



AN INTERESTING CASE OF OPHTHALMOPLEGIA AND STROKE

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Abstract : Cavernous sinus thrombosis was reported much during pre-antibiotic era and even that counts less than 100 cases. In reality, even though its incidence has fallen drastically in recent times, there is still a big question whether it is under-reported or under-diagnosed. Delay in early diagnosis and timely treatment can cost lives. We report a case of cavernous sinus thrombosis with an unusual complication (stroke), which improved drastically with treatment with residual morbidity.

Keyword : Cavernous sinus thrombosis stroke

CASE REPORT: A 45 years old gentleman, who was working as a watchman presented with chief complaints of intermittent fever for 1 week; associated with chills and rigors, dry cough for 1 week and headache for the past 5 days. There was no history of diplopia, dysphagia, dysarthria, motor deficits, sensory deficits, altered sensorium, involuntary movements, or seizures. There was no history of burning micturition, rashes, drug intake, recent travel or contact with pets. There was no history of sexual promiscuity. He consumes mixed diet, smoker and alcoholic for the past 10 years. There was no other significant history. Past history, family history and treatment history was unremarkable. On examination, Patient was well oriented, conscious, febrile, Irritable. There was no pallor, icterus, cyanosis, clubbing, lymphadenopathy, edema. Oral cavity examination showed presence of candidiasis. Cardiovascular, respiratory, abdomen and central nervous system examination was unremarkable. Investigations on the day of admission showed a total count of 12,600 with a differential count of 85% polymorphs and 15% lymphocytes. ESR was 25 and 50 mm at half and 1 hour respectively. Blood sugar, Renal function tests, liver function tests, urine routine, chest x ray and ECG were normal. ELISA for Retro virus was negative. Blood for culture and sensitivity (including fungal culture) was sent. Patient was started on supportive management with adequate hydration, analgesics and anti-pyretics with fluconazole for oral thrush. On day 2, patient developed swelling in Right upper eye lid with minimal chemosis of Right conjunctiva. In view of candidiasis and Right eye lid swelling probable diagnosis of invasive fungal sinusitis was suspected and CT- PNS was taken. CT PNS turned out to be normal. An ophthalmologist consult was obtained which was not contributory. On day 3, Patient developed worsening of chemosis and movement restriction of Right extra ocular muscles

predominantly in the lateral rectus. MRI – Brain with orbit screening was ordered and Post- MRI patient was shifted back to the ward. Once the patient was received in the ward, we noticed that the patient had restriction of extraocular movements bilaterally (L>R), chemosis of both the conjunctiva, Right LMN 7th nerve palsy

Right cerebellar signs +
GC worsened, patient was dyspnoeic, tachypnoeic, drowsy & more irritable



Limitation of extraocular movements Limitation of extraocular movements

Patient had a bilateral extraocular movement restriction with fever which was very much suggestive of a cavernous sinus thrombosis, but right LMN 7th nerve palsy and cerebellar signs



MRI Brain with diffusion restriction in right pons and cerebellum MRI showing left cavernous sinus thrombosis; right flow void



MRI revealed left cavernous sinus thrombosis with infarct in right pons and cerebellum. Patient was started on Inj. Vancomycin 1gm IV BD Inj. Ceftriaxone 2gm IV BD Inj. Hydrocortisone 100mg IV BD Inj. Heparin 5000 IU IV stat, followed by S/C TDS Decision to start heparin was controversial with not much of prospective trials for anticoagulation. We planned to start anti coagulation due to the embolic insult sustained, after explaining the risk to the patient. On day 4, there was no conjunctival chemosis B/L extraocular movements recovered to 70% of normal Residual neurological deficits are right 6th, 7th N paralysis with ipsilateral cerebellar signs On day 5, Extraocular movements restituted back to normalcy with no conjunctival chemosis But 6th, 7th N palsy & cerebellar signs persisted



Residual defect in right 7th Nerve

On day 6, ENT opinion for infections & diagnostic nasal endoscopy were negative ECHO: normal CSF : acellular, normal sugar & protein, VDRL, FTA-ABS -ve HIV – elisa : negative On day 10,

Blood culture : MRSA sensitive to linezolid and vancomycin. Step down to vancomycin alone and continued for two weeks.

Anti coagulation was stopped and steroids was tapered and stopped.

Patient is on follow up and doing good with residual right, 6th, 7th nerve and cerebellar deficits. **DISCUSSION:** Cavernous sinus thrombosis, was initially described by Bright in 1831, as a complication of epidural and subdural infection. Due to its complex location, cavernous sinus thrombosis is the most important of any intracranial septic thrombosis.^[1] With the advent of antibiotics, the incidence, morbidity and of course the mortality has dropped down from 100% to less than 30%. Patient can present with headache, cranial nerve abnormalities with lateral gaze impairment being the first to go, ^[2] signs of increased intracranial pressure, blindness, hypophysitis, stroke,^[3] meningismus and variable manifestations of sepsis. Most common cause implicated is Staphylococcus aureus followed by Streptococci and rarely fungal infections, depending on the host immune status. Internal carotid artery passes through the cavernous sinus and can get inflamed, thrombosed or occluded. Infarcts in the anterior circulation, in anterior and middle cerebral artery territories, which are the branches of internal carotid artery is a well reported entity. Surprisingly our patient had stroke in the vertebro basilar system (posterior circulation stroke). Such a complication is unique and has never been reported in the literature. The temporal profile is very characteristic, which makes it more likely a complication of cavernous sinus thrombosis rather than an incidental association (although either is possible). Having said that, is it biologically plausible to have posterior circulation as a complication of cavernous sinus thrombosis? The answer is yes. Circle of Willis, which communicates the blood between internal carotid artery and vertebra basilar system, could have transferred an emboli from one to other. MRI brain with or without MRV will confirm the diagnosis. Treatment includes empirical antibiotics covering MRSA, with a third generation cephalosporins and anaerobic cover, if there is a clinical suspicion. Steroids are indicated if there is a life threatening inflammation of the brain. Decision to anti coagulate is highly controversial^[4] and should be tailored for each patient after explaining the risk to the patient.



EOM improved, no chemosis Residual defect in right 6th Nerve

CONCLUSION:

Incidence of cavernous sinus thrombosis is under steady decline for the past two decades. Anterior circulation stroke is a rare complication of cavernous sinus thrombosis. We are reporting a case of posterior circulation stroke in cavernous sinus thrombosis, which can be explained by communication between the anterior and posterior circulation via circle of Willis, an entity which is first being reported in literature.

REFERENCES:

Laupland KB. Vascular and parameningeal infections of the head and neck. *Infect Dis Clin North Am. Jun 2007;21(2):577-90, viii.*

Duong DK, Leo MM, Mitchell EL. Neuro-ophthalmology. *Emerg Med Clin North Am. Feb 2008;26(1):137-80, vii.*

Seow VK, Chong CF, Wang TL, Lin CM, Lin IY. Cavernous sinus thrombophlebitis masquerading as ischaemic stroke: a catastrophic pitfall in any emergency department. *Emerg Med J . Jun 2007;24(6):440.*

Coutinho J, de Bruijn SF, Deveber G, Stam J. Anticoagulation for cerebral venous sinus thrombosis. *Cochrane Database Syst Rev. Aug 10 2011;CD002005.*