Ocular bobbing with extra-axial haematoma of posterior fossa

PASQUALE F. FINELLI AND WILLIAM J. McENTEE

From the Neurology Service, Veterans Administration Hospital, and the Subsection of Neurology, Brown University, Division of Biological and Medical Sciences, Providence, Rhode Island, USA

SUMMARY A patient with a subarachnoid haematoma anterior to the brain stem demonstrated ‘typical’ ocular bobbing. The absence of CNS parenchymal involvement is distinct from previously described posterior fossa lesions associated with this particular eye movement disorder.

Since Fisher’s (1961, 1964) original descriptions of the phenomenon of ocular bobbing, subsequent reports (Daroff and Waldman, 1965; Hameroff et al., 1969; Nelson and Johnston, 1970; Susac et al., 1970) have confirmed his original observations, and have led to a classification of this ocular sign into three groups: typical, atypical, and monocular bobbing (Susac et al., 1970). Typical ocular bobbing is usually associated with intrapontine disease, although it has also been observed in cases of cerebellar haemorrhage with secondary pontine compression.

This report is concerned with typical ocular bobbing in a patient who, at necropsy, was found to have an extra-axial haematoma anterior to the brain stem. The parenchyma of the brain stem and cerebellum were spared.

Case report

A 73 year old white male was in his usual state of health until the evening of admission when he suddenly slumped forward unresponsive in his chair. Significant past history included arteriosclerotic heart disease and hypertension. Physical examination on the evening of admission revealed an elderly white male who was lethargic but responded to pain and answered simple questions appropriately. There were no signs of trauma about the head. Blood pressure on admission was 180/110 mmHg, pulse was 60 per minute and regular, respirations were rhythmical at 14 per minute, and the patient was afebrile. Cardiac exam revealed a grade III (out of VI) systolic murmur along the left sternal border. Neurological examina-

Address for reprint requests: Dr P. F. Finelli, VA Hospital, Davis Park, Providence, Rhode Island 02908, USA.

Accepted 10 November 1976
Ocular bobbing with extra-axial haematoma of posterior fossa

horizontally by either doll's eye manoeuvres or ice water caloric testing. On the third day in hospital the patient became febrile. This was thought to be secondary to aspiration pneumonia. Increasing muscular rigidity with decerebrate posturing followed. Angiography of the posterior fossa was performed via a right brachial injection, and no abnormalities were observed. The ocular bobbing persisted and the patient's condition remained grave without improvement. The patient died on his eighth day in hospital.

Neuropathology

External examination of the brain showed an extensive subarachnoid haematoma covering the ventral aspect of the brain stem (Fig. 1). The vertebral and basilar arteries were entirely encased within the haematoma. The vessels were dissected and carefully examined for the presence of a ruptured berry aneurysm but none was found.

Multiple sections of the brain revealed the CNS parenchyma to be intact and showed no source of intraparenchymal bleeding. The fourth ventricle, which was not significantly enlarged or distorted, contained a small amount of blood. Histological sections showed that the midbrain, pons, and medulla were intact (Fig. 2). The blood vessels showed minimal atherosclerotic changes. A localised collection of thin-walled blood vessels, both arteries and veins, was identified within the subarachnoid space between the pyramids of the medulla (Fig. 3). This was thought to represent a small arteriovenous malformation that may have been the source of bleeding in this patient.

Discussion

Bosch et al (1975) emphasised the nonlocalising value of ocular bobbing in an effort to dispel the notion put forward by Nelson and Johnston (1970) that typical ocular bobbing should not discourage the search for a treatable lesion. Our patient was studied to exclude...
the possibility of a cerebellar haemorrhage but the posterior fossa angiogram was completely normal.

One may speculate that the ocular bobbing in this case resulted from extrinsic pressure on the pons. However, the haematoma extended over almost the entire ventral surface of the brain stem. The rarity of a subarachnoid haematoma anterior to the brain stem may in part explain why this particular eye movement disorder has not been described previously with a lesion in this area.

All the cases of typical ocular bobbing reported to date have occurred in patients with either intrinsic pontine disease or cerebellar haemorrhage. To the best of our knowledge this is the only instance of typical ocular bobbing occurring with extraparenchymal disease of the brain stem or cerebellum.

References


Fig. 3 Cross-section of medulla (top) with enlargement of area between the pyramids (bottom) showing arteriovenous malformation.
Ocular bobbing with extra-axial haematoma of posterior fossa.

P F Finelli and W J McEntee

J Neurol Neurosurg Psychiatry 1977 40: 386-388
doi: 10.1136/jnnp.40.4.386

Updated information and services can be found at:
http://jnnp.bmj.com/content/40/4/386

These include:

Email alerting service

Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/