CASE REPORT

Alveolar ethmoidal rhabdomyosarcoma in a young adult male

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SUMMARY
We report a 22-year-old man who presented with a 3 week history of left-sided headache, orbital pain and epiphora progressing to diplopia. He was being treated by his general practitioner with a β-blocker and simple analgesia for possible diagnosis of cluster headaches. Initial examination revealed a reduction in visual acuity and poor abduction and upward gaze. Routine blood tests were normal. CT imaging was reported as a left ethmoid sinusitis with extension into a left orbit subperiosteal abscess. No pus was obtained on frontal sinus trephine and a biopsy was taken, which proved to be an alveolar-type rhabdomyosarcoma. The patient has completed a full course of chemoradiotherapy and has responded well to the treatment. His vision is back to normal and an MRI has shown complete regression of tumour.

BACKGROUND
Alveolar rhabdomyosarcoma (RMS) rarely presents in patients of this age. However, owing to its aggressive nature and tendency for local spread and distant metastases, it should be considered in the differential diagnosis of someone presenting with ophthalmic symptoms of this nature.

CASE PRESENTATION
A 22-year-old man presented with a 3 week history of worsening left-sided headache. Associated with this he had a left-sided epiphora and a left-orbital pain. He was referred by his general practitioner (GP) when he began to complain of diplopia. He was otherwise fit and well, having recently returned from travelling in Australia and south east Asia. He had been started on simple analgesia and a β-blocker by his GP for his symptoms but was on no other regular medications. He had no known drug allergies. He was a university graduate who did not smoke but drank alcohol occasionally. There was no family history of note.

Upon examination he was found to be stable and was not having fever. He had a left tender submandibular node. Visual acuity was 6/9 on the left side and there was a reduction in abduction and upward gaze on the left side.

INVESTIGATIONS
Blood tests including inflammatory markers were normal.

Initial CT imaging was reported as a left ethmoid sinusitis with extension into a left orbit subperiosteal abscess with probable intracranial extension through a bony defect in the floor of the anterior cranial fossa (figure 1).

Attempted frontal trephine revealed no pus. Infection remained the primary differential diagnosis at this point and his history of swimming in Thailand had raised the suspicion of infection from a rare bacteria.

Repeat CT imaging in 2 days following loss of colour vision and development of a proptosis was reported as soft-tissue density abnormality on the posteromedial aspect of the left orbital wall, which had increased slightly in size compared to previous imaging (figure 2).

Medial orbital exploration via a Lynch-Howarth incision was performed and a biopsy was taken.

Histopathological diagnosis of the biopsy obtained was RMS of the alveolar subtype.

CT of the chest/abdomen/pelvis showed no distant metastases.

TREATMENT
The patient was initially treated with intravenous antibiotics and pain relief. When it became clear that it was a mass and not an abscess he was also started on oral dexamethasone. Following histopathological diagnosis he was discussed at a multidisciplinary team meeting and a course of chemoradiotherapy was decided upon.

Nine cycles of IVAdo chemotherapy consisting of ifosfamide, vincristine, actinomycin D and doxorubicin was given as well as 30 fractions of radiotherapy.

OUTCOME AND FOLLOW-UP
MRI of the sinuses 10 months from diagnosis showed complete regression of tumour (figure 3).

Figure 1 Coronal view—initial CT of the brain.
Rhabdomyosarcoma (RMS) is a rare malignant tumour in young adults. It has a tendency for local spread and distant metastases. An MRI is preferred to a CT for diagnostic and follow-up investigation. Ethmoidal RMS should be considered in the differential diagnosis of orbital pathologies.

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REFERENCES