of surgery, such as fibro-osseous proliferations, and Antral contraction. The Caldwell-Luc technique allowed easy access and visualization of the foreign body and altered mucosa allowing easy removal.

To minimize the occurrence of iatrogenies, the traditional sequence in clinical care must be strictly adhered to, ie a detailed anamnestic harvest, followed by meticulous physical examination, the request for complementary tests, the construction of diagnostic hypotheses and only from this point decide Which conduct to be adopted, aiming at effectiveness and success in the planned conduct promoting health and improvements in patients' quality of life.

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