



Case images in ophthalmology

Bilateral cavernous sinus thrombosis with septic lung lesions resulting from a nasal abscess



Matthew J. Schear, Alexander Weiss, Rand Rodgers*

Northwell Health Department of Ophthalmology, Hofstra Northwell School of Medicine, 600 Northern Blvd, Suite 214, Great Neck, NY 11021, United States

ARTICLE INFO

Article history:

Received 31 December 2016

Received in revised form

16 April 2017

Accepted 19 June 2017

Available online 21 June 2017

Keywords:

Cavernous sinus thrombosis

Orbital infection

1. Case report

A febrile 38-year-old male presented with bilateral proptosis, motility dysfunction, and facial swelling (Fig. 1). The patient was recently treated for a nasal abscess and bacteremia, both positive for methicillin sensitive *Staphylococcus aureus* (MSSA). Visual acuity was 20/20 in each eye. Brain and orbit imaging revealed bilateral superior ophthalmic vein thromboses, cavernous sinus thromboses (CST), and a surgically inaccessible abscess in left temporalis muscle (Fig. 2). He was started on intravenous (IV) vancomycin 1 g every 12 h and IV heparin 3500 Units every 6 h to achieve PTT between 40 and 60, and on hospital day 13 bridged to therapeutic warfarin 3 mg - 5 mg for INR between 2 and 3. Although repeat cultures grew MSSA, given his history of nafcillin intolerance, he was continued on vancomycin. 48 h into admission his orbital process progressed with acute decreased vision to 20/100, elevated intraocular pressure and a central retinal artery occlusion left eye. Immediate lateral canthotomy and cantholysis was performed, and one dose of 12 mg IV dexamethasone was given. Despite orbital improvement, on hospital day five, the patient developed fever spikes and altered mental status, leading to

search for an alternative fever source. Chest imaging demonstrated septic cavitory lung lesions (Fig. 3). After 6 weeks of antibiotics, corticosteroids given every 3rd hospital day for four cycles, and continual anticoagulation, his severe orbital and nearly fatal disease process resolved. Vision remained 20/100 left eye and bilateral sixth nerve palsies persisted (Fig. 4).

2. Discussion

CST is rare, potentially life-threatening, and associated with significant long-term morbidity. Sinusitis, otitis, odontogenic or facial integument infections are often the primary cause.¹ *S aureus* is the most common pathogen. Other causes have been reported.² We instituted traditional therapy with IV antibiotics.³ Pulse doses of dexamethasone were administered resulting in improved orbital inflammation. Corticosteroid usage is controversial; therefore, the risks and benefits of use must be carefully considered. Anticoagulation use is also debatable. Some studies show a decrease in mortality with heparin use while other studies show no significant difference when used with antibiotic therapy.³



Fig. 1. Presentation photo.

* Corresponding author.

E-mail addresses: mschear1@gmail.com (M.J. Schear), aweiss4@northwell.edu (A. Weiss), randrogersmd@hotmail.com (R. Rodgers).



Fig. 2. A: computed tomography head revealing bilateral cavernous sinus thromboses (white arrows); B: superior ophthalmic vein thromboses (black arrows); C: tenting left globe (white arrows); D: magnetic resonance imaging orbit demonstrating abscess left temporalis muscle (black arrow).

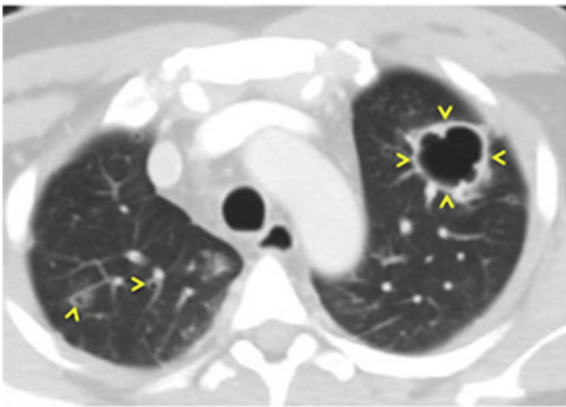


Fig. 3. Computed tomography chest demonstrating cavitary lung lesions (yellow arrowheads). (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)



Fig. 4. Discharge photo.

3. Conclusion

The present case identifies the morbidity associated with CST including central retinal artery occlusion and persistent motility dysfunction. Our case is unique as our patient developed septic pulmonary emboli with new onset fevers despite improvement in orbital inflammation. The ophthalmologist and primary physician should be aware of this potential life threatening association with CST.

Patient consent

Written consent to publish was obtained from the patient.

Funding

No funding provided.

Authorship

All authors attest that they meet the current ICMJE criteria for Authorship.

Conflicts of interest

The following authors have no financial disclosure: MJS, AW, RR.

Acknowledgements

None.

References

1. Grove WE. Septic and aseptic type of thrombosis of the cavernous sinus. *Arch Otolaryngol.* 1936;24:29–50.
2. Lim LH, Scawn RL, Whipple KM, et al. Spontaneous superior ophthalmic vein thrombosis: a rare entity with potentially devastating consequences. *Eye.* 2014;28:348–351.
3. Desai V, Green R. Cavernous sinus thrombosis: current therapy. *J Oral Maxillofac Surg.* 2012;70:2085–2091.