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Isolated Unilateral Ptosis Presenting as a Complication of Acute Rhinosinusitis: Case Report

Dr. Ajinkya A. Kelkar*, Dr. Sarang Pabalkar

Consultant ENT, Maharashtra Medical Foundation Hospitals, Pune, India.

***Corresponding Author:** Dr Ajinkya A. Kelkar MS, DNB, MRCS ENT (UK), Consultant ENT, Maharashtra Medical Foundation Hospitals, Pune, India.*

Abstract

Patients with acute sinusitis most commonly present with nasal congestion, nasal discharge, post nasal drip, facial pain and headache. Uncommonly ocular and intra cranial complications are seen due to proximity of orbit and brain to paranasal sinuses. However isolated ptosis presenting as an ocular complication of rhinosinusitis is uncommon especially without visual loss and impact on extra ocular movements. We report a case of 13 years old male patient who presented to our neurology colleagues with a 3 days history of left sided unilateral isolated ptosis. He was being evaluated for myasthenia gravis and MRI scan revealed paranasal sinus disease which suspicion of mucopyocoele. He underwent a surgical drainage of sphenoid under appropriate antibiotic cover and his symptoms resolved almost completely on the 2nd post-operative day. The objective of this case report is to highlight unusual complication of acute sinusitis thereby providing guidance to diagnosis and treatment of such cases.

Keywords: *Ptosis, acute sinusitis, orbital complications*

Introduction

Rhinosinusitis is the inflammation of the mucous membranes of nose and paranasal sinus(es). Rhinosinusitis is a widely seen in population affecting affecting more than 14% of adults and children.[1-4] It has high propensity to become chronic once the signs and symptoms persist for more than 12 weeks. Chronic rhinosinusitis is associated with multi bacterial pathogens compared to acute rhinosinusitis which is usually uni-microbial.[5-7]

Chronic rhinosinusitis usually presents with nasal stuffiness, nasal discharge, postnasal drip, facial pain/ pressure, persistent dry cough, mouth breathing and snoring. Uncommonly it may present with features of ocular and cerebral complications which occur due to proximity of orbit and brain to the paranasal sinuses. Ocular complications have been classified by Chandler into pre- septal cellulitis, orbital cellulitis, sub-periosteal abscess, orbital abscess and cavernous sinus thrombosis.[8] Yet isolated ptosis presenting as an ocular complication of rhinosinusitis is uncommon especially without visual loss and impact on extra ocular movements.

The objective of this case report is to highlight unusual complication of rhino sinusitis thereby providing guidance to diagnosis and treatment of such cases.

Case Presentation

A 13 years old male patient presented to our neurology colleagues with a 3 days history of left sided unilateral isolated ptosis. He also complained of mild generalised headache and left peri-orbital pain. He denied any history of nasal obstruction, nasal discharge, recurrent rhinosinusitis or post nasal drip. He was being evaluated for myesthenia gravis by neurology colleagues and a MRI scan was requested to rule out intra cranial pathology. MRI scan revealed paranasal sinus mucosal disease affecting sphenoid sinus along with left posterior ethmoid sinuses. The left half of sphenoid sinus showed diffusion restricted contents with peripheral mucosal enhancement suggestive of mucocoele/ pyocoele. There was extra-conal fat stranding in the left orbit adjacent to the medial rectus and superior oblique. The optic nerves were intact with no evidence of cavernous sinus thrombosis.

At this stage, ENT opinion was requested. On ENT examination, there was no mucopus or polyps seen in the nasal cavities although nasal congestion was noted bilaterally. Ocular findings noted by Ophthalmology colleagues showed isolated left sided ptosis with normal vision, full range of extra ocular movements and bilateral equally reacting pupils.

The patient was started on intra-venous broad spectrum antibiotics (Cefuroxime), oral anti-histaminics and topical nasal decongestants. CT scan of paranasal sinuses/ orbit was requested to identify bony landmarks. CT scan confirmed inflammatory pathology of paranasal sinuses with intact lamina papyracea and intact optic nerve canals. Under appropriate antibiotic cover, an endoscopic sinus surgery was planned to drain the suspicious mucopyocoele of left sphenoid sinus. Endoscopic picture of the left sphenoid sinus revealed inflamed oedematous mucosal lining with pus within the left sphenoid sinus. Patient showed a significant improvement on 2nd post-operative day with almost complete resolution of ptosis. An intra-operative swab from left sphenoid sinus pus was sent for culture sensitivity which revealed methicillin resistant staphylococci aureus sensitive to Linezolid. Patient was then discharged from the hospital on the 3rd post-operative day with 2 weeks course of oral Linezolid. Patient's post-operative recovery was uneventful and was followed up after 2 weeks and 3 months to assess complete recovery.

Fig1. *Pre-operative picture of the patient with left sided unilateral ptosis*

Fig2. *Post-operative day 2 picture of patient showing almost complete resolution of left sided ptosis*

Fig3. *Coronal CT scan of paranasal sinuses showing complete opacification of left sided sphenoid sinus along with mucosal thickening in right sphenoid sinus*

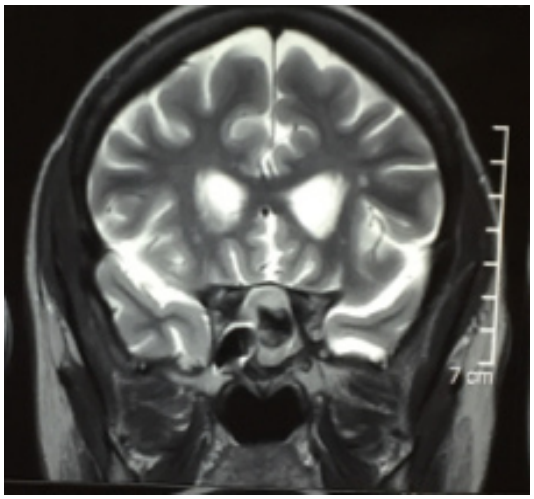

Fig4. *Coronal MRI scan of paranasal sinuses showing restriction of contrast in left sphenoid sinus with a suspicious mucopyocoele*

Discussion

Even though the occurrences of complications of rhinosinusitis are significantly lower than decades ago, they continue to appear despite progresses in therapy that have been achieved in recent years. The proximity of orbit to the paranasal sinuses provides a convincing explanation to these events. Lamina papyracea divides the orbit from the nasal space. Multiple thin blood vessels inside the orbit allow the spread of aggressive infection leading to commoner complications of orbital cellulitis. Ptosis as a complication especially unilateral is not as common and may be discovered incidentally as in this case.[9,10] Swift et al have described a child with painful ophthalmoplegia and ptosis who on CT scan was found to have same sided ethmoid, maxillary and frontal sinusitis. Treatment was conservative and the patient improved without any surgical intervention.[10]

Another case reported in 2017, has described an adult male patient presenting with unilateral ptosis as a complication of acute sinusitis.[9] However in this case report, the patient had symptoms of nasal discharge and post nasal drip. This patient was treated conservatively and he improved with medical management after 5 days of antibiotics. In comparison to these studies, our patient had a suspicious mucopyocoele which was reported on the MRI scan and hence it was decided to intervene surgically to drain the pus from the sphenoid sinus after 3 days of broad spectrum antibiotics.

Ptosis is the drooping of the upper eyelid and may be caused by myogenic, neurogenic, aponeurotic, mechanic and traumatic causes.[11] Ptosis as a complication of rhino sinusitis is usually associated with painful ophthalmoplegia, diminished vision and altered consciousness as seen in cavernous sinus thrombosis.[10] The oculomotor nerve forms a lateral relation with cavernous sinus and hence patients with cavernous sinus thrombosis present with proptosis, chemosis, painful ophthalmoplegia and ptosis.

The pathophysiology for isolated ptosis can be explained by the partial pressure compression of the superior ramus of oculomotor nerve by the surrounding inflamed sinuses.[12] This branch of oculomotor nerve supplies the levator palpebrae superioris and superior rectus muscle in the form of micro branches. Affection of these micro branches can explain isolated ptosis without any extra ocular movement defects.

Conclusions

Isolated unilateral ptosis is an uncommon complication of rhino sinusitis which may or may not present to ENT surgeon. Rhino sinusitis should be considered as a cause for isolated ptosis. Patients need to be treated broad spectrum antibiotics and if necessary surgical intervention should be performed. If such cases are reported in a greater frequency, ptosis should be added to the classification of ocular complications of rhino sinusitis.

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