International Journal of Advances in Medicine
Stephen AM et al. Int J Adv Med. 2022 Feb;9(2):176-178
http://www.ijmedicine.com
pISSN 2349-3925 | eISSN 2349-3933
DOI: https://dx.doi.org/10.18203/2349-3933.ijam20220131

Case Report

Silent killer presenting as isolated oculomotor nerve palsy

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Received: 29 November 2021
Accepted: 29 December 2021

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ABSTRACT

Head trauma can result trivial to life threatening manifestations to a person. Subdural hemotoma is characterised by accumulation of blood in subdural space, in most cases it is a serious condition and requires prompt diagnosis and treatment for the same to provide good outcome. Large collection, mid line shift, brain herniation associated with subdural hematoma is associated with increased morbidity and mortality. However, if the collection is minimal or is places like tentorium cerebelli may not have the typical presentation and if it's picked up using the subtle signs the devastating sequelae can be prevented. We report a 19 years old male with head trauma presenting with features of right-side isolated oculomotor nerve palsy who eventually found to have tentorial subdural hemotoma in imaging which has been intervened and complications were avoided.

Keywords: Occulomotor nerve palsy, Subdural hematoma, Tentorium, Head trauma, Cerebral herniation

INTRODUCTION

Head trauma in many cases can causes severe morbidity and mortality, acute subdural hematoma is one of the potential factors associated with head trauma. About 40% to 60% of these patients who requires surgery for subdural hematoma may not have favourable outcome.[1] Patients with subdural hematoma who has been diagnosed and treated early have better outcome compared to cases which are delayed and so early diagnosis and effective treatment is required. Certain signs associated with head trauma should be carefully looked for especially associated cranial nerve palsy. Third, fourth and sixth cranial nerve are related to tentorial edge and can result in paresis or palsy in cases with tentorial herniation.[2] Occulomotor nerve nucleus lies at the level of mid brain and this nerve supplies all ocular muscle except lateral rectus and superior oblique. The etiology for third nerve palsy is varied and the common cause is diabetes. Pupil involving third nerve palsy is often due to compressive lesion in brain and exceptional cases of pupil sparing compressive third nerve palsy also has been reported rarely. Most cases of compressive third nerve palsy may not be isolated and often associated with other cranial nerve involvement and systemic manifestations. We report a young boy who had head trauma presented with right eye ball deviated down and out, complete ptosis, restriction of movement except abduction and pupils were reacting normally. Computed tomography of brain showed presence of tentorial subdural hematoma which worsened on serial monitoring and so patient taken up for decompression. On follow-up over a period of 3 months features of third nerve plays resolved and patient did not develop any systemic morbidity. Head trauma patients with acute third nerve palsy warrants urgent imaging and should be carefully evaluated.

CASE REPORT

A 19 years old boy presented four hours following a road traffic accident and head trauma with complaints of drooping of right upper eyelid following trauma and diplopia when eyelids are manually opened. No history of

any loss of consciousness, seizures, vomiting and ear, nose bleed. Complete ophthalmological examination done for the patient and found to have both eyes Snellen's visual acuity of 6/6. Right eyeball was deviated down and out, complete ptosis also was noted. Restriction of right eye elevation, depression, adduction noted and only abduction was intact (Figure 1). Left eye movements were normal. Both eye pupils were equally reacting to light and brisk. Dilated fundus examination showed normal optic disc and retina. No focal neurological signs have been noted during presentation. Computed tomography of brain showed presence of tentorial hematoma (Figure 2) and the patient was kept on close observation. Intravenous mannitol and oral phenytoin have been given and patient complained of headache 4 hours after initial presentation. Repeat imaging carried out and found to have worsening of tentorial hemotoma with impending herniation and so taken up for decompression with burr hole. Patient improved post operatively and on close follow-up no significant neurological signs noted and signs of third nerve palsy gradually resolved over three months.

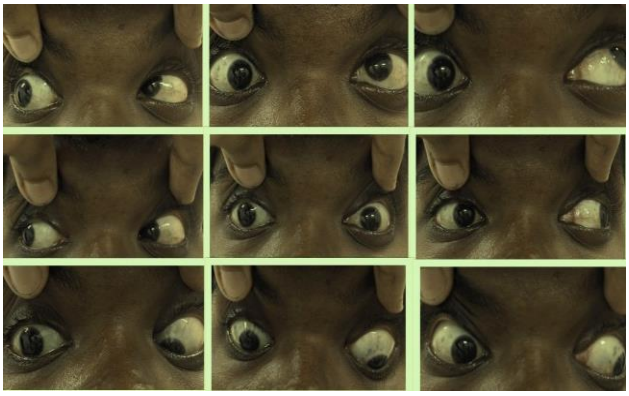

Figure 1: Clinical photograph of the patient of restriction of right eye movements in all gazes except intact levo-version (normal lateral rectus action in right eye).

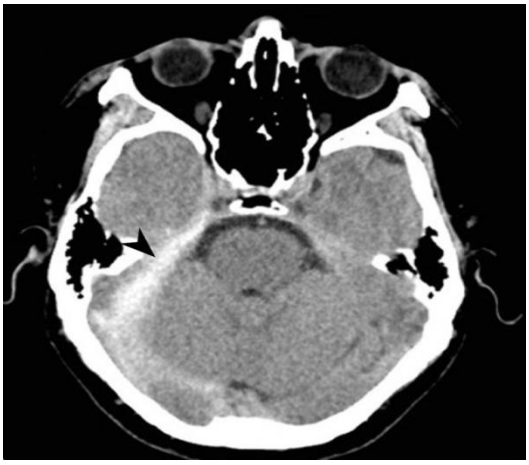

Figure 2: Axial section of computed tomography image of the patient of presence of tentorial sub-dural hematoma (marked by black pointed arrow).

DISCUSSION

Occulomotor nerve palsy in patients following head trauma suggest compressive etiology and most cases will be pupil involving. Pupillomotor fibres in oculomotor nerve runs at the periphery and so get damaged in compressive lesion whereas metabolic etiologies affect the vasa-nervorum is often pupil sparing, but this won't hold true in all cases.[3] Presence of cranial nerve palsies in head trauma gives idea about the severity and possible site of damage. The cranial nerve can get damaged due to hemorrhage at the level of brainstem or associated fractures. Rarely raised intracranial tension and/or local compression of nerve due to hematoma can result in third nerve palsy. Patients with acute subdural hemotoma often present with associated neurological signs and poor sensorium due to compression of cerebral hemisphere. We report a rare presentation of isolated oculomotor nerve palsy in a young patient following trauma, which had no associated neurological signs and was having good sensorium. Very few cases of ruptured cerebral artery aneurysms presenting as pupil involving isolated third nerve palsy has been reported and to our knowledge pupil sparing third nerve palsy in acute subdural hematoma with impending herniation is very rare.[4,5]

Advancement in neuro-imaging helps to provide detailed evaluation and exact location of pathology. This patient underwent computed tomography imaging and showed presence of tentorial subdural hematoma which possible explains the presence of isolated oculomotor nerve palsy and pupil sparing nature is possible due to anatomical variation. Rare case of left temporal extradural hematoma presenting as isolated pupil involving third nerve palsy has been reported and in general most cases with massive post traumatic cerebral bleed have poor prognosis.[6]

In our report the patient had altered sensorium after four hours of admission and repeat computed tomography imaging showed worsening of subdural hematoma which warranted emergency cranial decompression using burr holes. Patient was doing well in post operative period and on follow-up after 3-month signs of resolution in the form of reduction in ptosis, improvement of extraocular movements has been noted and no other neurological sequelae.

CONCLUSION

Head trauma cases presenting with nerve palsies should be carefully watched for and all cases of post traumatic third nerve palsy need not be pupil involving. Urgent neuroimaging is performed and expert opinion should be obtained. Prompt diagnosis and timely intervention in these cases can be lifesaving.

ACKNOWLEDGEMENTS

The authors wish to acknowledge the patient for complete co-operation.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Stephen AM, Jayasri P, Harigaravelu PJ, Baranitharan. Silent killer presenting as isolated oculomotor nerve palsy. Int J Adv Med 2022;9:176-8.