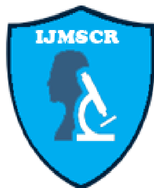

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Isolated Oculomotor Nerve Palsy- A Rare Complication Of A Common Disease

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Abstract

Sinusitis is a common condition in our daily practise, but rarely accompanied by cranial nerve palsies. We describe a 61-year-old female with a history of severe headache and inability to open the right eye for 20 days duration. Examination revealed ptosis of right eyelid with restricted ocular movements in right eye. Magnetic resonance imaging of paranasal sinuses showed mucosal thickening in right ethmoidal and frontal sinuses with subperiosteal abscess. The sinusitis was treated with antibiotics, nasal decongestants, analgesics, nasal douching and antihistamines. The patient reported with regression of symptoms, including right eye ptosis within a week of medical therapy. This case of acute sinusitis causing ptosis is presented because of its infrequent nature and to create awareness that cranial nerve palsy can occur as a complication of sinusitis.

Keywords: Sinusitis, isolated oculomotor nerve palsy, ptosis

Introduction

Sinusitis is inflammation or swelling of the paranasal sinuses and most commonly due to infection. The characteristic symptoms of acute sinusitis nasal discharge, nasal congestion, facial pain, smell disturbances lasting for less than four weeks. The incidence of acute sinusitis is 15-40 episodes per 1000 patients per year. Majority of the cases are due to viral origin and only 2% of cases are due to bacterial infection. Sinusitis can also leads to neurological complications from orbital and intracranial spread of disease.[1]

Isolated oculomotor nerve palsies are rare (4 per 100,000) and the common causes are microvascular, neoplasm, trauma, aneurysm and post- surgical complication. Although rare complications may be life threatening and carry a significant morbidity rate.

This case of acute sinusitis causing isolated oculomotor nerve palsy is presented because of its rarity and to create an awareness among the medical professionals, the cranial nerve palsy as a rare complication of sinusitis.

Case Presentation:

A 61-year-old female walked into our ENT OPD with a history of severe headache, right eye pain and inability to open the right eye for 20 days duration. The skin around the orbit was normal. Patient was conscious and the general medication condition was fine. During ear-nose-throat examination, detected ptosis on right upper eyelid with restriction of ocular movements like adduction and elevation in right eye and deviated nasal septum towards right with bilateral inferior turbinate hypertrophy and tenderness in both right frontal and ethmoidal sinuses. Other cranial nerve examinations was normal. Ophthalmology expert opinion was obtained and revealed restriction of Superior rectus and Levator palpebrae superioris muscle, no papillo edema and no involvement of other cranial nerves and diagnosed as Oculomotor nerve palsy.

Further evaluation with Magnetic resonance imaging of brain with paranasal sinuses demonstrated mucosal thickening in the right frontal and ethmoid sinuses with subperiosteal abscess. Altogether, supported the diagnosis of sinus infection.

The patient was admitted in our ENT ward and treated conservatively with injectable antibiotics, nasal decongestants, analgesics, nasal douching and antihistamines. To our surprise the patient reported with resolution of symptoms including ptosis within one week of medical therapy. Repeat MRI was done and it also showed no evidence of any subperiosteal abscess and mucosal thickening in the sinuses. We could see a smile in the patients face. Patient was on follow up for two months and had no evidence of any recurrence.

Figure 1: (A) MRI brain with PNS showing mucosal thickening in right frontal and ethmoidal sinuses with subperiosteal abscess. (B) Post treatment MRI film of the patient

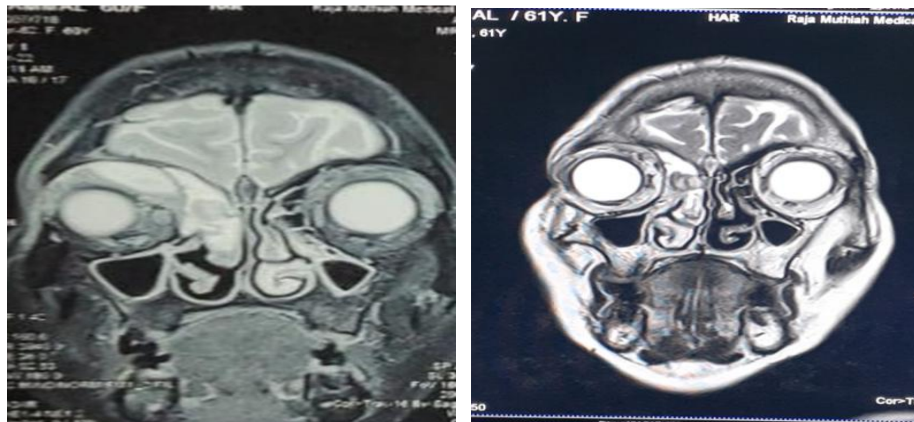

Figure 2: (A) Clinical picture of patient with right eyelid ptosis. (B) Post treatment clinical picture of the patient

Discussion:

Sinusitis is a broad term. Acute sinusitis defines infection lasting for less than 4 weeks, subacute sinusitis means symptoms lasting for 4-12 weeks and chronic sinusitis means infection lasting for more than 12 weeks. Acute sinusitis is a very common disease, and the symptoms include nasal discharge, nasal congestion, facial pain and reduction in smell lasting for less than 4 weeks. Isolated cranial nerve palsies are very rare and common causes are microvascular dysfunction, neoplasm, trauma, aneurysm and post-surgical complication.[2,3] Complications of sinusitis include intracranial and orbital involvement. Orbital complications are more common than intracranial complications. Sinonasal orbital infections are divided into five stages. First stage is preseptal cellulitis characterised by eyelid edema without visual loss. Second stage is postseptal

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cellulitis and patient presents with pain, chemosis and proptosis. Third stage is subperiosteal abscess. Fourth stage is the orbital abscess characterised by severe proptosis, opthalmoplegia and visual loss. Fifth stage is cavernous sinus thrombosis.

In this patient, we believe the oculomotor nerve palsy was due to sinusitis. Superior division of the oculomotor nerve innervates the levator palpebrae superioris muscle which elevates the eyelid.[4] Oculomotor nerve emerges from anterior end of cavernous sinus and passes along the upper part of the lateral wall of sphenoidal and posterior ethmoidal sinuses. It is that compression of nerve due to sinusitis at this point within the ethmoid sinus resulted in ptosis. The patient symptoms and the resolution of the symptoms with treatment of sinusitis supports this explanation.[5] There are limited studies reporting cranial nerve palsy as an unusual complication of sinusitis. Among the few cases identified with cranial nerve palsy as a complication of sinusitis, abducent nerve was frequently affected followed by Oculomotor nerve.[6]

Conclusion:

This case report of isolated oculomotor nerve palsy resulting from sinusitis adds to the limited literature. This case of acute sinusitis causing isolated oculomotor nerve palsy presented because of its unusual nature and to create an awareness among the medical professionals that the cranial nerve palsy as a complication of sinusitis so that the differential diagnosis of cranial nerve palsies may be improved in the future.

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