


Presentation of a clinic case: asymptomatic rhinolithiasis in a nine-year-old child

Yanne Mendes ¹
Elaine Oliveira Sales ¹
Lígia Oliveira Polizzi ¹
Luciene Dornas Mendes ¹
Alexandre Camisassa Diniz
Leite Greco ¹
Carolina Drumond de Barros
e Azevedo ¹
Flávio Ricardo Manzi ^{1*} 

Abstract:

Introduction: Rhinolith is a petrea formation, relatively uncommon, which develops itself in the nasal cavity and it is rarely asymptomatic. It is formed from the deposition of organic and inorganic compounds, on a foreign body and it can initiate symptoms like runny nose, nasal obstruction, foul odor and epistaxis. As the rhinolith has evolved, it can bring more grave complications as oronasal perforation and nasal septum deviation. The choice treatment is usually based on the surgical removal of the calcified mass. **Objective:** This study aims at relating a rare case of asymptomatic rhinolithiasis accidentally diagnosed in the left nasal cavity of a 9-year-old child. **Case Report:** Male patient, 9 years old, under a dental treatment was sent by the clinician for the image exams achievement aiming at visualizing a supernumerary tooth located on the anterior maxilla region promoting the 21 dental tooth migration. The patient was subjected to a Computed Tomography Cone Beam. It was observed, on this exam, the presence of a supernumerary tooth in formation, a calcified mass on nasal cavity's upper third on the left side, with dimensions of 1cm width and 1,5 cm height and depth, promoting partial obstruction of oropharynx on the left side. It was also observed, adenoid hypertrophy. **Conclusions:** The case related showed how important are the image exams to do the precise diagnosis on this pathology, in order not to pass unnoticed during many years, thus leading the patient future serious complications. The recognition of this entity in routine radiographs exams, by the dental surgeon it is of a great importance for to the precosis diagnosis and treatment.

Keywords: Nasal Cavity; Sinusitis; Diagnostic Imaging.

¹ Pontifical Catholic University of Minas Gerais, Department of Oral Diagnosis - BELO HORIZONTE - MG - Brasil.

Correspondence to:
Flávio Ricardo Manzi.
E-mail: manzi@pucminas.br

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INTRODUCTION

Rhinolith is a petrea formation which is usually developed in the middle third of nasal cavity, frequently in its lower portion. The (rhinolithiasis) is a rare pathological condition, which forms itself from the organic and inorganic materials deposition, on a foreign body laid up inside the nostrils. This condition can promote symptomatology, as the same increases its size. The most frequently symptoms of that disease are the nasal obstruction, foul odor, runny nose and epistaxis, being the same, easily mistaken with the chronic sinusitis symptoms¹. More seriously complications can also occur, like a deviation and perforation of the nasal septum, destruction of the side wall of the nasal cavity and the involvement with the maxillary sinus².

Children have the common habit to put small objects on the nasal cavity, and for fear of a punishment, they don't reveal this fact of their parents, hiding thus important information on the anamnesis. As the compounds deposition on the foreign body happens slowly and gradually, the demonstrations of the rhinolithiasis occur with the high incidence in teenager patients or on the adulthood³.

Most of the time the origin of the foreign body is exogenous, from the through external, like grains, seeds, pieces of plastic or metal, and these, can be put previously on the nasal cavity, or enter up there through the choanae during possible vomiting, sneezing or coughing. However, although rare, the origin of this objects can be endogenous, like secretions, parched, clots, mucosal necrosis, tooth pieces, among others^{2,4}.

The Rhinoliths are usually unilateral and single, having irregular surfaces, several sizes and, depending on of their composition and their features from breathing air, and they can present blackish coloring.

The diagnoses of this disease is usually accidental when this pathologic condition presents itself asymptomatic, highlighting, thus, the importance of the image exams as the conventional radiographies and the Computed Tomography (CT) in order to get the right diagnosis of the lesion, its right localization, proposing the most proper planning to be carried out, promoting this, a likely prognosis.

However, it is worth to remember that the conventional radiographies offer limited images when it is rhinolithiasis, therefore, they are of great value only in the disease identification, which makes it necessary the achievement of others methods of images in order to get more accurate information as the dimension

and exactly localization of the rhinolith, beyond of its relation with the adjacent anatomical structures. At present, the CT presents high sensitivity and specificity for the identification of the calcifications.

The most conventional treatment for the rhinolithiasis is the surgical removal, which constitutes on the mineralized mass removal, clearing, thus, the airways upper and removing the other disease symptoms. There are also cases where the rhinolith is asymptomatic and therefore, it is not harmful to the patient, and its removal it is not necessary, only its clinic and radiograph follow up.

This study aims at relating a rare case of asymptomatic rhinolithiasis accidentally diagnosed in the left nasal cavity of a 9-year-old child.

CASE REPORT

A 9-year-old male patient, feoderma, under a dental treatment was sent by the clinician for the image exams achievement aiming at visualizing a supernumerary tooth located on the anterior maxilla region promoting the 21 dental tooth migration.

To obtain the diagnosis and the preparation of the appropriate treatment plan, the patient was subjected to a CT cone beam. It was observed, on this exam, the presence of a supernumerary tooth in formation, in vertical position, by palate in relation to the 21 tooth and promoting the migration of the same. It was found, together, a calcified mass on nasal cavity's upper third on the left side, with dimensions of 1cm width and 1,5 cm height and depth, promoting partial obstruction of oropharynx on the left side. It was also observed, adenoid hypertrophy (Figures 1 and 2). From the tomographic cuts, it was carried out the 3D reconstruction where the supernumerary and the calcified mass can also be visualized inside the nostrils (Figure 3).

Thereby, the Rhinolith diagnosis was reached. The patient shows symptomatology, epistaxis or purulent nasal discharge. The patient hasn't remembered in placing smalls objects on the nasal cavity, which could get lodged, and unleashed the lesion, therefore, the presence of this calcification was unknown by the him.

As the patient doesn't present painful symptomatology and the adjacent structures to calcification were not affected, it was opted for the medical monitoring. If the patient will present symptomatology or be detected changes in the adjacent tissues to Rhinolith, choose for the surgical removal of the same.

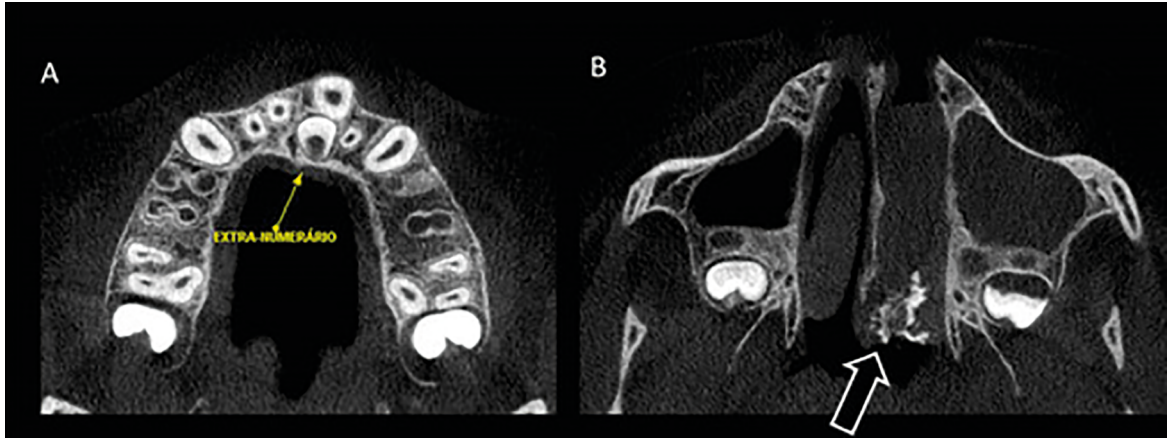


Figure 1. Computed Tomography images - Axial cuts. A: the presence of supernumerary tooth in formation for palatine in relation to 21 tooth (arrow) B: the presence of calcified mass (indicated by arrows).

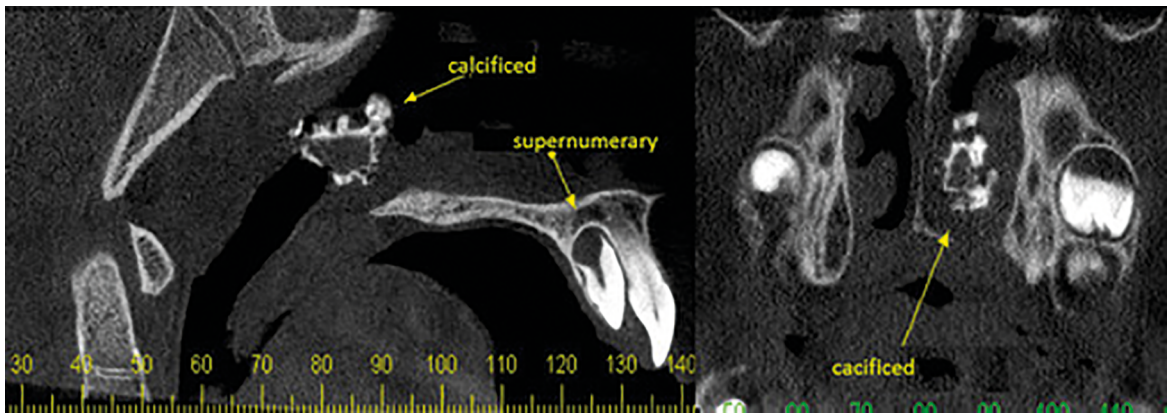


Figure 2. Computed tomography Images - A: sagittal cut- presence of supernumerary tooth in formaton for palatine in relation to 21 tooth (arrow) ande the presence of calcified mass (indicated by arrows) B: coronal cut-showing the (calcifications) promoting a partial obstruction of the left side's airmail.

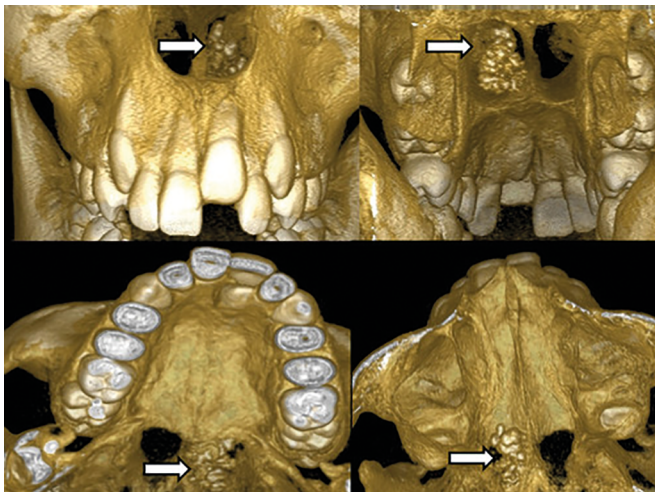


Figure 3. Computed Tomography Images - Reconstructions in third dimension(3D) - in several sights showing the rhinolith on the posterior portion of the left nasal cavity(indicated by arrows).

DISCUSSION

The origin of the Rhinolith's matrix can hardly ever be totally enlightened, by the difficult of knowing the home nature of the nucleus after its inlay. Some authors defend a mechanism of endogenous formation of the Rhinoliths (similar to the gallstones, urinary and salivary formation), in which those have as matrixes bacteria and leukocytes, on which, secondarily calcium and magnesium would be deposited. However, the rareness of the bilateral Rhinolithsis reinforces the theory of an exogenous mechanism where there is a process of focal reaction to a foreign body^{1,4}.

However, apart from the origin of the Rhinolith's matrix the formation process of its formation is similar; since from the presence of a foreign body on the nasal cavity a local inflammatory response occurs,

triggering the deposition of some substances which can be carbonate and calcium phosphate, magnesium, iron and aluminum, and, glutamic acid and glycine. These substances cause a slow and gradual growth, increasing, thus, its size².

The chemical composition of the Rhinolith can vary widely, Sharma, in 1981, described in his work, the follow composition: water (2.9-6.9%), magnesium phosphate (19.46%), calcium carbonate (20.69%), organic material (13.2-31.9%) and calcium phosphate (44.7-79.4%)^{1,5}. The Rhinolith can present a dark green, brown or gray coloration, most of them are hardened but can be fragile and farinaceous and its size can vary, but usually they arrange according to their nasal cavity form⁶. The biggest related Rhinolith in literature weighed 116 grams³.

The major differential diagnoses should be made by osteogenic or odontogenic lesions. The following affections should be put way: osteoma, granuloma, osteomyelitis sequestration, carcinoma, chondrosarcoma and osteosarcoma^{1,7}.

Rhinolith diagnosis it is not difficult, but sometimes it turns inaccurate, since its symptoms simulate other (otorhinolaryngological pathological conditions like sinusitis, rhinitis and rhinopharyngitis. The patient often relates nasal complaints, but about professionals neglect, the Rhinolith treatment is delayed since in most cases, the diagnosis election is not Rhinolith⁴. The Rhinolith can be detected at any age, but its higher incidence occurs between the fourth and fifth decade of life¹, being rare its diagnosis in childhood.

Rhinolith unusual cases which cause drilling and nasal septum deviation, palatal perforation, destruction of nasal mucosa, oronasal fistulas, ulceration of the nasal mucosa, bone erosion and deflection are found on the literature⁶. Pinto et al.⁸ describe in their article, a case related of a 54 year old woman having palatal perforation due to a Rhinolith. The patient sought for dental treatment, showing ulceration and pain in the hard palate for almost a month. A CT was carried out

and through it was possible to notice a calcified mass measuring 2x1x1 on the right nasal fossa (in which entailed a deviated septum on the left side) ratifying, thus, the Rhinolith diagnosis. The treatment, in this case, was surgical, with general anesthetist, carried out by a (ENT) otorhinolaringologist doctor, since there was partial obliteration on the nasal cavity epsilateral.

CONCLUSION

It is important that the dental surgeon knows how to find this pathology, in order not to pass unnoticed during many years, thus leading the patient future serious complications.

The recognition of this entity, by the dental surgeon it is of a great importance, since this condition can be noticed in routine radiographs exams, on the dental treatment.

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