

# Chronic Invasive Fungal Sinusitis With Orbital Complication In Immunocompromised Patient

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**Abstract**— 57 years old male patient, a known case of DM disease on oral hypoglycemic drug, presented with headache and bilateral nasal obstruction with loss of smell for 2 year . After 6 months presented again with same symptoms but associate with painless left periorbital swelling . O/E proptosis left eye , limited eye movement with preserved vision, displacement of the eye downward and to left . Confirmed by non-contrast CT scan of paranasal sinuses and brain which helped in planning the best management option . Diagnosed as a case of invasive fungal sinusitis with orbital complication. His condition needed surgical intervention to avoid further complications.

**Index Terms**— Invasive fungal sinusitis , Immunocompromised, Nasal obstruction ,Aspergillosis , Proptosis , Erosion , Calcification , CT-scan

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## Introduction:

Sinus infection lasting for months or years is called *chronic sinusitis*. Most important cause of chronic sinusitis is failure of acute infection to resolve. Acute infection destroys normal ciliated epithelium impairing drainage from the sinus. Pooling and stagnation of secretions in the sinus invites infection [Fig.1][1] .We are presenting this case of chronic invasive fungal sinusitis as uncommon case, left orbital complication in Jazan region-KSA to increase the awareness about the disease , complications and its management.

## Case report:

57 years old Saudi male, a known case of DM for three years, on oral hypoglycemics. He was doing well till 2 years back he started to complain of bilateral nasal obstruction and loss of smell associate with sudden onset of left frontal headache on waking up, progressive in character not relief by analgesic . Then he went to hospital and consulted ENT doctor there for progressive headache and nasal obstruction . ENT specialist examined him and found nasal polyps ,paranasal non-contrast CT request showed opacification with calcification in all sinuses(maxillary-ethmoid-frontal-sphenoid) diagnosed him as fungal infection of sinuses. The patient was on steroid nasal spray +saline irrigation and he is on waiting list of surgery Functional Endoscopic Surgery of Sinuses(FESS). While he waiting for surgery he came back after 6 months to ENT clinic with sudden left periorbital swelling .The ophthalmologist saw him and say the swelling is cystic non-tender associated with displaced the eyeball forward , downward , laterally and limiting up move [Fig.2]. The vision is intact , visual acuity 6/18 , intraorbital pressure within normal level and no papilloedema . Non-contrast CT orbit and head done for him showed thickened mucosa with opacification of sinuses and bone erosion of left anterior frontal bone with soft tissue extension [Fig.3]. The periorbital swelling resolve when give him dexamethason 8 mg IV or IM OD with careful blood sugar monitoring and if stop steroid the swelling appear again. Because of lack of facilities of neurosurgery, non availability of navigation system in OR , patient was referral to higher center for further management.

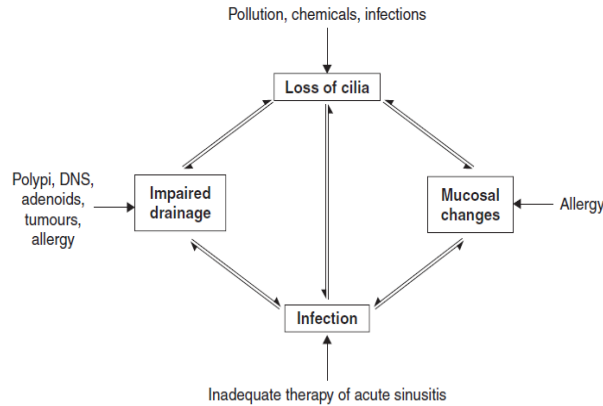
## Discussion:

Many different species of fungi affect paransal sinuses , the more common is Aspergillus . There are four varieties of fungal infection of sinuses are seen : allergic , non-invasive (fungal ball), chronic invasive and acute fulminant[2] . Invasive fungal infection of paranasal sinuses are uncommon and usually occurs in sever immunodeficient patients [4] like HIV and malignancy. Here in this case the fungus invades into the sinus mucosa . later on after chronic obstruction to sinus resulting in accumulation of sinus secretion (mucocele) that lead to expand the sinus and and destroy it is bone wall[3] .The patient in this case report presented with common symptoms of nasal obstruction , loss of smell , headache and periorbital swelling .CT scan of sinuses is the accurate investigation to diagnosis fungal sinusitis and it is complication .The treatment in this case is Functional Endoscopic Surgery of Sinuses (FESS) with help neurosurgeon . Surgery consists of removal of affected mucosa, bone and soft tissue . Antifungal medication to be decided after surgery biopsy of specimen and culture result . No role of antifungal in this case , it is helpful only in acute invasive fulminant fungal sinusitis . There is recent study about management of chronic fungal sinusitis has found that steroid nasal irrigation in saline following FESS improve quality of life and the adverse effects are minor compare to systemic steroid[5] . Close follow up is needed for optimum outcome by serial CT scans

## Conclusion:

Fungal sinusitis is common in immunocompromised patient. Invasive sinusitis can progress rapidly, and typical necessitates surgery[6] . Aspergillus infection is common cause. CT finding of calcifications can help to differentiation between fungal and non-fungal infection . Early diagnosis very useful and help to avoid further complication . Treatment of invasive fungal sinusitis is FESS with help of neurosurgeon .No role of post-surgery antifungal in our case unless it become invasive fulminant sinusitis . Steroid nasal irrigation in saline following FESS improve quality of life. Close follow up by serial CT-scans is important .

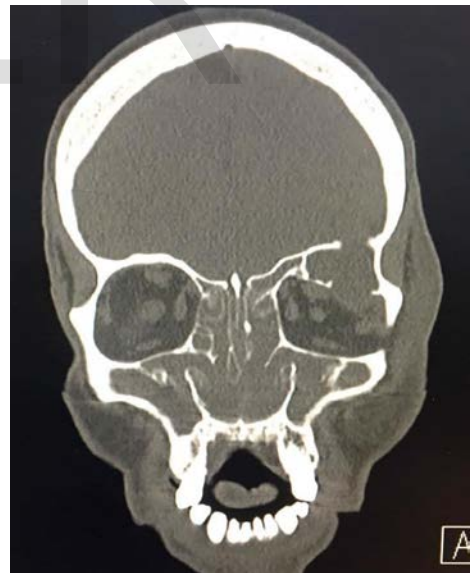
**FIGURES:**



**Figure 1:** Photo shows factors and pathophysiology of chronic sinusitis



**Figure 2:** Photo shows left periorbital swelling with displaced eye



**Figure 3:** Non-contrast Ct scan shows opacification and calcification of sinuses with left frontal bone sinus erosion

**References:**

[1,2, 3] Diseases of Ear, Nose and Throat & Head and Neck Surgery, 6/e PL Dhingra, Shruti Dhingra and Deeksha Dhingra(2016)

[4][HTTPS://EMEDICINE.MEDSCAPE.COM/ARTICLE/863062-OVERVIEW#A6](https://emedicine.medscape.com/article/863062-overview#a6)

[5][HTTPS://WWW.NCBI.NLM.NIH.GOV/PUBMED/29054113](https://www.ncbi.nlm.nih.gov/pubmed/29054113)

[6][HTTP://WWW.SINUSES.COM/FUNGAL.HTM](http://www.sinuses.com/fungal.htm)

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