ORBITAL VACULITIS MIMICKING ORBITAL CELLULITIS (32)

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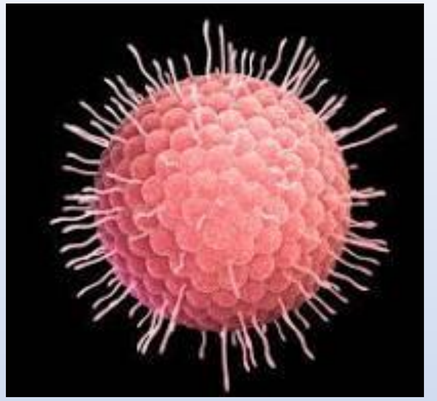


Introduction

- Chicken pox is a common childhood disease caused by the varicella zoster virus **(VZV)**.
- Although most cases of varicella infection resolve without any serious sequelae, systemic and ophthalmologic complications have been described.[1-4]
- To our knowledge this is the first case report of an orbital vasculitis following chicken pox infection in an immunocompetent patient that was misdiagnosed and treated initially as an orbital cellulitis.

Case Report

- JM was a 7 year old girl with a 6 day history of chicken pox infection.

  She presented to the paediatric department with a 2 day history of ***'swelling in the right eye'***.

- On examination, she was systemically unwell and pyrexial (40.3^0C). There was a right sided axial proptosis with conjunctival chemosis and marked generalized restriction of extraocular movements. There was no relative afferent pupillary defect (RAPD) and her optic discs looked healthy.

- **Investigations:** blood tests - C-reactive protein (CRP) 26mg/L (0-10), white cell count (WCC) 22.6 x 10^9/L (4.5-12.0) and absolute neutrophil count (neu) 18.5 x 10^9/L;

  Urgent CT scan was requested ***(fig 1).***

- A diagnosis of ***right bacterial orbital cellulitis*** was made and JM was treated with intravenous benzylpenicillin and flucloxacillin & Acyclovir-dose?.

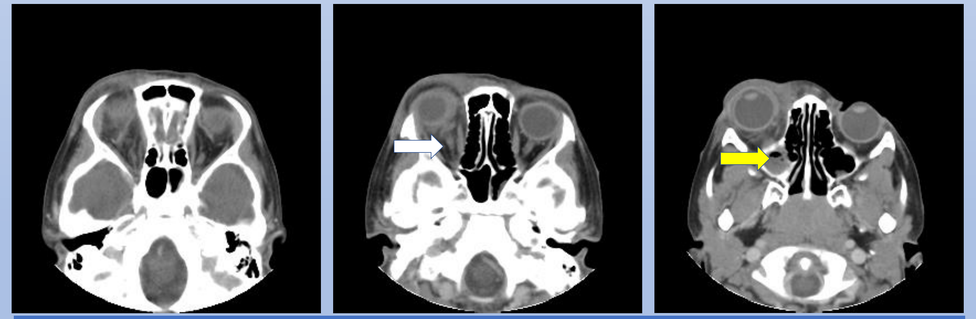


Figure 1. CT scan showing inflammatory changes within the retro-orbital fat and dilation of the right superior ophthalmic vein (white arrow). Extensive right maxillary sinus disease was also found (yellow arrow). The ethmoidal and frontal sinuses were clear

Case report (continued)

- **After 4 days of treatment** the orbital inflammation deteriorated (***fig 2***). Systemically however, JM was improving and this was supported by repeat blood tests - CRP 13.9mg/L, WCC 13.9 x 10^9/L and neu 8.4 x 10^9/L. She was then referred to the Adnexal Service. There was evidence of early optic neuropathy (RAPD +) and third cranial nerve dysfunction (pupillary mydriasis). The fundus was unremarkable.

Figure 3 shows the images of the repeat CT scan performed on that day.

•A **non infective orbital inflammation affecting mainly the right superior ophthalmic vein** was suspected and high dose oral prednisolone (2mg/kg) was commenced under the cover of systemic acyclovir and antibiotic.

•There was a rapid improvement in her symptoms and signs (***fig 4***). The antiviral and antibiotic were stopped 2 days later, and her steroid dosage was gradually tapered off over 2 months.

• On review 1 month after presentation, there was complete resolution of her orbital inflammation without any complications (***fig 5***).

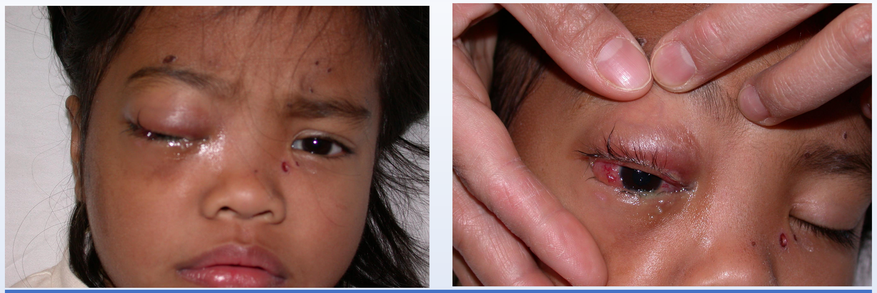


Figure 2. Deterioration of right orbit inflammation with downward displacement of globe, increasing proptosis and chemosis

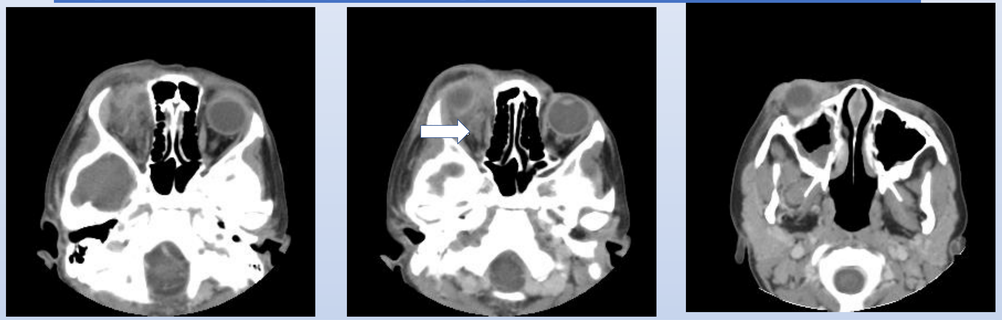


Figure 3. Repeat CT scan revealing a worsening of the right superior ophthalmic vein distension (arrow) and inflammatory changes surrounding the vein. The cavernous sinus was felt to be normal and the maxillary sinus disease had improved

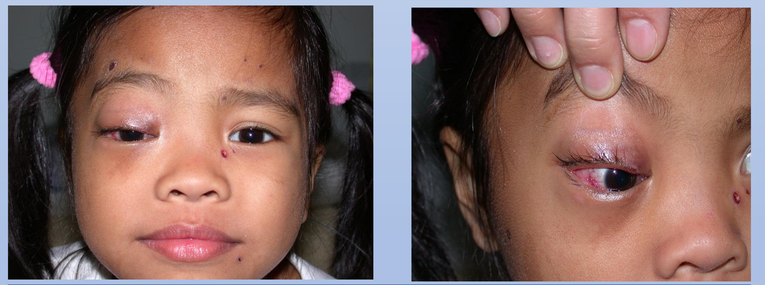


Figure 4. Second day of treatment with steroid

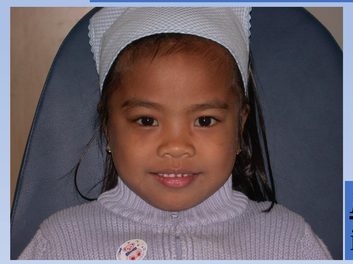


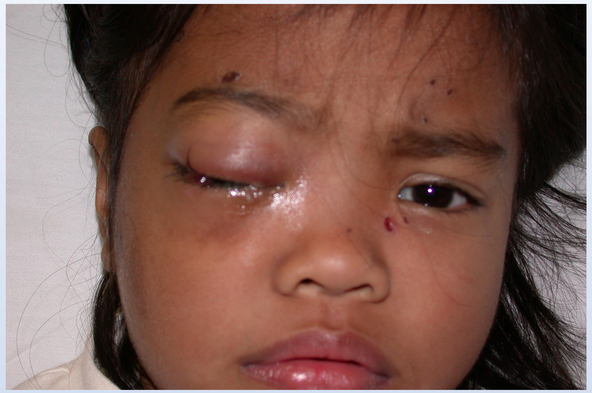
Figure 5. Complete resolution of orbital inflammation after 1 month of treatment

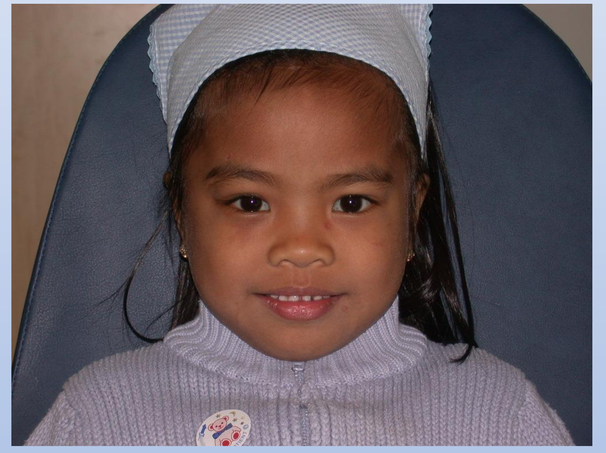
Discussion

This case illustrates the potential diagnostic pitfalls that can occur in the management of a ‘hot’ orbit with rapidly progressive proptosis. The initial clinical presentation was suggestive of a bacterial orbital cellulitis possibly secondary to sinusitis. However it is uncommon to develop an orbital bacterial infection without ethmoidal disease and the diagnosis was thrown into doubt when it did not respond to treatment despite improvement systemically and of the sinus disease.

The rapid response to systemic steroids indicated that it was a non infective orbital inflammatory disorder. The inflammatory changes on the CT scans (Fig 1 and 3) were centred around the superior ophthalmic vein which was grossly enlarged. This led us to believe that JM was suffering from orbital vasculitis that was most likely secondary to her chicken pox. Venography however was not performed which could have helped with confirmation of the diagnosis.

Complications such as vasculitis is known to occur with VZV infections.[3,4] This has been described in the central nervous system and retina but not in the orbit. We believe that this is the first reported case of suspected orbital vasculitis secondary to chicken pox infection in the English literature.





Conclusion

Chicken pox can cause an orbital vasculitis which may be misdiagnosed as orbital cellulitis.

A high index of suspiscion is needed to make the correct diagnosis.

References

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