

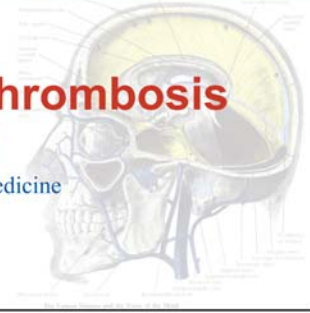


Septic Cavernous Sinus Thrombosis in a 15-Year Old Boy

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OBJECTIVES

To Know the predisposing factors for septic cavernous sinus thrombosis (CST)
To familiarize the clinician with the pathogenesis, diagnosis, and appropriate management of septic cavernous sinus thrombosis.

INTRODUCTION

A cavernous sinus thrombosis is a clot within the cavernous sinus, a large channel of venous blood cavity bordered by the sphenoid bone and the temporal bone of the skull.

ANATOMY

Structures Within the Cavernous Sinus (fig 1)

- Cranial Nerve 3
- Cranial Nerve 4
- Cranial Nerve 5
 - Ophthalmic Branch
 - Maxillary Branch
- Cranial Nerve 6
- Internal Carotid Artery



Figure 1

HISTORY

A 15-year old student presented to the Emergency Department with the complaints of:

- Headache
 - Fever
 - Pain and swelling of left eye
- The condition started before 6 days by symptoms of common cold then he got eye swelling and pain

He sought medical advice, was given systemic antibiotics, antipyretics and antibiotic eye drops

Past History :
Chronic Sinusitis

What is wrong?

Physical examination:

Patient is conscious but drowsy

Normal Vital Signs

Head and Neck: Figs 2,3

How the patient looked ?
Figures 2,3



Figure 2



Figure 3

What you can see in the pictures?

- Eyelid edema
- Proptosis
- Chemosis
- Periorbital Edema
- Excessive tearing

What you can't see in the pictures?

- Pupils: sluggish reaction
- Decreased visual Acuity
- Ophthalmoplegia

Other Cranial Nerves: Normal

Physical examination of other systems is unremarkable

INVESTIGATIONS

Lab work

1. Complete blood Pictures : showed only neutrophil leukocytosis
2. Metabolic Panel showed normal blood sugar, electrolytes, Renal and hepatic functions.
3. Blood Culture: Streptococcus sp
4. Lumbar Puncture: Not done (Refused)

Imaging studies:

1. CT: figures 4,5
2. MRI: was not done
3. Venography: was not available

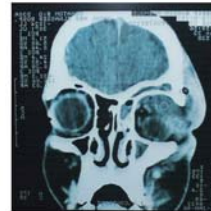


Figure 4

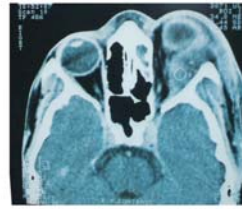


Figure 5

CT with IV contrast shows:

1. Left Retro - orbital swelling (collection)
2. Left maxillary sinusitis
3. Proptosis
4. Increased width of left Cavernous Sinus

What is the diagnosis?

Septic Cavernous Sinus Thrombosis

Treatment

1. Antibiotic Combination
 - Loading dose 80U/kg
 - Then 18 U/kg/h by IV infusion
 - Titrated to PTT
3. Steroids:
 - Hydrocortisone 100 mg IV q6h
4. Surgery:
 - Evacuation of the retro-orbital collection

Antibiotic Combination

- Metronidazole: 0.5 G IV q6h
- Vancomycin : 1G IV q8h
- Ceftriaxone: 2 G IV q12h

RESULTS

What happened to the patient?

- Improvement
- No neurological deficits
- Normal vision
- Normal Extra-Ocular movements
- Hospital stay 18 days
- ICU stay 6 days

Predisposing Factors for CST

- Aseptic: trauma, malignancy
- Septic:
 - Facial infection 50%
 - Sinusitis 30%
 - Dental Infections 10%

- Otitis Media 7%
- Chronic diseases: Diabetes Mellitus, chronic sinusitis
- Sphenoid sinusitis

Microbiology of septic CST

Bacterial Species	# CASES	% CASES
S. Aureus	44	69
Strep Sp.	11	17
S. Pneumonia	3	5
Gram-ve bacilli	3	5
Bacteroids sp.	1	2
Fusobacterium sp.	1	2
Rizopus sp.	1	2
Total	64	100

(Source: Southwick, Richardson, Swartz. Medicine. 1986; 65: 82-106)

Outcome of Septic CST

- Mortality – originally near 100%, has been about 30% since the introduction of antibiotics.
- Morbidity – permanent sequelae occur in more than half of the survivors.

COMPLICATIONS

- Blindness (20%)
- Visual, impairment (10%)
- Oculomotor palsy, diplopia (30-50%)
- Pituitary insufficiency (5%)
- Hemiparesis (5%)
- Seizure disorder
- Vascular steal syndrome

CONCLUSIONS

- Septic CST is an uncommon condition, but is an important diagnostic consideration.
- Septic CST and other intracranial complications of sinusitis are associated with significant morbidity and mortality.
- Aggressive treatment and recognition of sphenoid sinusitis is warranted.

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