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## Unilateral ptosis: an uncommon presentation of chronic sinusitis - A case report

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**Abstract** Chronic sinusitis is an inflammatory lesion that involves the paranasal sinuses with symptoms and signs that are beyond 12 weeks in duration. It commonly presents with nasal stuffiness, mouth breathing, purulent nasal discharge, post natal drip, snoring, cough, headache, facial fullness, hyposmia, sore throat and halitosis. Features of ocular and cerebral complications may be present at diagnosis but are uncommon

and can thus result in misdiagnosis. A 15 year old male presented with sudden onset ptosis and other symptoms that initially suggested an intracranial SOL or a Cavernous sinus thrombosis. A CT scan of the head and neck structures identified chronic sinusitis as the only likely pathology. We present this case to highlight an unusual ocular complication of chronic sinusitis.

### Introduction

Chronic sinusitis is an inflammatory lesion that involves the paranasal sinuses with symptoms and signs that are beyond 12 weeks in duration. It occurs in all ages with no gender, racial or ethnic predilection.<sup>1,2</sup> Chronic sinusitis is a common disease worldwide, particularly in places with high levels of atmospheric pollution.<sup>3</sup> In pediatric population the term rhinosinusitis is more commonly used to include both acute and chronic infection which can be both viral and bacterial in origin. The common occurrence in pediatric population is likely secondary to an increased frequency of exposure to upper respiratory tract infections in this age group.<sup>3</sup> The illness is associated with loss of productivity and missed school days with patients suffering a comparable decrease in quality of life.<sup>4</sup>

The common clinical features of chronic sinusitis are nasal stuffiness, nasal discharge, postnasal drip, facial pain/pressure, persistent dry cough, mouth breathing and snoring. Others include fever, fatigue and halitosis. Uncommonly it may present with features of ocular and cerebral complications such as ptosis, intracranial infections, orbital cellulitis.<sup>5-7</sup>

The objective of this report is to highlight these uncommon presentations, broaden our differentials of these presentations with a guide to diagnosis and treatment.

### Case Presentation

A 15 year old male presented in the Emergency Unit of the University of Nigeria Teaching Hospital (UNTH) Enugu Nigeria with a sudden onset of right sided throbbing

temporal headache, right eye swelling and pain, with drooping of the right upper eyelid. There was associated rhinorrhea of thick yellow mucus draining from the right nostril. Coexisting constitutional symptoms included high grade fever, and vomiting. There was no neck pain and consciousness was preserved. There was feeling of facial fullness but no facial pain, photophobia, redness nor discharge from either eye. There was no antecedent trauma to the face or history of foreign body inhalation through the right nostril. He had a past history of recurrent nasal stuffiness in the preceding 4 months with occasional fetid breath. Symptoms were progressive over 5 days before presenting to the emergency unit.

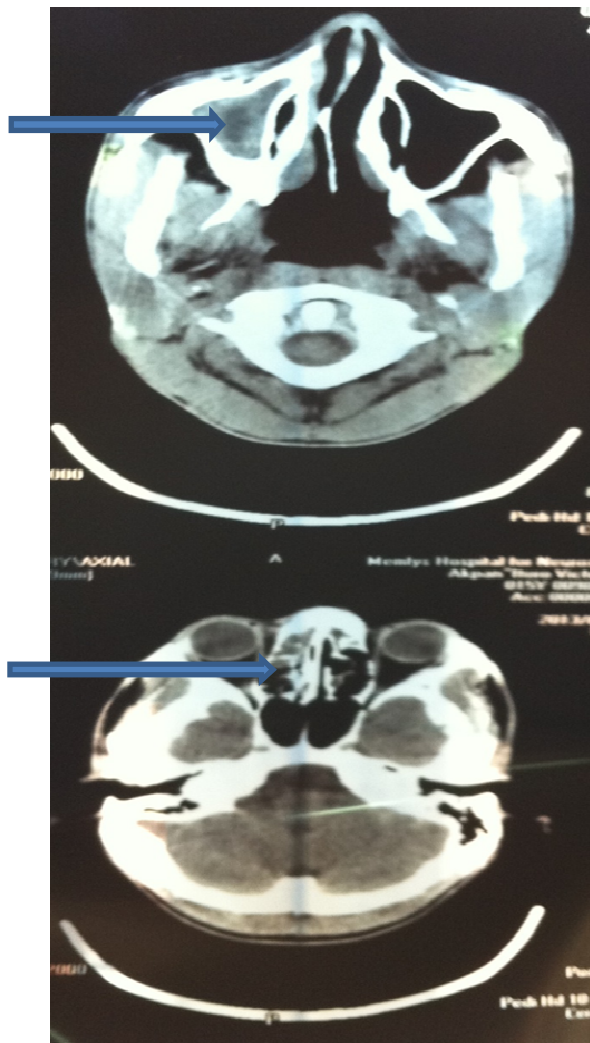
He was fully conscious. His body temperature was 39.5°C with pulse rate of 90 per minute and blood pressure of 100/60 mm Hg supine. Examination of the eye revealed: ptosis of the right upper eyelid with normal vertical eye movements and both pupils were of normal size but reacted sluggishly to light. There were no other neurological deficits elicited on further examination. Nasal examination revealed a narrow right nasal cavity with enlarged pale turbinates. Pharyngeal examination showed thick yellow exudate on the right posterior pharyngeal space.

Our initial diagnosis included intracranial space occupying lesion to rule out a cavernous sinus thrombosis (CST). A coronal CT scan of the head showed inflammatory changes in the right ethmoidal and maxillary sinuses (fig 1) suggesting a chronic rhinosinusitis. It further confirmed that there were no SOL or CST and no foreign body was seen. Complete blood

count and electrolyte studies were normal with ESR of 72mm/hr.

Parenteral ceftriaxone was commenced and within 72 hours of admission major presenting symptoms had resolved and by the 10<sup>th</sup> day the right sided ptosis had completely resolved. He was subsequently discharged on oral third generation cephalosporin, nasal decongestants and steroid nasal spray. On review 4 weeks following discharge he had remained stable with no further recurrence of headache, nasal discharge and ptosis.

**Fig 1:** Coronal CT scan showing inflammatory changes and occlusion in the right maxillary and ethmoidal sinuses (1<sup>st</sup> and second arrows respectively)



## Discussion

Chronic sinusitis is an inflammatory lesion that involves the paranasal sinuses with symptoms and signs that are beyond 12 weeks in duration.<sup>1,3</sup> It commonly presents with nasal stuffiness, mouth breathing, purulent nasal discharge, postnasal drip, snoring, cough, headache, facial fullness, hyposmia, sore throat, halitosis. Features of ocular and cerebral complications may be present at diagnosis<sup>4</sup> Documented and commoner orbital

complications include preseptal cellulitis, orbital cellulitis, subperiosteal abscess, and cavernous sinus thrombosis.<sup>5-12</sup> Ptosis as a complication especially as a unilateral presentation is not as common and may usually be discovered incidentally.<sup>5,6,8</sup> Swift and colleagues<sup>5</sup> in Liverpool reported a case of ptosis due to chronic sinusitis detected by incidental CT finding. The patient presented with painful ophthalmoplegia of the right eye and ptosis. The CT scan finding revealed opacification of the right ethmoid, frontal and maxillary sinus. All symptoms resolved with sinus irrigation and antibiotic treatment.<sup>4</sup> Suzuki and colleagues<sup>13</sup> in Tokyo reported another case of a patient who presented with fever, neck rigidity, ophthalmoplegia and ptosis, with CT scan and MRI results that revealed a shadow in the sphenoid sinus and cavernous sinuses. The symptoms improved with sphenoidectomy and antibiotics.

The involved sinuses in our patient, the ethmoidal and maxillary receive some innervation from the seventh and third cranial nerves.<sup>14</sup> Partial pressure compression of a superior rami branch of the oculomotor nerve by the surrounding inflamed sinuses may be a likely explanation for the ptosis our patient experienced,<sup>6,14</sup> as vertical eye movements were not affected thus excluding entire third nerve involvement. Distal to the cavernous sinus and maxillary sinus, the micro branches of the oculomotor nerve such as the superior ramus which supplies the superior rectus and the Levatorpalpebral muscles of the eye<sup>14</sup> may have thus been compressed by the inflamed sinuses.

Even though the risk factors for cavernous sinus thrombosis are infections of the paranasal sinuses and mid-face as well as bacteremia, trauma, infection of the ear or maxillary teeth,<sup>9</sup> thrombosis of the cavernous sinus almost always progresses to involve the contra lateral eye as well within 24-48hrs which is pathognomic<sup>17</sup> in addition to other common signs such as periorbital oedema and pain which worsen overtime, facial fullness without facial pain, visual disturbances major cranial nerve signs in addition to headache.<sup>15</sup> The sixth cranial nerve is commonly the first affected owing to its course directly through the cavernous sinus followed by the third and fourth nerves involvement in more extensive disease as these nerves are protected in their course in the lateral wall of the cavernous sinus.<sup>18</sup> Our patient presented with headache, eye swelling, and ptosis that remained confined to the right eye and he did not have major cranial nerve deficits. Orbital cellulitis is the commonest complication of maxillary sinusitis and may present with fever, headache just like in our patient<sup>15,16</sup>. However proptosis and ophthalmoplegia are the cardinal signs and symptoms of orbital cellulitis<sup>19</sup> both of which were absent in our patient as well as other symptoms such as blurred vision and reduced visual acuity. In other intracranial SOL such as tumors and abscesses, one would have expected extensive lateralizing signs but these were also not present in the index case.

The invaluable use of CT scan as a diagnostic tool to help narrow the diagnosis cannot be overemphasized as the patient's acute presentation had these as possible

differential diagnosis. There is therefore a need to strengthen our health system so as to easily access necessary supportive diagnostic investigations even when patients are unable to pay out-of-pocket.

The goal of medical therapy is to reduce mucosal oedema, promote sinus drainage, eradicate infections and prevent complications. Oral antibiotics for two weeks, topical nasal steroids, decongestants and saline nasal sprays have been employed satisfactorily<sup>10,11,12</sup>. Our patient did well on this therapy. He did not require surgical intervention or follow-up physiotherapy.

## Conclusion

Ptosis could complicate chronic sinusitis and the latter must be excluded in cases of ptosis.

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