

## AN UNUSUAL CASE OF LARGE RHINOLITH

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### INTRODUCTION

Rhinoliths are calcareous concretions that occur in the nose.<sup>[1]</sup> The word Rhinolith is derived from the Greek words *rhino* meaning nose and *lithos* meaning stone and is a rare condition.<sup>[2]</sup> Rhinolithiasis was first described by Bartholin in 1654.<sup>[3]</sup> The calcification process often starts around a foreign body, which is quite frequently forgotten. The soft tissue calcifications arise due to the deposition of mineral salts composed of various minerals, such as calcium phosphate, calcium carbonate, and magnesium around the nidus.<sup>[4]</sup> There is subsequent increase in the size of this nidus over years.<sup>[5]</sup> The exact etiology of the development of rhinoliths remains unclear.<sup>[1]</sup>

We present a case of large calcified lesion in nasal cavity of a young male presenting with nasal discharge.

### CASE PRESENTATION

A 39 year old male patient came to the ENT outpatient department with complaints of foul smelling discharge from right nose for a long time, post nasal drip and headache. He had no history of fever with normal body temperature, heart rate and blood pressure. On examination, the nasal mucosa was congested with mucopurulent discharge in right nasal cavity along with an irregular lobulated soft tissue lesion in right inferior

meatus.

X-ray of the paranasal sinuses was advised. Two views of X-ray were acquired- Waters view and Caldwell view. X-ray showed a lobulated hyperdense lesion in the right side of nasal cavity measuring approximately 3.3 x 1.8 cms with density seen peripherally and relatively lucent central zone. There was deviated nasal septum towards left side and presence of bilateral maxillary sinusitis. Radiological diagnosis of bilateral maxillary sinusitis with right nasal rhinolith and leftward deviated nasal septum was made.



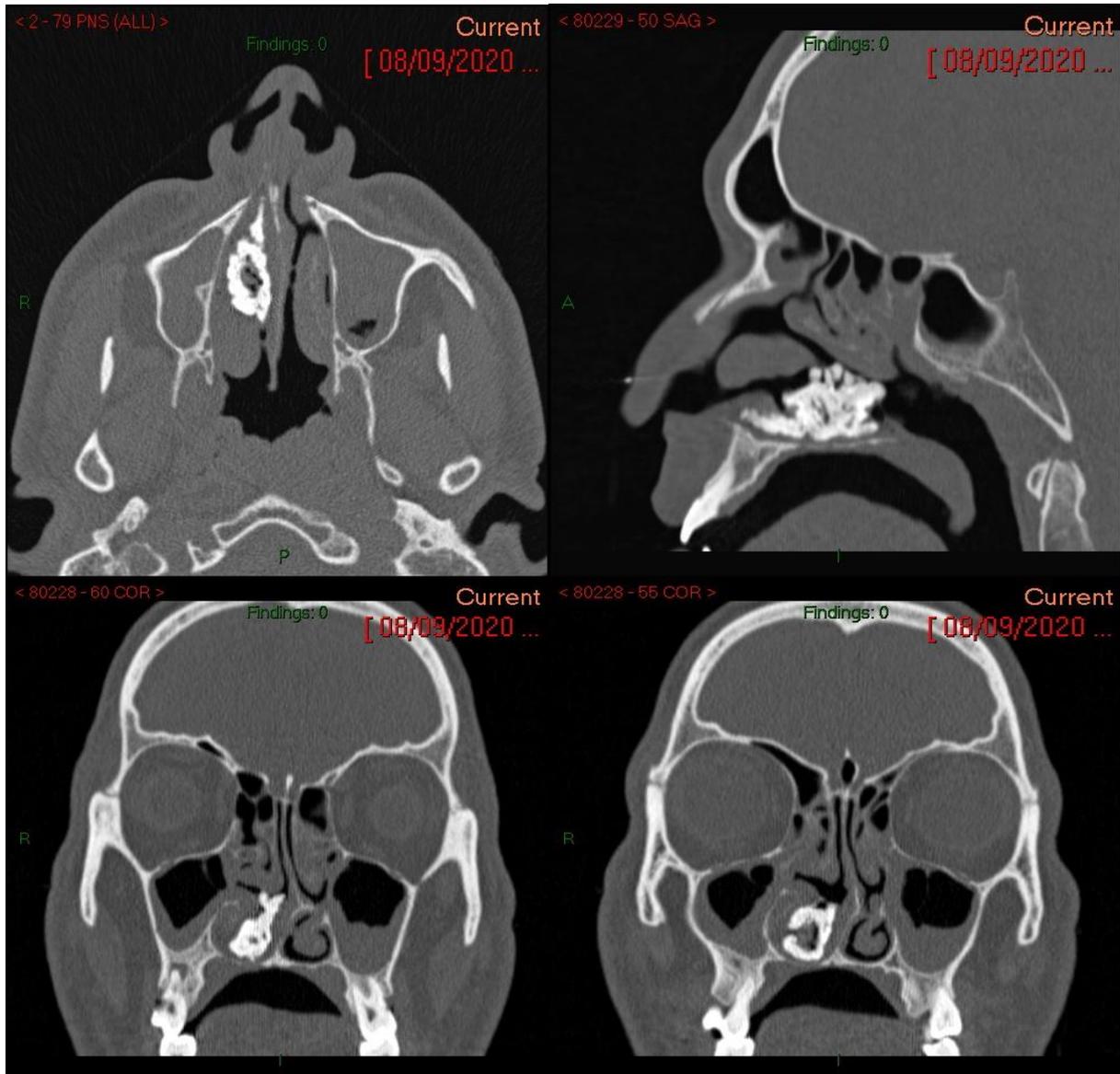
**Image 1: Plain X-ray PNS shows rounded radiodense opacity in inferior meatus region of right side of nasal cavity. Bilateral maxillary sinusitis and deviated nasal septum towards left side.**

Further evaluation with computed tomography (CT) scan was carried for detailed characterization of the rhinolith. CT scan revealed soft tissue density with areas of irregular calcification in right side of nasal cavity in the region of inferior meatus measuring 4.0 x 2.2 x 1.6 cms. The calcification was seen predominantly peripherally with soft tissue density in the center. There was evidence of pansinusitis with deviated nasal septum towards left side. There was no extension into the posterior choana. Demineralization of underlying hard palate seen with no

evident perforation.

The patient was treated by surgical removal under local anesthesia. Multiple polypoidal greyish white soft tissue pieces with multiple fragments of calcified material were removed.

Histopathology showed edematous inflamed nasal mucosa with moderate lymphoplasmacytic infiltrates with portions of calcified debris.



**Image 2: Bone window image of CT PNS in a) Axial, b) Sagittal and c) Coronal reconstructed planes shows large calcific density lesion in inferior meatus of right side of nasal cavity surrounded by soft tissue.**

## DISCUSSION

Nasopharyngeal rhinoliths are uncommon lesions that result from the complete or partial encrustation of an intranasal foreign body with mineral salts, mainly calcium and magnesium (6). Foreign bodies mostly access the nose anteriorly, but sometimes may reach the nasal cavity through the posterior choanae owing to cough or vomiting.<sup>[2]</sup> Rhinoliths are most frequently

located between the inferior turbinate and nasal septum. Other locations include the nasopharynx and the fossa of Rosenmüller.<sup>[1]</sup> Symptoms are normally progressive unilateral nasal obstruction, rhinorrhea which is usually purulent and fetid, cacosmia and epistaxis. Other less common symptoms include headaches, facial pain and epiphora.<sup>[2]</sup> Rarely there may be erosion of the maxillary, nasal and palatal bones in some cases.<sup>[7]</sup> Initially,

detected calcified bodies were categorized as true or false rhinoliths. However, the current terminology is exogenous or endogenous, depending on the presence or absence of a nucleus within the incrustation.<sup>[8]</sup>

Plain X-ray paranasal sinuses is the initial investigation of choice where radiodense opacity is usually seen in the nasal cavity. Computed tomography of the paranasal sinuses can accurately determine the site and size of the rhinolith and identify any coexisting sinus disease which may also require treatment.<sup>[9]</sup> A densely calcified mass in the nasal cavity is suggestive of a rhinolith. The central nucleus may have a greater or lesser density, depending on the nature of the foreign body.<sup>[6]</sup>

Computed tomography of the paranasal sinuses can help to determine the size, the extent of the rhinolith and reveal its effect on the sinonasal cavity.<sup>[5]</sup> CT findings are quite helpful for diagnosis as well as to consider differential diagnosis from a neoplasm, including hemangioma, enchondroma, osteoma, chondrosarcoma, or osteosarcoma, to other pathologies, such as fungal infections, chronic granulomatous infections, or polyps, for documenting lesion extension and planning treatment.<sup>[7]</sup>

The recommended treatment of rhinoliths is surgical removal under local anesthesia.<sup>[8]</sup>

## CONCLUSION

In conclusion, rhinoliths are a rare entity of the nose and paranasal sinuses and clinical presentation may vary from being incidentally discovered asymptomatic cases to patients presenting with purulent nasal discharge or epistaxis. The role of radiology with plain radiographs and CT scan is invaluable accurate diagnosis and planning of treatment and surgical removal. A high index of suspicion should be kept for any dense opacity within the nasal cavity particularly in cases presenting with unilateral nasal obstruction and nasal discharge.

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