

An unusual Cause of Periorbital Swelling in a Young Female

U Griffiths, D Kumar, M Trimble & S Prabhavalkar

Case Summary

A 16 year old female was admitted with a one week history of headache and swelling of both upper eyelids. Other symptoms included nausea, tiredness, dizziness and photophobia with no symptoms of skin rash, or neck stiffness. She had been previously very well with no significant past medical history.

On examination she was afebrile with stable vital observations. Bilateral periorbital swelling was noted (Figure 1). Eye movements and fundoscopy were normal. Systemic examination was unremarkable with no palpable lymphadenopathy.

Laboratory tests showed a haemoglobin of 114 g/L, white blood cell count of $12.4 \times 10^9/L$

predominantly lymphocytosis of $8.8 \times 10^9/L$ (normal range 1.3 to $3.5 \times 10^9/L$). CRP was 15.9 mg/L (normal range <5 mg/L) and liver enzymes were mildly elevated with AST of 43 (normal range 6–40 IU/L) and GGT of 38 IU/L (normal range 7–32 IU/L). Serum albumin was normal. A CT scan of head and orbits was undertaken to further investigate her headache and swelling (Figure 2).

Questions

1. What abnormality is seen on the orbital CT scan, shown in figure 2?
2. What are the likely causes of this abnormality in a young patient?

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Figure 1. Bilateral periorbital swelling.



Figure 2. CT scan Orbits (Coronal view).

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Key Learning Points

- Consider lacrimal gland hypertrophy (dacryoadenitis) in patients presenting with bilateral upper eyelid swelling.
- Epstein Barr virus (EBV) infection is a recognised cause of dacryoadenitis
- Patients with viral or inflammatory dacryoadenitis can be treated with corticosteroids if the swelling fails to settle with conservative management.

Answers

1. The CT scan shows bilateral hypertrophy of the lacrimal glands (Figure 3).
2. The important causes of bilateral upper eyelid swelling due to lacrimal gland hypertrophy in a young person include lymphoma, sarcoidosis, and infections, including Epstein Barr virus, mumps and cytomegalovirus.

Case outcome

A number of investigations were undertaken including atypical viral screen which showed raised EBV titres of 377,000 copies per ml. This confirmed the diagnosis of acute dacryoadenitis associated with infectious mononucleosis, which explained the lymphocytosis, elevated CRP and elevated liver enzymes. Her symptoms resolved completely in 2 weeks with conservative measures including simple analgesia, hydration and rest.

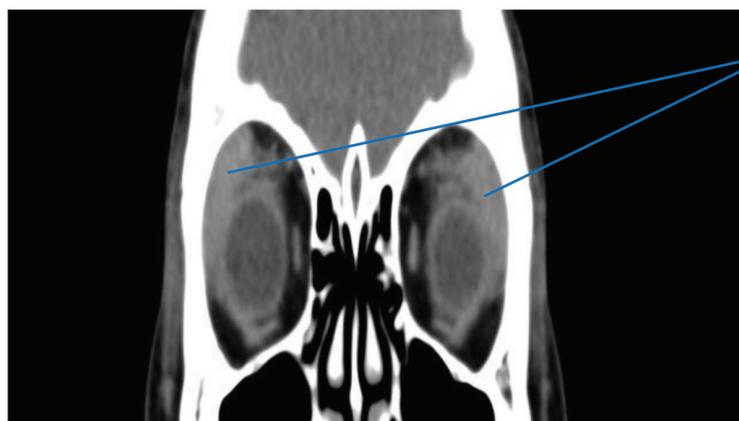
Discussion

Dacryoadenitis typically presents with periorbital swelling and erythema, pain on eye movement,

proptosis and motility defects.¹ Bilateral disease is rare in adults and thus a systemic cause must be sought¹ including autoimmune disorders such as sarcoidosis, Graves's disease and Granulomatosis-Polyangitis.² Acute bilateral dacryoadenitis usually has an infectious aetiology, mostly comprising of viral infections caused by mumps virus, cytomegalovirus, and Epstein Barr Virus (EBV).³ The exact pathophysiology of this is unknown although it is felt to be due to the ascension of the causal organism through the lacrimal ductules into the lacrimal gland.³

EBV infects over 90 percent of the world's population and is a member of the herpes virus family.⁴ About 25-70 percent of patients who become infected with Epstein Barr virus in their teens or early adult years go on to develop the infectious mononucleosis⁵ which is typically characterised by fever, lymphadenopathy and pharyngitis.⁴ Dacryoadenitis is a recognised complication of acute EBV infection.^{6,7} This presentation has been termed as "Hoagland-sign".⁸

Radiological may be useful to investigate the extent of the inflammation and hypertrophy within the lacrimal glands. This is normally via CT; however, ultrasound and MRI may also be used. There is some



Lacrimal gland hypertrophy

Figure 3. Annotated CT scan of orbits (Coronal View).

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evidence of the use of systemic corticosteroids in managing this condition although the majority of cases settle with conservative management.⁶

Conflict of interest

Nothing to declare

References

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