BILATERAL HORIZONTAL GAZE PALSY DUE TO PONTINE HEMORRHAGE

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SUMMARY :

A case of bilateral gaze paralysis is presented in this paper. Vertical gaze was intact and there were no findings showing long tract lesion or loss of consciousness in the patient. CT scanning showed a hematoma in the median pontine tegmentum.

KEY WORDS :

Horizontal gaze paralysis, pontine tegmentum, pontine hematoma.

INTRODUCTION

The pontine paramedian reticular formation is postulated to be a horizontal gaze center. To our knowledge, cases of isolated bilateral horizontal gaze palsy in the absence of other brainstem findings is very rare in the literature. The purpose of this paper is to present a case with bilateral horizontal gaze paralysis due to a hematoma in the median pontine tegmentum.

CASE REPORT

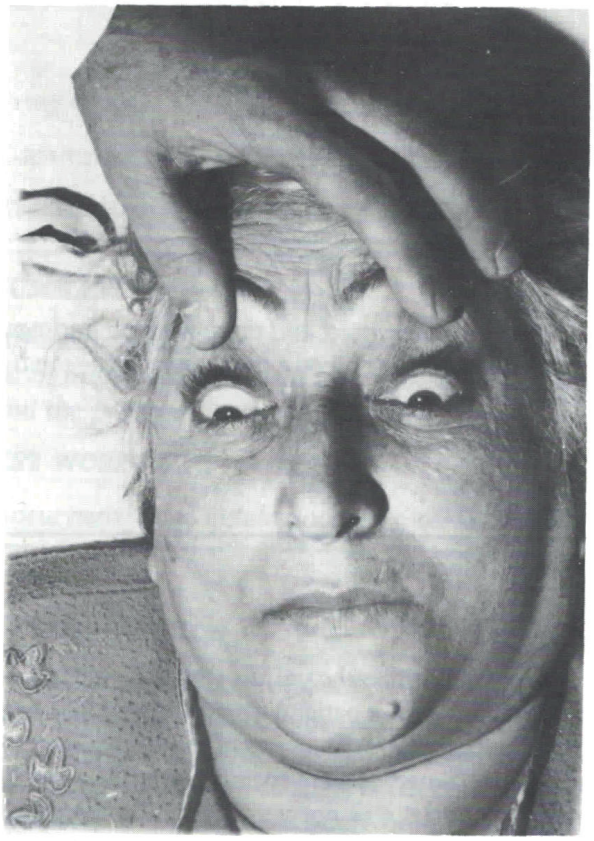
A 57-year-old woman admitted to our hospital because of nausea vomiting and vertigo. She also noticed unsteadiness and intermittent double vision. At examination on admission the patient was slightly dysarthric and tended to fall backwards. Voluntary horizontal saccades and pursuit eye movements were competely absent. Vertical gaze was full (Fig.1a, b, c, d). Examination of the nervous system gave normal findings apart from unsteady gait. Blood pressure was 200/130 mm Hg. Physical examination revealed no abnormalities. Skull X-rays were normal. A chest film showed some left ventricular enlargement and aortic elongation. Analysis of blood and urine disclosed no abnormalities. Horizontal vestibulo-ocular reflexes on caloric stimulation were absent. CT scanning showed a hematoma in the median pontine tegmentum (Figure 2). The patient was put on steroid and antihypertensive therapy. She was discharged a week after admission without improvement.

DISCUSSION

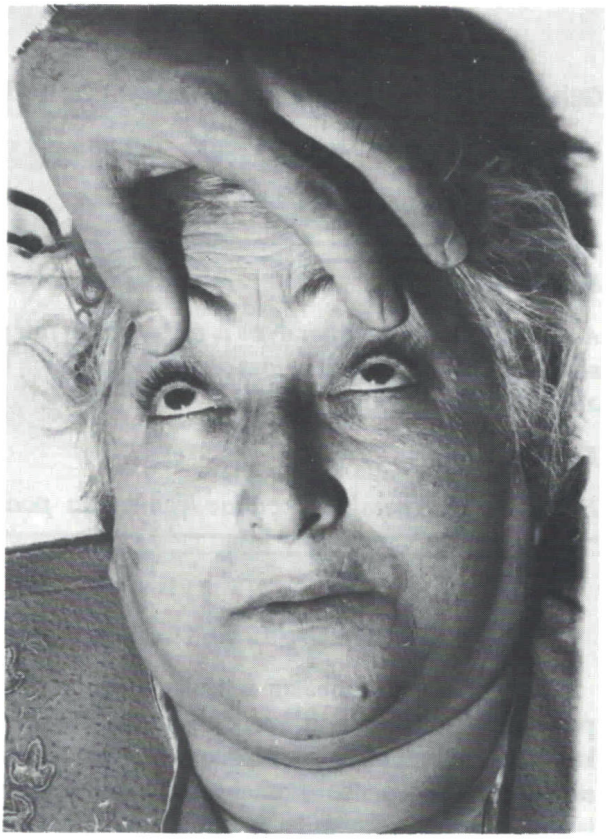
Bilateral horizontal paralysis with full vertical gaze was found in our patient. There were no findings showing long tract lesion or loss of consciousness. Since both facial nerves were spared, the lesion of both abducens nuclei was not very likely. On the other hand the absence of horizontal vestibulo-ocular reflexes on caloric stimulation can be explained by damage to the caudal paramedian pontine reticular formation (PPRF). Computerized tomographic scanning showed hemorrhage located in the median pontine tegmentum.

Bilateral horizontol gaze palsy results from bilateral involvement of the PPRF or from bilateral hemispheric or upper brainstem lesions affecting the descending horizontal gaze pathways. Lesions at the level of the abducens nuclei cause loss of oculocephalic and caloric stimulated eye movements whereas in upper brainstem lesions these reflexes are well preserved (3).

Isolated bilateral horizontal gaze palsies in the absence of other brainstem findings are very rare in the literature. A case with bilateral gaze paralysis due to pontine hemorrhage was presented previously (4). Two cases with the same findings due to pontine metastatic tumour (8) and two other similar cases with pontine glioma (2) were reported. The other cause of isolated bilateral horizontal gaze paralysis is multiple sclerosis. To our knowledge only a few cases with lateral gaze palys due to MS have been reported in the literature (1, 3).



a



b

c

d

Fig.1 : a-b-c-d Bilateral horizontal gaze palsy with full vertical gaze.

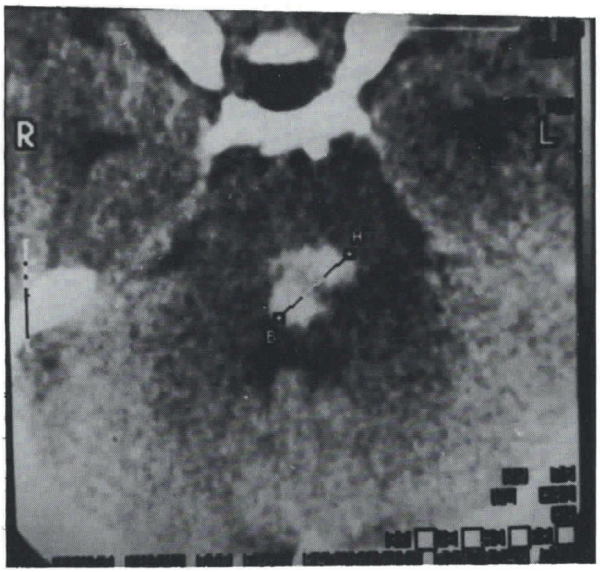


Fig.2 : CT scanning showing pontine high density lesion rostral to the fourth ventricle.

Absence of horizontal saccades with full vertical saccades in our patient supports the view of the independent genesis of horizontal and vertical saccades in man. In monkeys, bilateral lesions of the caudal PPRF result in paralysis of horizontal and vertical saccades whereas lesions of the rostral PPRF produce paralysis of horizontal saccades only (5). The picture is less clear in humans. Although a few clinical reports have noted impaired voluntary vertical gaze with pontine lesions (6) others have found normal vertical gaze despite large lesions involving the caudal PPRF (7, 8).

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REFERENCES

1. Abad VC, Wolintz A: Bilateral horizontal gaze palsy. Ann Ophthalmol 14 (II): 1046-1048, 1982
2. Baloh RW, Furman J, Yee RD: Eye movements in patients with absent voluntary horizontal gaze. Ann Neurol 17:283-286, 1985
3. Joseph R, Pullicino P, Goldberg CD, Rose FC: Bilateral pontine gaze palsy. Nuclear magnetic Resonance findings in presumed multiple sclerosis. Arch Neurol 42:93-94, 1985
4. Koehler PJ, Watendorff AR, Goor C, Hekster REM, et al: Bilateral horizontal gaze paralysis due to pontine hemorrhage. Clin Neurol Nerosurg 88 (2):121-125, 1986
5. Lang W, Henn V, Hepp K: Gaze palsies after selective pontine lesions in monkeys. In: Roucoux A, Crommelinck M (Eds). Physiological and Pathological aspects of eye movements. The Hague: Junk. 1982 pp 209-218
6. Larmande P, Henin D, Jan M, et al: Abnormal vertical eye movements in the locked-in syndrome. Ann Neurol 11:100-102, 1982
7. Nordgren RE, Maskesbery WR, Fukuda K, Reeves AG: Seven cases of cerebromedullospinal disconnection the "locked-in syndrome". Heurology (Minneap) 21:1140-1148, 1971
8. Pierrot-Deseilligy C, Goasguen J, Chain F, et al: Pontine metastasis with dissociated bilateral horizontal gaze paralysis. J Neurol Neurosurg Psychiatr 47:159-164, 1984