10.5005/jp-journals-10013-1112

CASE REPORT

Frontal Sinolith

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ABSTRACT

Calcified bodies in paranasal sinuses are very rare. Sinolith reported in literature are mainly of maxillary sinus. Only two cases of frontal sinolith have been reported uptodate. To our knowledge this is the third case of frontal sinolith which is reported in world literature. We present this case for its rarity.

Keywords: Frontal sinus, Sinusitis, Sinolith.

How to cite this article: Jagannath B, Smitha SG, Bhardwaj S. Frontal Sinolith. Clin Rhinol Int J 2012;5(1):28-29.

Source of support: Nil

Conflict of interest: None declared

INTRODUCTION

Calcified bodies present in the nasal cavity and paranasal sinuses are called rhinoliths and sinoliths or antroliths. Rhinolith was first defined by Polson[1]in 1943. Later Bowerman,[2] in 1969, introduced the term antrolith. Sinoliths are exogenous in nature if the nidus for calcification originates outside the body and endogenous if they arise around normal or abnormal body tissues found in or around sinus region. They are rare but not unusual. Most of them are asymptomatic and detected incidentally on radiological investigation. But the patient may present with symptoms of sinusitis when they block the drainage of sinus, for which surgical clearance is required.

CASE REPORT

A 70-year-old female patient presented with headache of 2 months duration, which gradually progressed in severity and localized more on the right side. She also complained of right sided foul smelling nasal discharge associated with it. She gave history of recurrent episodes of sneezing and bilateral watery nasal discharge for the past 6 years. On examination, external framework of the nose appeared to be normal. On anterior rhinoscopy there was foul smelling, mucopurulent discharge filling the right nasal cavity. Tenderness was elicited over bilateral frontal sinuses and right maxillary and ethmoidal sinuses. CT paranasal sinuses (coronal view) revealed mucosal thickening in frontal sinus, toward right side, with an area of higher density (<150 hu) in medial aspect of frontal sinus- suggestive of mucolith (Fig. 1). Mucosal thickening was also seen in ethmoidal and maxillary sinuses and very minimal thickening in sphenoidal sinus.

Patient was routinely investigated and taken for surgery under general anesthesia. Through an incision made above the right medial canthus, just below medial aspect of right eyebrow, the right frontal sinus was exposed. Mucopurulent discharge was suctioned out and a stony hard mass was visualized near frontonasal duct opening, which was fused to posterior wall of sinus (Fig. 2). As it could not be removed *en masse*, it was excised piece meal and sent for histopathological examination. The remaining sinus mucosa was curreted out. Histopathological examination of the specimen showed connective tissue stroma with amorphous dystrophic calcification and diffuse inflammatory infilterate (Fig. 3). Patient was on a course of antibiotics and topical steroids, postoperatively. She is on regular follow-up till date and is asymptomatic.

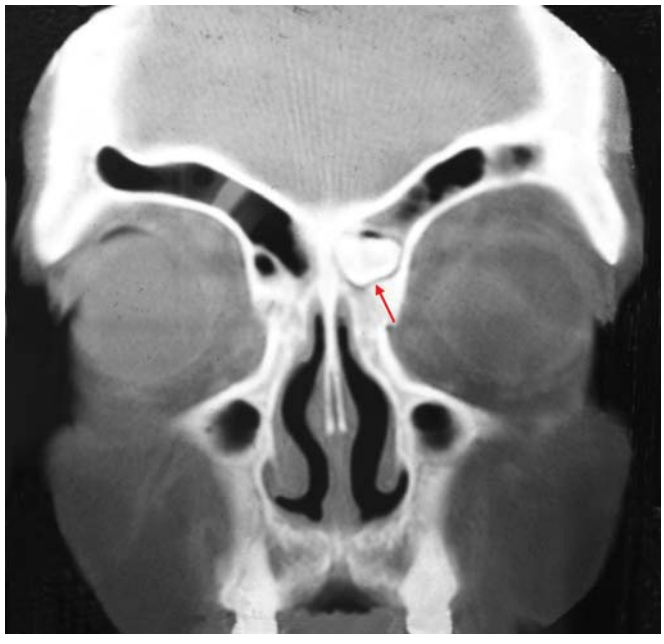

Fig. 1: CT paranasal sinuses (coronal view) revealed mucosal thickening in frontal sinus

DISCUSSION

Rhinoliths and antroliths or sinoliths are calcified bodies present in the nasal cavity and paranasal sinuses respectively. These calcareous bodies are exogenous in nature if the nidus of calcification originates outside the body and endogenous if they arise in and around normal or abnormal body tissues found in or around sinus region. Most frequent exogenous foreign bodies are beads, seeds, buttons, etc.[1] Endogenous foci include blood clots, dried secretions and commonly teeth.[3] Air currents are thought to be an important factor in rhinolith formation leading to the concentration of pus and precipitation of salts.[4] Bowermann[2]

Fig. 2: Incision made above the right medial canthus

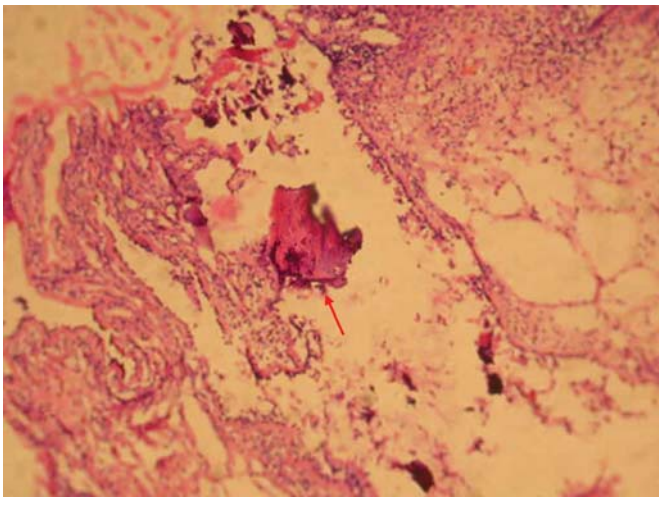

Fig. 3: HPE showing connective tissue stroma with amorphous dystrophic calcification and diffuse inflammatory infiltrate

and Cohen et al[5] thought that the obstruction to free escape of pus may be an important factor in the formation of antrolithiasis, as airflow within the maxillary sinus is limited. Normally, the mucus in sinus plays protective part in preventing calcium salts from aggregating. But, in presence of inflammation, ciliary clearance is affected, causing stasis of secretions, allowing calcium salts to be deposited around the nucleus.[5] Most of them are asymptomatic and detected incidentally on radiological investigations. Patient may present with symptoms of sinusitis when they block the drainage pathway of the sinus involved, for which surgical clearance is required.

Maxillary sinuses are usually involved and only two articles of frontal sinolith have been reported in the literature till date. The first case of frontal sinolith was reported by DG Grant et al[6] in 1998, which was caused by radiation necrosis of frontal sinus following radiotherapy for carcinoma of ethmoidal sinus. Persistant inflammation, suppuration and obstruction of frontal sinus was thought to be the cause of it. A second case of antrolithiasis in left frontal sinus was reported by Mori S et al[7] in 2000, with unknown etiology. To our knowledge, this is the third case reported. In this case chronic rhinitis may have complicated to the condition as patient gives history of repeated episodes of rhinitis for the past 7 years.

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