Clinical vignette: It was only a zit

Noopur Goyal
Charles Pizanis
Learning Issues

- Report a relatively rare condition of septic cavernous sinus thrombosis.
- Identify the need to consider cerebral venous infections associated with pimple popping, alongside awareness of altered mental status on exam.

Case

- A 45-year-old woman, with a medical history of IV drug use and chronic hepatitis C virus infection presented to our institution with complaints of painful right eye, periorbital swelling and inability to see after recently popping a pimple on her right cheek.
- On physical exam, the patient was afebrile and confused. Her right eye was swollen with purulent discharge, and she had nerve palsy of CN III-VII on the right side. A 4-mm indurated eschar was noted on the right cheek. With the exception of track marks and coarse breath sounds, the remainder of the exam was normal.
- Laboratory studies showed leukocytosis with neutrophilia, and an elevated ESR, CRP, and lactate. CT of the head without contrast showed a prominent cavernous sinus. MRI further indicated venriculitis, as well as concern for cavernous sinus thrombus (see Figure). Blood cultures grew out methicillin-resistant Staphylococcus aureus.
- During her hospital stay, she underwent canthotomy but deteriorated with subsequent development of septic shock and multi-organ failure. Five days after presentation, the patient passed away.

Discussion

- Cerebral vein thrombosis (CVT) incidence: <1.5 per 100,000 patients. Higher prevalence is noted in neonates, children, and young adults.
- In the case of septic cavernous sinus thrombosis, symptoms include: fever, headache, frontal and retro-orbital pain, and diplopia. CN III, IV, V1 and V2 all reside within the cavernous sinus. Therefore, ptosis, proptosis, extra-ocular dysmotility, hyperesthesia, and decreased corneal reflex may be noted.
- Most common bacterial organisms include Staphylococcus aureus (60-70%), Streptococcus pneumoniae, gram-negative bacilli, anaerobes.
- Most common fungal organisms include Aspergillus spp., Mucoraceae (e.g. Mucor).
- Complications of CVT: venous infarct, elevated intracranial pressure, cerebral herniation, hemorrhage.
- Treatment of CVT includes supportive care and anticoagulation IV thrombolytic agents or thrombectomy should be considered if no clinical improvement.
- Treatment of septic CVT includes antimicrobial therapy for appropriate infection.

Pathophysiology of Septic CVT

References