



ISOLATED TRAUMATIC 3RD NERVE PALSY FOLLOWING MASSIVE SUBDURAL HAEMORRHAGE : A CLINICAL RARITY

Ophthalmology

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ABSTRACT

Isolated oculomotor nerve palsy (ONP) following closed head trauma is a distinct rarity . Acute subdural hematoma(SDH) is a life threatening condition and signs are needed to be identified as early as possible to save the life of patient and prevent lifelong damage .The authors describe this condition in a 47 year old female who met with Road Traffic Accident . She presented with loss of consciousness , headache and ptosis of right eye . On examination sluggish pupillary reaction and restriction of extraocular movement was seen . CT showed massive SDH . Emergency craniotomy was done and within 3 days postoperatively ,ptosis improved but patient started complaining of diplopia . Patient was followed up for two and half months .There was almost complete correction of ptosis and diplopia which is very rare in such cases .

KEYWORDS

INTRODUCTION

Acute SDH following severe head injury in road traffic accidents is potentially life-threatening , mortality -40% to 65% (1,2,3).The oculomotor nerve may be damaged either due to direct injury or indirectly due to compression by expanding hematoma(4) .Usually occurs in setting of uncal herniation and constitutes a neurosurgical emergency. A fronto- parietal hematoma (SDH) leading to isolated unilateral third nerve palsy with no other neurological impairment is a rare presentation. Associated headache, vomiting, ataxia and deterioration of consciousness may occur as a sign of worsened ICP and cerebral herniation. Full recovery to complete normality is unusual in such cases.(5)

CASE REPORT

A 47 yr old female patient attended emergency department following road traffic accident with loss of consciousness for 20 minutes with no past medical history. On regaining consciousness she complained of severe headache, nausea and inability to open her right eye. Next day she was able to open her right eye but complained of diplopia. On examination tests for vision and intraocular pressure were within normal ranges for both eyes .There was complete ptosis, palpebral aperture was closed in the right eye with anisocoria and mid dilated sluggish reacting pupil .(figure 1) On extraocular movement examination ,the right eye was in slight down and out position with restriction of all extraocular movements except dextroversion and dextrodepression.(figure 2) . Further physical and neurological examinations were normal .Computed Tomography (CT) brain revealed a massive SDH(10 mm) in fronto- parietal region and mild uncal herniation to left side and compression of ipsilateral oculomotor nerve. (figure 3) Emergency craniotomy was done in OT and patient was kept in intensive care unit and monitored . Next day the patient recovered with GCS 15/15.

Patient was followed up after 2 weeks ,her ptosis improved , diplopia persisted but now pupil was reactive and restriction of movements were reduced.(figure 4) The right eye was slightly in down and out gaze . Again a NECT was done and extradural air foci collection was found in craniotomy region(figure 5). Patient was again followed up after one and half months , her ptosis almost completely improved and diplopia was absent .(figure 6) Repeated NECT showed reduction of air foci .(figure 7)

DISCUSSION

Third, fourth, and sixth nerve palsies are commonly used as indicators of neurological injury. There can be direct or indirect injuries to cranial nerves . Indirect lesions may result in Oculomotor nerve palsy (ONP)by causing uncal herniation, vascular damage, brain stem central

lesions, stretching or compression on CNIII (6). In 1953, Clark and Goody survey showed 2 cases. A large SDH was discovered only on postmortem in the first patient(7). Second patient was initially diagnosed with sudden dilation of an aneurysm of a basal vessel. Upon deterioration in status, angiography performed at 2 weeks and indicated subdural collection of blood (7). In both cases, subdural bleeding had not been suspected due to the isolated involvement of CNIII. So Neuroimaging plays an important role in such cases. In some cases of ONP, there may be "pupil sparing" .(8,9) Pupil-sparing effects were not observed in this patient. Five patients have previously been described with lateralized, isolated ONP without pupillary sparing caused by bilateral chronic SDH (CSDH).(10) Pre-existing defects may also predispose isolated ONP following even mild trauma, with one patient reported as having a calcified posterior petroclinoid ligament that impinged upon CNIII with impact to the head.(11) Epidural hematoma exhibiting complete ONP but no other neurological symptoms after a fall, has been reported in a young adolescent patient.(12, 13) .The differential diagnosis should include acute SDH and other types of intracranial hemorrhage, and we recommend that patients to undergo CT/CT angiography/MRI to rule out or confirm these possibilities and to determine appropriate interventions.

CONCLUSION

SDH and other intracranial bleeds can be life-threatening or cause significant, long-lasting functional deficits if left unrecognized. This unusual case of acute traumatic SDH causing isolated ONP suggests the need for increased clinician awareness of the different ways that cerebrovascular lesions may affect cranial nerves and manifest in patients. CT/CT angiography neuroimaging is recommended in all patients who present with isolated ONP in order to ensure accurate diagnosis and timely intervention.

FIGURES



Figure 1: complete ptosis, palpebral aperture was closed in the right eye



Figure 2: On extraocular movement examination, the right eye was in slight down and out position with restriction of all extraocular movements except dextroversion and dextrodepression.

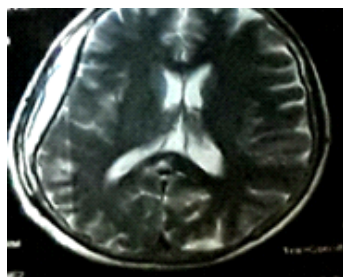


Figure 3: Computed Tomography (CT) brain revealed a massive SDH(10 mm) in fronto- parietal region



Figure 4: follow up after 2 weeks , ptosis improved , restriction of movements were reduced.

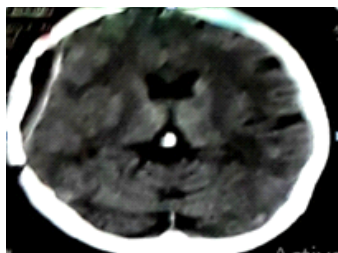


Figure 5 :NECT was done after 2 weeks and extracranial air foci collection was found in craniotomy region.



Figure 6: follow up after 1 ½ months, her ptosis almost completely improved and diplopia was absent.

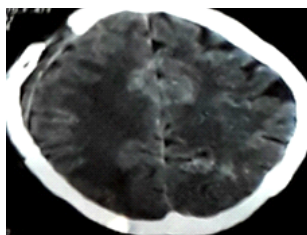


Figure 7: Repeated NECT on follow up after 1 ½ months showed reduction of air foci.

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