Case report

A 16-year-old male received a blow to the left side of his face playing rugby. Initially he complained of left sided facial pain but 2 days later noticed dropping of the left side of his face. By the next day he developed similar symptoms on the right side and was unable to close both his eyes. There had been no loss of consciousness and the patient later recalled landing awkwardly on the right side of his face. He also reported an altered sensation to taste but no hyperacusis. On examination the patient was alert, orientated and obeying commands. There was a bilateral lower motor neurone lesion of the facial nerve distal to the stapedius muscle (Fig. 1a and b). Other cranial nerves and peripheral nerves were intact and systemic examination was unremarkable.

Haematology, biochemistry, immunology, virology and lumbar puncture for systemic causes of facial palsy were normal. Plain skull X-rays showed no obvious fracture of the skull. High resolution CT head showed no basal skull or temporal fractures. MRI head showed normal intracranial appearances of the facial nerve and brainstem. EMG of the facial nerves showed incomplete bilateral facial palsy distal to the nerve to stapedius. The diagnosis of BFP secondary to blunt trauma was made. The patient was started on prednisolone 60 mg/day in a reducing dose and the symptoms had completely resolved at 3 months.

Discussion

BFP is an extremely rare clinical entity. Trauma accounts for only a small percentage of cases and is associated with skull base and temporal fractures. However, diagnosis of traumatic BFP should essentially follow the same principles as that of unilateral facial palsy. A detailed history and careful examination are imperative. The time of onset of facial paralysis is important in determining the
type and site of lesion. Any hearing loss, dizziness, CSF otorrhea or rhinorrhea and TMJ dysfunction are significant. Assessment of the facial nerve should be complemented by testing hearing, the stapedius reflex, taste and Schirmer’s tear test. Carotid dissection can present with cranial nerve deficit so assessment of all the cranial nerves is essential as are signs of skull base fracture, which include haemotympanum, Battle’s sign and CSF leaks.2,6,10

In the context of trauma laboratory tests are of little value. Similarly plain skull X-rays offer little information and where there is suspicion of a fracture further imaging is mandatory. High resolution CT is the investigation of choice because it provides accurate localisation of fractures and post-traumatic state of the middle ear and facial nerve canal.7 MRI of the brain is not routinely performed for facial paralysis. However, gadolinium enhanced MRI is accurate in predicting the site of facial nerve injury.4 Electromyography should be a part of the full clinical assessment and is a reliable prognostic indicator. However, assessment of the facial nerve in BFP may be difficult because in a unilateral facial palsy the extent of nerve degeneration is determined by comparing the paralysed side with the normal side. Nevertheless it is still an important test but is useful only several days after trauma to the nerve.1,3,6

While most agree that traumatic facial palsy can be closely observed the management remains controversial. The majority of studies performed are for idiopathic or unilateral facial palsies and these suggest steroids are beneficial. Our patient with BFP was managed using this approach and he was symptom free by 3 months. Where patients are unable to close their eyes eye care is essential to prevent keratitis, corneal breakdown and blindness. Treatments include administration of artificial tears and injection of botulinum toxin to paralyse the orbicularis oculi muscle, thereby closing the eye. However, for obvious reasons this option is only applicable for unilateral facial palsy. Surgery is only required when there is penetrating trauma to the temporal bone or transection of the facial nerve. Surgical decompression of the facial nerve after blunt trauma is controversial as the majority of these cases resolve spontaneously.9,8

In summary we report what is to the best of our knowledge the first case of traumatic BFP with normal radiological imaging. BFP is an extremely rare clinical entity but tends to resolve completely with a prolonged course of steroids. However, in the context of trauma it is imperative that more serious diagnoses are excluded before patients can be safe for discharge.

References
4. Haberkamp TJ, Harvey SA, Daniels DL. The use of gadolinium enhanced magnetic resonance imaging to determine lesion site in traumatic facial paralysis. Laryngoscope 1990;100:1294–300.