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Research Article

A Case of Mucocele of Right Middle Turbinate

Dr. Mohammed Saifulla[1*], Dr. Maneesh Prabagaran[2]
[1*]M.B.B.S, M.S. ENT, Assistant Professor, PES Institute of Medical Science and Research.
[2]M.B.B.S, M.S. ENT, Junior Resident, PES Institute of Medical Science and Research
Corresponding Author: Dr. Mohammed Saifulla
PES Institute of Medical Science and Research Campus, Hill view, door no 404, Nalagampalle, Kuppam, Andhra Pradhesh - 517425
Email: msmdsaif@gmail.com
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ABSTRACT
Concha bullosa is a common anatomical variant of the middle turbinate but rarely develops into a mucocele. We report a case of a 20-year-old female who presented with right-sided facial pain, nasal obstruction, hyposmia, and blurring of vision. Endoscopic evaluation revealed an expansile right middle turbinate filling the nasal cavity, and CT imaging demonstrated a well-defined expansile lesion suggestive of a concha bullosa mucocele with orbital displacement. The patient underwent endoscopic sinus surgery with marsupialization and partial resection of the turbinate, and histopathology confirmed the diagnosis of mucocele with no microbial growth. Postoperative recovery was uneventful with complete symptom resolution and radiologic improvement. This case highlights the importance of considering concha bullosa mucocele as a differential diagnosis in unilateral nasal obstruction with orbital symptoms, where early imaging and endoscopic management are crucial for successful outcomes.

Keywords: Concha Bullosa, Mucocele, Middle Turbinate, Endoscopic Sinus Surgery, Orbital Involvement.

INTRODUCTION

Concha bullosa (CB) is a unilateral or bilateral pneumatization of the nasal conchae and a common sinonasal anatomical variant with prevalence rates of 14% - 53%. Concha bullosa is often asymptomatic and is mostly an identical finding on computed tomography. CB occurs when a pneumatic expansion from anterior ethmoids cells or less usually from posterior cells invades the middle turbinate of nasal cavity. The mucociliary transport system of the Concha bullosa empties into the frontal recess or the middle meatus through the sinus lateralis. The obstruction of Concha bullosa might result in a Mucocele. An infected mucocele is called a Pyocele and its occurrence in the concha bullosa is very rare. In this case report we report an unusual presentation of an infected CB with Mucocele. The objective of the case report is to shed light on this rare entity and report its diagnostic features.

CASE REPORT

A 20 years old female patient came to ENT OPD 1 year back with Chief compliant of right sided Facial pain for 1 year which is prickling type of pain often associated with right sided Frontal headache. History of right sided Nasal obstruction is present with Hyposmia for one year. Later patient noticed Blurring of vision in right Eye. No other Rhinological or ophthalmological symptoms. Patient is a known case of nutritional Anaemia. Routine ENT examination is done, On Nasal endoscopic examination: An expansive, large middle turbinate with normal mucosa filled the majority of the Right nasal cavity and displaced the Nasal septum to the left. Nasopharynx is clear and bilateral Eustachian tube is patent. Ophthalmologic examination revealed Exophthalmos and globe was displaced antero-laterally. Ocular movements and visual acuity were normal.

Patient advised for IV contrast CT of Paranasal sinus, which reveals a feature of a well-defined expansile Lytic lesion seen in the right Nasal cavity, likely arising from the right middle turbinate measures about 4.0 x 3.3 x 3.7 cm. No significant enhancement seen in post contrast study, no periosteal reaction and soft tissue components are seen. Medially it intends on the bony Nasal septum with deviation of septum to left, laterally displacing the Lamina papyrecea with extraconal intraorbital expansion, superiorly reaches till the cribriform plate and inferiorly limited to Nasal cavity. Moreover, the frontal sinus and ethmoid sinus was totally opacified. There are indentation and displacement of medial rectus muscle, no involvement of Optic nerve. From these

findings, the lesion was suspected to be a Concha bullosa Mucocele with orbital invasion.
Routine General blood investigation done with pre anaesthetic assessment done and patient planned for Endoscopic Sinus Surgery under General anaesthesia. After Marsupialisation of sac then resection of the lateral and inferior walls of the right middle turbinate was performed combined with a right frontal sinusotomy.

Figure 1: Nasal Endoscopic View of Right Middle Turbinate Hypertrophy with Normal Mucosa

The middle turbinate consisted of thick, dark brown, and white coloured inspissated material surrounded by a partially bony shell with mucosa at both inner and outer side, confirming the diagnosis of a mucocele in CB. After frontal sinusotomy, pulsating pus like discharge and inflammation-induced oedematous sinus mucosa were noted.
No organism was seen on gram, AFB, and fungus stain and culture yielded no growth in the pus from CB.

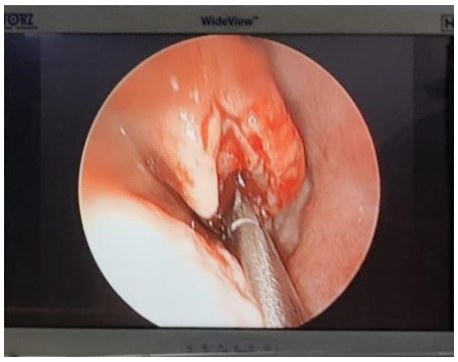

Figure 2: Incision Given With Sickle Knife on the Right Middle Turbinate

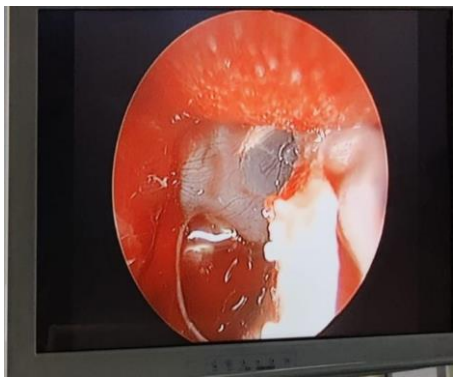

Figure 3. Showing the Bony Shell Sac Covering Mucosa of Middle Turbinate Filled With Thick Inspissated White Coloured Material

Nasal packs were removed and patient got Discharged after two days of surgery. An oral antibiotic treatment with Amoxicillin and Clavulanate was started for 2 weeks with nasal douching. Patient improved symptomatically after 4 weeks of surgery. Patient was frequently

followed up for Nasal endoscopic evaluation. After 6 months CT Paranasal sinus is repeated and showed a good resolution of right Middle turbinate.

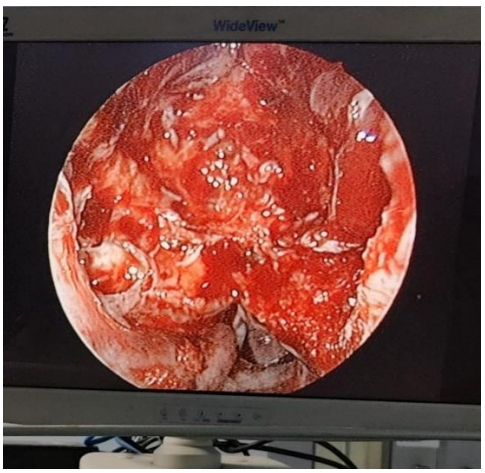

Figure 4. Marsupialization of Right Middle Turbinate And Removal of the Bony Sac

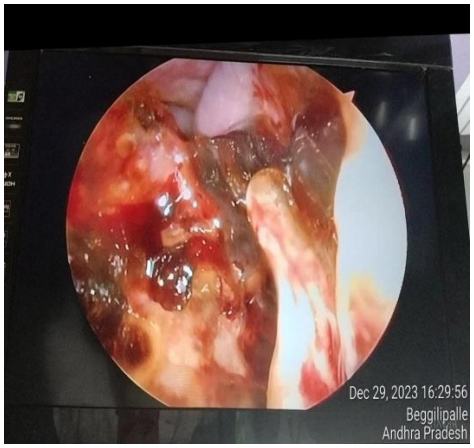

Figure 5. Post-Operative Endoscopic Evaluation Shows Frequent Crust Formation of the Surgical Site

DISCUSSION

Mucoceles are most common in the frontoethmoidal region in 90% of cases, they are unilateral. Concha bullosa mucocele may present as a large nasal mass surrounded by a thin bone plate and covered with intact mucosa. In this case report, the microbiological investigation of the infected CB reveals no growth. However, in reported cases of infected mucoceles, the most common isolated organism was Staphylococcus aureus.

Concha bullosa most commonly occur within the middle nasal turbinate's, seen in approximately 34% to 53% of patients, with significant pneumatization of the inferior or superior nasal turbinate's seen in fewer than 10%. When large enough, concha bullosa may obstruct the middle meatus, maxillary infundibulum, or any number of sinus outflow pathways. The mucous membrane lining the concha bullosa is no different from the rest of the sinuses and may also display inflammatory changes, including development of fluid-fluid levels. The traditional treatment for CB mucocele is endoscopic surgery and there are four methods to manage surgically: lateral marsupialization, medial marsupialization, crushing, and transverse excision. Generally, the choice of surgical access depends on the localization and extension of the mucocele. We performed the excision of lateral and inferior part of the CB to remove all pus easily and prevent recurrence. It is important to avoid excessive manipulation of the medial aspect of the CB because the medial lamella attaches to the skull base.

CONCLUSION

Mucocele of the middle turbinate, although rarely, may present as a cause of unilateral or bilateral nasal obstruction, and therefore, must be kept into consideration especially when associated with other nasal or ocular

complaints. CB mucocele should be considered as a differential diagnosis of any slow-growing mass when a definitive diagnosis cannot be made without complementary imaging and endoscopic surgery, which are the main diagnostic and therapeutic management approaches in this case, respectively.

REFERENCES

1. Al-Sebeih KH, Bu-Abbas MH. Concha bullosa mucocele and mucopyocele: A series of 4 cases. Ear Nose Throat J 93:28–31, 2014.
2. Lee JS, Ko IJ, Kang HD, Lee HS. Massive concha bullosa with secondary maxillary sinusitis. Clin Exp Otorhinolaryngol 1:221–223, 2008
3. Ketenci I, Sahin MI, Vural A, Ünlü Y. Mucopyocele of the concha bullosa: A report of two cases. Erciyes Tıp Dergisi/Erciyes Med J 35:157–160, 2013.
4. Bahadir O, Imamoglu M, Bektas D. Massive concha bullosa pyocele with orbital extension. Auris Nasus Larynx 33:195–198, 2006
5. Lee JH, Hong SL, Roh HJ, Cho KS, et al. Concha bullosa mucocele with orbital invasion and secondary frontal sinusitis: A case report. BMC Res Notes 6:501, 2013.