

## Subperiosteal Abscess of the Orbit

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### **ABSTRACT:**

**BACKGROUND:** Orbital complications resulting from sinusitis has decreased with advent and use of antibiotics. Subperiosteal abscess of the orbit is the collection of pus between the periorbita and the orbital wall, usually results from paranasal sinus infection.

**MATERIALS AND METHODS:** Patient was subjected to Visual acuity testing with Snellen's chart, Anterior segment examination with slit lamp bio-microscopy, fundus examination with +90D lens, Intra ocular pressure with Goldmann's applanation tonometry, and contrast enhanced CT of Paranasal sinuses with orbits. The patient was planned for endoscopic endonasal drainage of the subperiosteal abscess.

**RESULTS:** Initial treatment is with admission and broad spectrum intravenous antibiotics. Over next 48 hours, the swelling and redness around the left eye was increased. BCVA dropped, IOP increased, indentation of globe was present radiologically. The patient was planned for endoscopic endonasal drainage of the subperiosteal abscess. The patient was managed postoperatively with antibiotics, steroids and decongestants. Visual acuity improved from 6/60 preoperatively to 6/6.

**CONCLUSION:** Prompt and accurate diagnosis for this infrequent condition is important, because it may progress to blindness, meningitis, intracranial abscess, and death. Progression of orbital signs in Subperiosteal abscess, failure of improvement after 36 to 48 hours of intravenous antibiotics warrants surgical drainage. Postoperative use of steroids can decrease edema around the optic nerve and improves vision.

**KEY WORD:** Subperiosteal abscess, periorbita, paranasal sinuses, sinusitis.

### **I. Introduction:**

Orbital complications resulting from sinusitis has decreased with advent and use of antibiotics. Subperiosteal abscess of the orbit is the collection of pus between the periorbita and the orbital wall, usually results from paranasal sinus infection.

**HISTORY:** A 14 year old girl was brought to causality with painful swelling of left eye since 2 days. Associated with throbbing pain and profound reduced vision. History of fever present. History of headache, nasal obstruction, postnasal drip and left sided facial pain present.

**PAST HISTORY:** History of similar nasal complaints in the past was present.

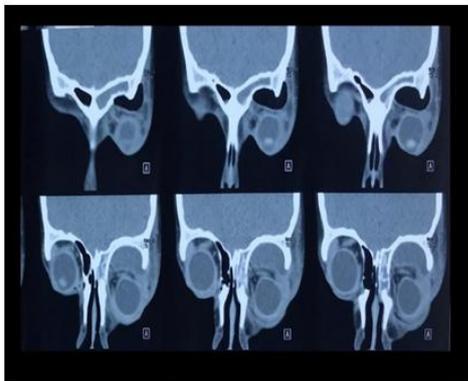
### **EXAMINATION**

- Initial examination showed that she was afebrile.
- ON EXAMINATION OF LEFT EYE: Non-axial proptosis was present.
- Conjunctiva was injected and chemosed with clear cornea.
- Ocular movements restricted in all gazes.
- Lens: clear
- Pupil: Normal in shape and reacting to light.

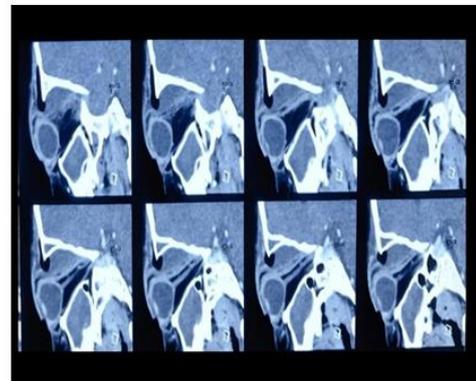
- Fundus:Normal
- RIGHT EYE wasnormal.
- BCVA was 6/60 in left eye and 6/9 in righteye.
- Intraocular pressure was 20mm of Hg in LE and 12mm of Hg inRE.
- She was admitted and treated with broad spectrum antibiotics. Intravenous ceftriaxone, metronidazole and gentamycin given.
- ENT referral was done.
- Random blood sugars were normal.
- Viral markers were negative.
- CECT of PNS with orbits done.

## II. Materials And Methods:

- VA with Snellen's chart, Anterior segment examination with slit lamp bio-microscopy, fundus examination with +90D lens, IOP with Goldmann's applanation tonometry, CECT of PNS with orbits.
- Orbit and Oculoplastic surgeon opinion was taken. Surgical drainage of abscess and postoperative use of intravenous steroids along with intravenous antibiotics was advised.



Proptosis of the left eye ball noted. Complete opacification of left maxillary, ethmoid and frontalsinuses on the left side.



Air pocket is seen in the superior aspect. Extraconal abscess in the superiorportion

**Provisional diagnosis:** Subperiosteal abscess of the left orbit secondary to sinusitis.

Over next 48hours, the swelling and redness around the left eye was increased. BCVA dropped, IOP increased, indentation of globe was present radiologically.

**TREATMENT:** The patient was planned for endoscopic endonasal drainage of the subperiosteal abscess.

Under general anaesthesia,

- Left middle meatal antrostomy, ethmoidectomy done.
- Medial wall of the lamina papyracea removed gently.
- Eyeball along with attached periorbita pushed laterally exposing the subperiosteal abscess which was drained and gentle irrigation performed with normal saline.
- Sphenoidotomy done.

The patient was managed postoperatively withantibiotics, steroids anddecongestants.

The vision was tested serially postoperatively inLeft eye

PRE OPVA : 6/60

POD-1: 6/24

POD-2: 6/18

POD-3: 6/12

POD-4: 6/9

POD-8: 6/6 (improved from 6/60 to 6/6).

The patient was discharged 2 weeks postoperatively and was on regular followup.

PRE OP:



POST OP:



### III. Discussion:

- Subperiosteal abscess (SPA) of the orbit is the collection of pus between the periorbita and the orbital wall.
- It usually results from paranasal sinus infection.
- The thin lamina papyracea that separates the orbit from the ethmoid sinus allows easy and direct spread of infection.
- Complications of rhinosinusitis are more common in children and adolescents because of their thinner, porous bony septa and sinus walls, open suture lines and larger vascular foramina.
- Initial treatment is with admission and broad spectrum intravenous antibiotics. If no improvement with parenteral antibiotics, surgical drainage of abscess has to be done. Surgery is often a combined procedure with an orbital surgeon and an otolaryngologist is necessary for optimal surgical management.

### IV. Conclusion:

Prompt and accurate diagnosis for this infrequent condition is important, because it may progress to blindness, meningitis, intracranial abscess, and death. Progression of orbital signs in Subperiosteal abscess, failure of improvement after 36 to 48 hours of intravenous antibiotics warrants surgical drainage. Postoperative use of steroids can decrease edema around the optic nerve and improves vision.

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