

Case Report

Epistaxis Secondary to Rhinolith: A Forgotten and Scarce Entity

Ein Wan Chin¹, Shahrul Hitam¹, Nor Azirah Salahuddin², Siti Asmat Md Arepen², Eyzawiah Hassan²

¹Department of Otorhinolaryngology, Ampang Hospital, Selangor, Malaysia.

²Otorhinolaryngology Head and Neck Surgery, Surgical-based Department, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia.

Correspondence should be addressed to:

Nor Eyzawiah Hassan; eyzawiah@usim.edu.my

Article Info

Article history:

Received: 16 April 2021

Accepted: 28 July 2021

Published: 1 September 2021

Academic Editor:

Ahmad Izzat Ahmad Tajjudin

Malaysian Journal of Science, Health & Technology

MJoSHT2021, Volume 7, Special Issue

eISSN: 2601-0003

<https://doi.org/10.33102/mjosht.v7iSpecial Issue.173>

Copyright © 2021 Hassan N. E et al.

This is an open access article distributed under the Creative Commons Attribution 4.0

International License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Abstract-Rhinolith is a calcareous concretion resulting from mineralization and encrustation of an endogenous or exogenous nidus in the nose. This rare clinical entity could be the result of a previous introduction of a foreign body into the nasal cavity. Rhinolith is rarely seen by the clinical practitioner. We report a case of rhinolith in a young healthy lady who presented with epistaxis and highlight the clinical presentation and management of this case. The history of foreign body insertion may be overlooked in such cases. Presence of grittiness on endoscopic probing aid in establishing the diagnosis. Early referral from primary care centre to ENT can avoid misdiagnosis and further complications as removal of the rhinolith is the ultimate treatment.

Keywords: Nose Diseases, Nasal Obstruction, Paranasal Sinuse, Foreign Bodies, Facial Pain; Granulation Tissue

I. INTRODUCTION

Rhinolith is a calcareous concretion resulting from mineralization and encrustation of an endogenous or exogenous nidus in the nose. It is a rare clinical entity which could have resulted from the introduction of foreign body into the nasal cavity previously. Nowadays, rhinolith is rarely diagnosed and often forgotten by the clinician. The diagnosis is made based on thorough history and complete nasal examination. Imaging such as Computed Tomography (CT) scan may aid to delineate the size and site of foreign body, detection of sinus involvement, and provide guidance for the surgical approach.

II. CASE

We report a healthy young lady who presented to us with a complaint of recurrent epistaxis, progressive left sided nasal block, rhinorrhoea and left facial pain for past two years. She denied any history of frequent sneezing, nasal itchiness, cacosmia or any smell disturbance. She was not aware of any previous foreign body insertion and denied any history of trauma.

Clinically, cold spatula test showed reduced misting in the left nasal cavity. Upon nasoendoscopic examination it was noted that there was an irregular granulation tissue on the floor of the left nasal cavity, which initially looked like a benign growth. However, on palpation and probing of the

granulation tissue using Jobson Horn forcep revealed a hard gritty mass which was covered by mucopurulent secretions (Figure 1). Fossa of Rosenmüller (FOR) were patent bilaterally. There were no polyps in the bilateral osteomeatal complex (OMC) and oral examination was unremarkable. An impression of left rhinolith was diagnosed clinically. A radiological imaging was not indicated in this case in view that it was a localized lesion in the nasal cavity and we were able to visualise the entire lesion during nasoendoscopy.

Examination under general anesthesia and removal of the rhinolith was performed endoscopically. Intraoperative findings showed a rhinolith covered with granulation tissue. The surrounding mucosa appeared granular over the left septum, inferior turbinate, floor of the nasal cavity and the posterior end of middle turbinate (Figure 1). The rhinolith was broken into pieces and removed via the nostril. Due to limited access, some parts of the rhinolith were pushed posteriorly and removed via the oropharynx.

The patient was prescribed amoxicillin with clavulanic acid and oxymetazoline nasal spray to decongest her nose. She was discharged well with no report of residual complaints during the subsequent follow up.

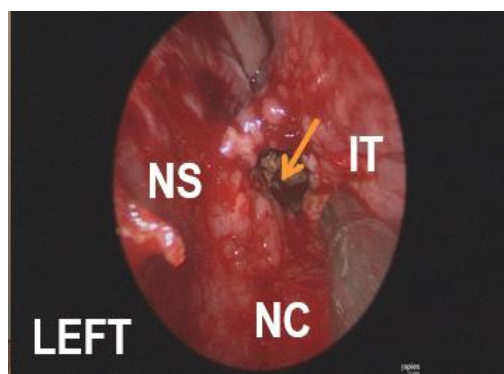


Fig. 1 The rhinolith which was covered by granulation tissue in the left nostril (orange arrow) NS: Nasal septum. NC: Nasal cavity. IT: inferior turbinate.

III. DISCUSSION

Rhinolithiasis was derived from the Greek words “*rhino*” meaning nose and “*lithos*” meaning stone. The first well documented case of rhinolith was reported by Bartholin in 1654. It is a calcareous concretion resulting from mineralization and encrustation of an endogenous or exogenous foreign body in the nasal cavity. It is brown or gray in colour, with a rough surface, irregular in shape and friable [1]. Foreign body commonly introduced into the nasal cavity intentionally since childhood or accidentally entered the nasal cavity via posterior choanae as a result of vomit or cough. Examples of exogenous foreign body that had been reported include beads, cotton wool, fruit seeds, stone, plastic parts, insects, glass, wood and nasal packing material. The endogenous causes can be dried secretions, desiccated formed blood clots, tooth fragments and bony sequestra [2]-[3]. Common detected age groups are teenagers and young adults, and predominantly occur among females [3].

The pathogenesis of rhinolith still remain unclear. The nasal foreign body once left in-situ will act as a nidus for encrustation. Its triggers a local chronic inflammatory reaction leading to accretion of 90% inorganic material such as calcium phosphate, calcium carbonate and magnesium phosphate in addition to the rest 10% of organic substances (glutamic acid and glycine) causing mechanical obstruction, promoted by the presence of turbulent air flow in the nasal cavity, which lead to the rhinolith gradually increasing in size till the symptoms occur and become noticeable by patients. [2]-[4].

The presenting symptoms may vary depending on the size and localization of the rhinolith in the nasal cavity. Progressive unilateral nasal discharge (purulent and foul smelling) with or without epistaxis with unilateral nasal blockage and cacosmia has been the most frequent symptoms. Less commonly, patients may complain of crusting, headache, facial pain, epiphora or pain mimicking as toothache. In some cases, rhinolith is an incidental discovery during routine examination or radiology test (incidental findings of rhinolith in CT scan, for example of minor head injury patient or dental patient) [5]. Possible complications of rhinolith include septal perforation, palatal perforation, sinusitis, fistula tract formation, recurrent otitis media and recurrent dacryocystitis. It occurs as a result from local irritation or pressure effect of rhinolith on the surrounding structures [6]. Fortunately, there were no complications in this case.

Examination should include anterior rhinoscopy and rigid nasoendoscopy. Rhinoliths are usually unilateral, located halfway between the anterior and posterior nares on the floor of the nasal cavity in between the inferior concha and nasal septum [7]. Upon probing the lesion, it will reveal a hard stony mass with gritty sensation. Kharoubi and Chetan et al both reported rare cases of bilateral rhinoliths. [3], [8]. These were probably due to long standing huge rhinoliths which eroded the nasal septum thus presenting as bilateral. Some cases of rhinolith were found in unusual sites such as in the nasopharynx and FOR [9]-[10].

Additional investigation can be performed to support the diagnosis which include plain x-ray. However, CT scan of paranasal sinuses (PNS) has the added advantage as it can delineate the size, site of foreign body, detect co-existing sinus involvement and provide guidance for the surgical approach. Typical CT scan finding show high-density lesion with central translucency which may represent foreign-body nidus [1]. Although the diagnosis of rhinolithiasis/rhinolith is mainly clinical, pathological conditions such as nasal polyps, massive granulation tissue and severe deviated nasal septum may hide the existence of the rhinolith. Therefore, in cases of diagnostic dilemma, massive rhinolithiasis or when a complication is suspected, further imaging such as CT PNS should be considered [1], [3]. Differential diagnoses for rhinolith include calcified nasal polyps, calcifying angiofibroma, hemangioma, osteoma, odontoma, impacted teeth, dermoid, chondrosarcoma, chondroma, osteosarcoma and tuberculous or syphilitic calcification [3]-[4]. However, a thorough history, physical examination and investigation may aid in establishing the diagnosis of rhinolithiasis and rule out other differential diagnoses based on clinical findings.

The mainstay of treatment for this disease is removal of the rhinolith which can be done under local or general anesthesia. The removal of the rhinolith will be performed under general anesthesia in the following situations:

- paediatric patient, patient with mental retardation and those who are not cooperative during the procedure.
- huge size of rhinolith and the site where it is located posteriorly with limited access.

The surgical approach depend on the size of the rhinolith. Small rhinolith can be delivered trans-nasally with endoscopic guidance, whereas a large rhinolith can either be removed in piecemeal, alar release or lateral rhinotomy approach [1],[3]. Some of the literatures advocate pushing the rhinolith posteriorly as it was easier than delivering it anteriorly [2]. Post surgical removal follow-up is important to monitor the patient's progress and to rule out possible complications. Chetan et al reported a patient who had giant rhinolith developed post-operative complication of atrophic rhinitis and two patients developed septal perforations observed during follow up [3].

IV. CONCLUSION

Although the occurrence of rhinolith is relatively rare, general practitioners, other physicians and otorhinolaryngologist should raise high suspicion in a patient who complains of progressive unilateral nasal blockage, ipsilateral fetid rhinorrhoea, recurrent epistaxis with or without a history of nasal foreign body insertion, especially in young patients. Presence of grittiness on endoscopic probing aid in establishing the diagnosis may avoid unnecessary CT scan. Early referral from primary care center to ORL can avoid misdiagnosis and further complications, as removal of the rhinolith is the ultimate treatment.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Written informed consent was obtained from the patient for the anonymized information to be published in this article [NMRR-19-1063-48285].

CONFLICT OF INTERESTS

The authors declare that there is no conflict of interest.

ACKNOWLEDGEMENT

We would like to thank the Director General of Health Malaysia for his permission to publish this article.

REFERENCES

- [1] Singh, R., Varshney, S., Bist, S., Gupta, N., Bhatia, R., & Kishore, S. (2007). Rhinolithiasis and value of nasal endoscopy: a case report. *Int J Otorhinolaryngol*, 7(2), 1-5.
- [2] Fahim Ahmed, S., Sunil, G., & Nair, R. (2010). < A> case presentation of a large rhinolith. *Oman Med J*, 25(3), 230-231.
- [3] Bansal, C., Singh, V. P., & Nautiyal, D. (2018). Rhinolith a forgotten entity: our experience in remote hilly population of Uttarakhand. *International Journal of Otorhinolaryngology and Head and Neck Surgery*, 4(2), 508.
- [4] Brehmer, D., & Riemann, R. (2010). The rhinolith—a possible differential diagnosis of a unilateral nasal obstruction. *Case Reports in Medicine*, 2010.
- [5] Daneshbod, Y., Khademi, B., Janfeshan, K., & Rasehki, A. R. (2008). Intraoral presentation of rhinolith. *Otolaryngology-Head and Neck Surgery*, 138(4), 535-536.
- [6] Appleton, S. S., Kimbrough, R. E., & Engstrom, H. I. (1988). Rhinolithiasis: a review. *Oral surgery, oral medicine, oral pathology*, 65(6), 693-698.
- [7] Kharoubi, S. (1998). Rhinolithiasis associated with septal perforation. A case report. *Acta oto-rhino-laryngologica belgica*, 52(3), 241-245.
- [8] Aziz, Y., Chauhan, J., Hasan, S. A., & Hashmi, S. F. (2008). Staghorn rhinolith in nasopharynx: an unusual case. *Indian Journal of Otolaryngology and Head & Neck Surgery*, 60(1), 91-93.
- [9] Shilston, J., Foo, S. H., & Oko, M. (2011). Rhinolith in the fossa of Rosenmüller—a hidden stone. *Case Reports*, 2011, bcr0920103352.
- [10] Girgis, S., Cheng, L., & Gillett, D. (2015). Rhinolith mimicking a toothache. *International journal of surgery case reports*, 14, 66-68.