

A Rare Case of Nasal Vestibulitis Complicating As Bilateral Preseptal Cellulitis

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ABSTRACT:-

Nasal vestibulitis (nasal furunculosis) is a localized infection of the hair follicle (hair-bearing nasal vestibule). Most common pathogens include staphylococcus aureus, other gram positive organisms and anaerobes¹. Infection in this area can spread locally even intra cranially and causing fulminant life-threatening conditions like septic cavernous sinus thrombosis². Here we report a case of 4yr old female presented with the history of high grade fever and right side nasal furuncle since 4 days, together with a rare association of bilateral periorbital (preseptal) swelling since one day. The child was hospitalized. Laboratory and radiological investigations were carried out to investigate any possible complications.

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I. Introduction:-

Nasal vestibulitis is the localized infection of the hair follicle of the nasal vestibule, which lies in the dangerous area of face. Most likely, the causative organism for this infection is staphylococcus aureus. Frequent nasal pricking and immunocompromised states (like diabetes, SLE, auto-immune diseases) are two of the major predisposing factors which lead to this disease. Any infection affecting the dangerous area of the face can cause potential intra-cranial complication, because of the valveless facial veins and the direct communication with cavernous sinus via ophthalmic vein and pterygoid plexus^{3,4}. Usual clinical presentations are painful swelling over nasal vestibule with fever. If these symptoms are not diagnosed and treated in the early stage, patients may develop life threatening complications. These complications include facial cellulitis (periorbital cellulitis, orbital cellulitis), para nasal sinusitis and cavernous sinus thrombosis (with fever, head ache and III, IV, V, and VI cranial nerve palsies⁵). Treatment for this infection is usually conservative management, which include intra venous antibiotics and removal of nasal crust and local antibiotic application, to prevent complications. In complicated cases, prognosis of the patient is poor and the mortality remains up to 35%¹.

II. Case Report:-

A 4 year old female was presented to our outpatient department with history of painful swelling in the right nasal vestibule accompanied with fever for 4 days. The child was not relieved from the symptoms after taking treatment for the pain and fever. In the next few days, frequency of fever increased with chills and rigor. In the subsequent days, she developed with bilateral periorbital swelling, initially started at right side and then to the left periorbital region, for which she was brought to our hospital for further management. The informants (parents) did not report any history of nasal pricking, nasal trauma, nasal obstruction, altered sensorium and blurring of vision.

On clinical examination, child was active, conscious and was afebrile at the time of admission. On nasal examination we found that, there was a furuncle in the right nasal vestibule, which was tender with minimal pus discharge, with nasal crust at the furuncle. The nasal cavity was found to be congested with cellulitis over the nasal tip (but, not extending to the upper lip). The ophthalmic examination revealed a bilateral periorbital edema without ecchymosis, chemosis, conjunctival hemorrhage (figure-1). However, the vision and the perception of light were normal, without any ophthalmoplegia. All cranial nerves were found to be normal. The complete blood count revealed that white cell count and C - reactive protein were elevated. Pus culture from the right nasal vestibule pointed to staphylococcus aureus organism, while the blood culture was found sterile.



Figure 1: Figure showing nasal furuncle, b/l periorbital edema subsided after 3 doses of antibiotics



Figure 2: Periorbital cellulites

In order to investigate any possible complications, CT scan was performed. The scan showed soft tissue attenuation at the nasal vestibule at the left side, bilateral frontal maxillary and ethmoid sinuses showed haziness suggestive of sinusitis, with bilateral preseptal cellulitis (figure-3).

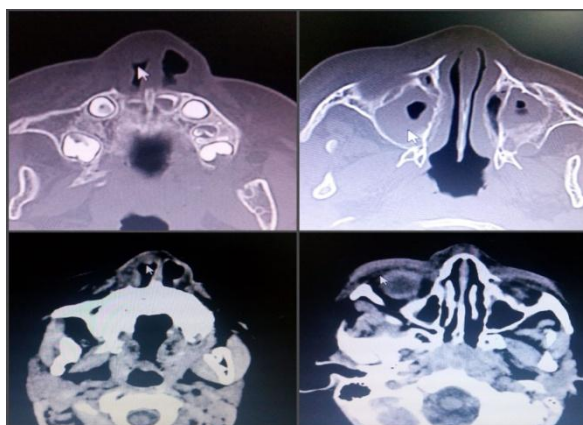


Figure 3: Showing nasal furuncle with preseptal cellulites and maxillary sinusitis (arrows pointing in each CT film)

The child was given intra venous antibiotics (ceftriaxone and vancomycin), together with topical application of mupirocin ointment at right nasal vestibule. Three days after the initiation of medication, the child was recovered completely from the nasal vestibulitis. We have also noticed that the periorbital swelling was also subsided completely (figure-3). We could prevent the further progression of the disease and associated complications, by providing the proper medication at the earliest possible time.

III. Discussion:-

Nasal vestibulitis is the most common infection affecting children and adult population without any sex predilection. The right side is more commonly affected than left. This could be due to right hand predominance (90% of the population)⁶, possibly due to nose picking. Interestingly, the case that we report here also was affected at the right. Moreover, the child is a right-handed person. Hence, though it cannot be asserted, we associate the nose pricking as the predisposing factor which leads to the disease. Similar case was reported by Baksi⁷ in 2018. Haemophilus influenza is the most common organism isolated in children⁸, in this case we found staphylococcus aureus organism in the pus culture from the right nasal vestibule, which (together with Streptococcus) is the most common organism that causes orbital inflammation. Even though staphylococcus aureus is facultative anaerobes and seen in the normal flora of human nose, skin and mucous membranes, the pathologic strains also have been isolated from the bacterial infections⁹.

Antibiotics showed a considerable impact on the outcome of the disease in our patient. Use of antibiotics also reduced the risk of serious complications. Parenteral antibiotics Cefepime sulbactam, vancomycin were effective against staphylococcus aureus. Effective course of antibiotics in the initial period reduced the CRP level. On the other hand inappropriate and inadequate use of antibiotic has sometimes resulted in masking the obvious symptoms and signs of complications like pain, swellings, blurring of vision, headache,

diplopia and subsequently resulting in worse the expected outcome. Pain and erythema started improving after 12 hours of medical therapy, in our case.

Radiological investigation plays a significant role in early detection of complication and for planning the surgical approach. Computerized tomography has become the investigation of choice¹⁰, but in early stage of orbital abscess ultrasonography is more useful. In our study CT scan was not showing any signs of orbital abscess or intracranial complications, but the CT viewed bilateral periorbital cellulitis and sinusitis.

Nasal vestibulitis seems to be a simple nasal infection, but if not treated properly, it can go for severe life threatening complications. Hence nasal furuncle or any infection in the mid facial skin (the dangerous triangle of face) may transmit the infection to nasal cavity, paranasal sinuses, orbit and intracranium (cavernous sinus thrombosis). In this study paranasal sinuses (frontal, maxillary and ethmoid sinusitis) and periorbital region (periorbital cellulitis) were involved. Orbital inflammation is associated with a more complicated clinical course, hence needs more aggressive treatment. Considering the risk of midfacial infections which can lead to intracranial complications, a close observation of patients is also necessary. Rare complications of nasal infections leading to cavernous sinus thrombosis and necrotizing pneumonia has also been reported^{11,12}. Hence, aggressive approach should be considered especially in immunocompromised patients and/or in patients with risk factors.

IV. Conclusion:-

We report a case of nasal vestibulitis complicated as bilateral preseptal cellulitis in a 4 year old female child. Child was presented with nasal furuncle with fever and facial swelling without any intracranial complications. She was treated with parental antibiotics along with topical antibiotic and supportive care. Child recovered completely and we could prevent the further progression of disease to other life threatening complications.

References:-

- [1]. Thatai D, Chandy L, Dhar KL. Septic cavernous sinus thrombophlebitis: a review of 35 cases. *J Indian medical assoc* 1992; 90: 290-292.
- [2]. Standring S, ed. *Gray's anatomy: the anatomical basis of clinical practice* 41st edn. Edinburgh: Churchill Livingstone; 2015.
- [3]. Rohana AR, Rosli MK, Nik Rizal NY et al. Bilateral ophthalmic vein thrombosis secondary to nasal furunculosis. *Orbit* 2008; 27: 215-7.
- [4]. Janfaza P, Cheney ML. Superficial structures of the face, head, and parotid region. In: Janfaza P, Nadol JB, Galla RJ, Fabian RL, Montgomery WW, editors. *Surgical Anatomy of the Head and Neck*. Lippincott Williams & Wilkins, 2001; 29-32.
- [5]. Lipschitz N, Yakirevitch A, Sagiv D, et al. Nasal vestibulitis: Etiology, risk factors, and clinical characteristics: A retrospective study of 118 cases. *Diagn Microbiol Infect Dis* 2017 Oct; 89(2):131-4.
- [6]. Migirov L, Wolf M. In search of correlation between hand preference and laterality of hearing impairment in patients with otosclerosis. *Eur Arch Otorhinolaryngol*. 2014; 271: 2835-7.
- [7]. Bakshi SS. Image diagnosis: Nasal furunculosis—a dangerous nose infection. *Perm J* 2018; 22: 17-076.
- [8]. G.B. Krohel, H.R. Krauss, J. Winnick, *Ophthalmology* 89 (1982) 492–498.
- [9]. Whitt DD, Salyers AA (2002) *Bacterial pathogenesis: A Molecular Approach* (2014) USA: ASM Press 22: 153.
- [10]. K.D. Pereira, R.B. Mitchell, R.T. Younis, R.H. Lazar, Management of subperiosteal abscess of the orbit in children — a 5 year experience, *Int. J. Pediatr. Otolaryngol*. 38 (1997) 247–254.
- [11]. Doroszewska G, Winiarski P, Zmudzinski A, Wrzesinski W. [Septic thrombosis of the cavernous sinus complicated by intracerebral hemorrhage]. *Otolaryngol Pol*. 2005; 59(6):879-82.
- [12]. Laifer G, Frei R, Adler H, Fluckiger U. Necrotising pneumonia complicating a nasal furuncle. *Lancet*. 2006 May 13; 367(9522):1628.

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