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Research Article

RHINOLITHIASIS OF THE CHILD: ABOUT A CASE

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ABSTRACT

Rhinolithiasis is a rare disease, relatively common in underdeveloped countries. It occurs at any age, rarer in the child than in the adult. In childhood, rhinolith has an exogenous mechanism; it is usually constituted on an ignored or neglected foreign body. It is characterized by a non-specific symptomatology, such as an epistaxis that can sometimes reveal the rhinolith. The diagnosis is made at rigid endoscopy, sometimes at the CT scan which allows the local evaluation of the lesions. The extraction of the rhinolith is mainly carried out by the nostrils. We report the clinical case of a 10-year-old child in whom rhinolithiasis was discovered by recurrent epistaxis of low abundance. In this case, the rhinolith has exceptionally a compact structure, a mechanism most probably endogenous. It was associated with a septal deviation, an inferior turbinal hypertrophy and a synechia of the nasal mucosa around the rhinolith.

INTRODUCTION

Rhinoliths are hard intranasal calcareous concretions, consecutive to a progressive deposition of calcareous salts around a central nucleus absorbable or not absorbable [1]. They usually sit in the anterior part of the nasal cavity. It is pathology of the third world, which has become very rare in the developed countries [1] [2] [3]. The clinical symptomatology is essentially rhinological. Endoscopic examination of the nasal cavities with a rigid optic can make the diagnosis [1]. We present the case of a rhinolithiasis discovered by epistaxis in a 10-year-old child.

CASE REPORT

A 10-year-old boy who presented himself in an ear-nose and throat consultation for right intermittent epistaxis that dates back about two years. This epistaxis was associated with permanent right nasal obstruction and purulent nasal discharge of low abundance. In these antecedents, the patient presented no concept of introducing foreign body into the nose, of traumatizes or nasal surgery. After cleaning of purulent secretions and decongestion of the nasal mucosa with the 5% lidocaine naphazolined, the anterior rhinoscopy has discovered a hard, compact and mobile mass which completely obstructs the right nasal cavity and injures the septal and turbinal mucosa. The nasal mucosa of the right side made a synechia around the rhinolith. The nasal mucosa appears hyperhemic, oedematous around the mass and bleeds easily at its contact.

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Posterior rhinoscopy showed thick secretions on the posterior wall of the pharynx. The endoscopic examination of the nasal cavities confirmed the data of the anterior rhinoscopy, and appreciated the extension of the rhinolith which sits in the anterior part of the right nasal cavity. CT scan of the nasal and paranasal cavities showed a calcified, homogeneous and well defined object without bone erosion, associated with turbinal hypertrophy and septum deviation (Fig1 and Fig2).

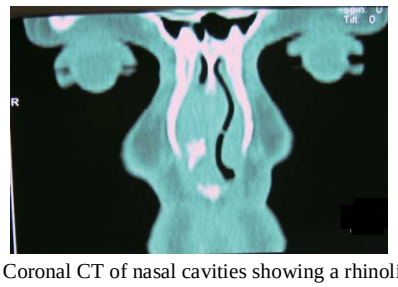

Figure 1 Coronal CT of nasal cavities showing a rhinolith in the anterior part of the right nasal cavity around which a synechia of the nasal mucosa was formed.

Figure 2 Axial CT of nasal cavities showing a rhinolith in the anterior part of the right nasal cavity and a septum deviation.

The clinical diagnosis of the right nasal cavity rhinolith was posed and the surgery under general anesthesia was decided; under endoscopic guidance with 0° optic the intranasal mass was delimited and extracted with a blunt dissector (Fig3), this surgery was completed by a right inferior turbinectomy. After extraction of the rhinolith, this last one was solid and compact, yellow in color, of regular surface, which measured 1cm in length. An anterior nasal packing with the merocel during three days has been performed and a silastic plate was left in place for fifteen days. A clear improvement of the nasal respiratory function was noted without recurrence of the disease with three years passing.

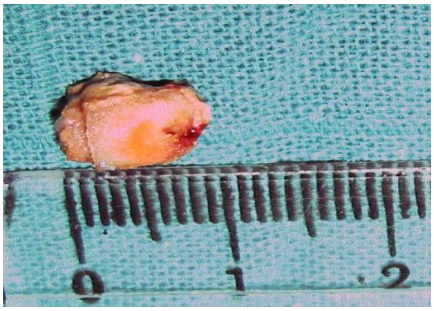

Figure 3 The rhinolithiasis mass after endoscopic extraction.

DISCUSSION

Rhinolithiasis is a rare disease, particularly in developed countries, its incidence is greater in disadvantaged populations; It is on average three new cases per year [1]. Rhinoliths usually occur during the third decade of life and rarely affect children. Women are more commonly affected than men [4].

The pathogenesis of rhinolithiasis remains incompletely elucidated. We classically describe two assumptions. The exogenous mechanism is frequently encountered in infancy, the foreign body introduced into the nasal cavity induces a chronic inflammatory reaction with progressive deposition of mineral salts [1] [3]. In the endogenous mechanism, the formation of rhinoliths occurs by deposition around substances and aggregates of the nasal mucosa. Usually, it takes a while for a rhinolith to form, therefore the course of development and progression of this disease is believed to take a number of years.

The chemical composition of rhinoliths is generally inorganic (in more than 90%). The rhinoliths consist of calcium phosphate, calcium carbonate and magnesium phosphate. Organic components may be derived from nasal secretions and lacrimal fluids [5.6].

Most patients complain of purulent rhinorrhea and / or ipsilateral nasal obstruction. Other symptoms include fetor, epistaxis, sinusitis, headache and in rare cases the epiphora. Asymptomatic forms are frequently reported in the literature: rhinoliths are fortuitously discovered, after otolaryngological examination motivated by other symptoms, during dental care or during radiological explorations [3]. After aspiration of the nasal secretions and local decongestion of the nasal mucosa, the endonasal examination can confirm the diagnosis [7] [3]. The anterior rhinoscopy easily recognizes the rhinoliths of the anterior part of the nasal cavities.

Rigid endoscopy is used, to allow the diagnosis, to evaluate the posterior extension of the rhinolith and to evaluate associated lesions: turbinal hypertrophy, septum deviation and granuloma or polyps [3] [7]. The rhinoliths appears as a mass of variable size, gray to brown in color, with a rough surface, often situated in the anterior half of the nasal cavity most often on its floor; Contrary to what was found in our patient, the structure of the rhinolith was friable [5]**.** Depending on its size, the rhinolith can extend from the floor to the roof of the nasal fossa. It is usually located in the lower meatus or in the space separating the lower horn and the nasal septum. On the computed tomography, the rhinoliths appears as a homogeneous and high density lesion with or without central hypodensity. The CT determines the rhinolith shape, its exact seat and dimensions [3] [8]. CT can't differentiate a rhinolith from another calcified mass but can detect complications related to rhinolith [4]. Specific forms of nasal rhinolithiasis can be demonstrated: multiple, bilateral, recurrent rhinolithiasis and associated with sinusal rhinolithiasis [3] [9]. The evolution is towards the aggravation of nasal obstruction, secondary naso-sinusal infection, olfactory sensation disorders and epistaxis by erosion of the nasal mucosa [3] [4]. Differential diagnosis includes all possible lesions able of obstructing the nasal cavity and appearing as a calcified mass on X-ray examinations: hemangioma, osteoma, calcified polyps, enchondroma, chondrosarcoma, osteosarcoma, syphilis and tuberculosis. In most cases, the nasal cavity rhinolith may be removed by nostrils under local anesthesia using rigid endoscopy. However, rhinolith extraction under general anesthesia may be justified by parameters related, to rhinolith (giant form or enclosed rhinolith in the posterior part of the nasal cavity), to the person (child, pusillanimous) or to the associated lesions (Major turbinal hypertrophy, sinusitis, polyp, mycosis) [3]. The surgical removal by extra-nasal approach can be tried in the exceptional cases of giant rhinolith or in associated turbino-septal malformation. Currently the rhinolith can be extracted by extracorporeal lithotripter [9] [3].

CONCLUSION

Rhinolithiasis is a rare event today, always exceptional in childhood. The exogenic mechanism is the mode of formation most often encountered in children; the endogenous mechanism is sometimes accused. The rhinolith may, contrary to what has been described in the literature, take on a hard and compact appearance. Its clinical symptomatology is especially rhinological, of which the epistaxis can constitute a mode of discovery. The surgical removal of rhinolith in children is usually done by the nostrils under general anesthesia.

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