

## Extensive skull base fractures with multiple cranial nerve palsies

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### Extensive skull base fractures with multiple cranial nerve palsies

Fractures of the base of skull have been reported in up to 24% of all head injuries, involving the anterior, middle or posterior cranial fossae<sup>1</sup>. These fractures frequently traverse foraminae containing neural or vascular structures with resultant transient or permanent deficits. Clival fractures are much less common, occurring in only 0.5% of patients<sup>2</sup>. The olfactory nerve is most commonly involved, but injuries to all cranial nerves individually and in combination have been reported, varying with the site and extent of the fracture<sup>1</sup>.

We report a patient with immediate traumatic palsy of the trigeminal, abducens (Fig 1), facial (Fig 2), vestibulo-cochlear, glossopharyngeal, vagus and hypoglossal (Fig 3) nerves on the right side following a road traffic accident in which he was knocked down by a tractor. Computerised tomography revealed extensive fractures of all three cranial fossae that correlated with his neurological deficits: the sphenoid was fractured on the right side with blood in both the ethmoids (Fig 4), the basioccipital fracture was in the region of the hypoglossal canal (Fig 5), the right jugular foramen was extensively disrupted (Fig 6), both petrous temporal bones were fractured (Fig 7), and fractures were seen at



Fig 1: Clinical picture showing inability to abduct the right eye

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the right petrous apex (Fig 7) and foramen ovale (Fig 8).

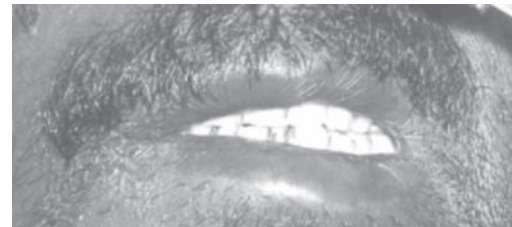


Fig 2: Clinical picture showing deviation of angle of the mouth to the left

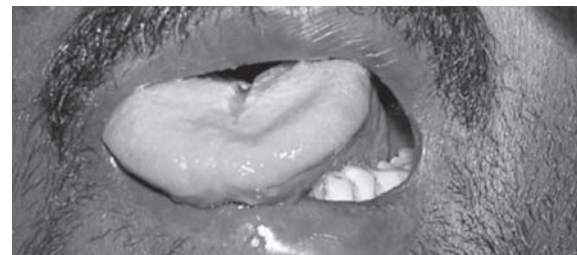


Fig 3: Clinical picture showing deviation of tongue to the right.

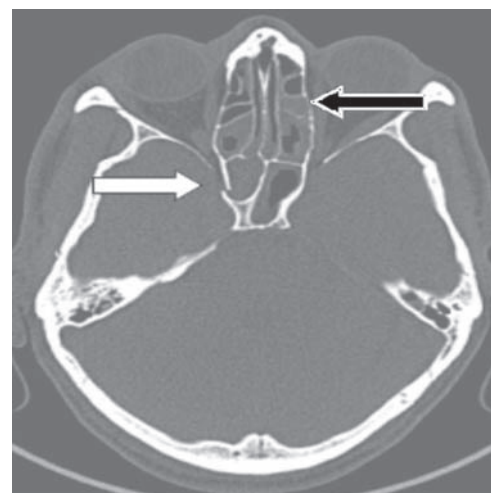


Fig 4: CT scan showing fracture of sphenoid (block arrow) and blood in ethmoid sinuses (empty arrow)

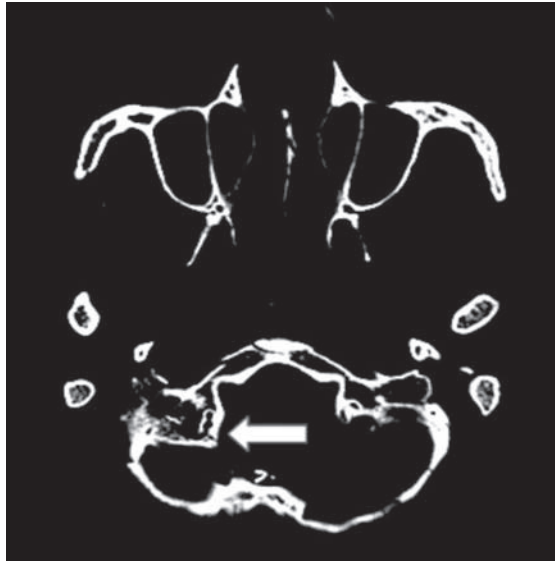


Fig 5: CT scan showing fracture of the basiocciput in the region of the right hypoglossal canal (arrow)

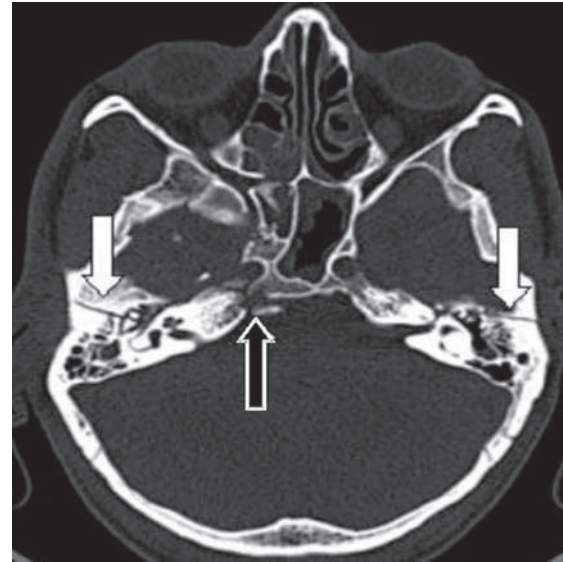


Fig 7: CT scan showing fractures at the right petrous apex (empty arrow) and of both petrous bones (block arrows)

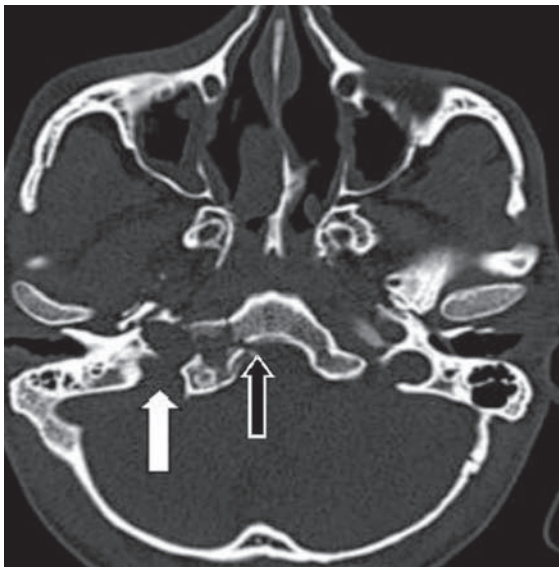


Fig 6: CT scan showing extensive disruption of the right jugular foramen (block arrow) and fracture of the clivus (empty arrow)

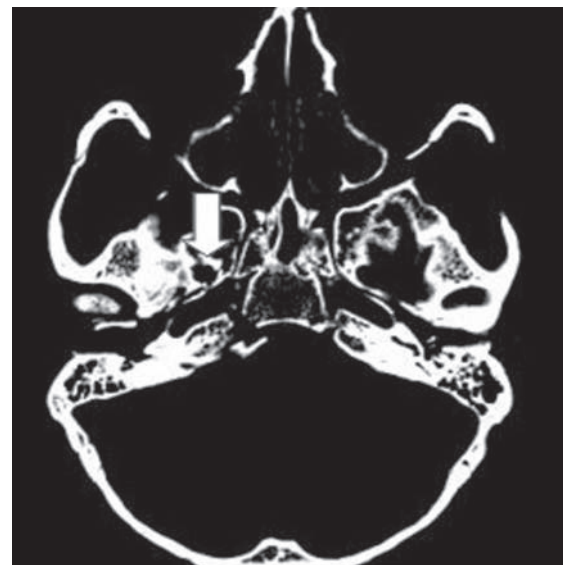


Fig 8: CT scan showing fracture involving the right foramen ovale (block arrow)

To our knowledge such an extensive traumatic cranial neuropathy with radiological corroboration has not been reported. The patient was managed conservatively, and was discharged on nasogastric feeds after a tarsorrhaphy. On follow up he was able to eat normally and had some recovery of facial sensation, but no other changes in his neurological status.

## REFERENCES

1. Tasdemiroglu E, Patchell RA. Classification and management of skull base fractures. *Neurosurgery Quarterly* 2002;12: 42-62.
2. Joslyn JN, Mirvis SE, Markowitz B. Complex fractures of the clivus: diagnosis with CT and clinical outcome in 11 patients. *Radiology* 1988;166:817-21.