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Isolated Hemiatrophy of Occipital Lobe–A Rare Neurological Case

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Abstract

Human cerebrum has four lobes in each side. Generalised cerebral atrophy is common with senile degeneration but unilateral or hemiatrophy of cerebrum is rare condition in any age group. There are few reported cases where one or more lobe of one sided cerebrum has undergone atrophic change and most of the reported cases were of younger age group. Seizure, limb weakness or sensory abnormalities are common presenting features of these cases. We are presenting a lady of occipital hemiatrophy who was presented with convulsion and limb sensory problems. Magnetic Resonance Imaging (MRI) of brain revealed unilateral occipital lobe atrophy. Features of this participant were compared with other international reported cases.

Keywords

Cerebral lobe; Magnetic Resonance Imaging (MRI); Atrophy

Introduction

Cerebral hemiatrophy is irreversible atrophy of partial or full cerebral hemisphere. It may involve all lobes or a single lobe of cerebral hemisphere. Cerebral hemiatrophy (CHA) is infrequently encountered in paediatric clinical practice [1]. However it exists and could be primary or secondary as defined by Alpers and Dear in 1939 [2]. The primary (congenital) CHA could be interwoven or aptly called cerebral hemi-hypoplasia or unilateral cerebral hypoplasia as it could actually be de-novo lack of cerebral development [2]. Here, the insult occurs in-utero, with consequent shift of midline structures towards the side of the disease and absence of sulcal prominence [3]. These features differentiate it from secondary CHA which could originate from cerebrovascular lesion, inflammatory process, or cranial trauma. In most of the cases the etiology is idiopathic [4]. Other possible causes are intrauterine vascular injury, birth trauma, ischemia, radiation, tumour, head trauma, prolonged seizure etcetera [5]. Convulsion is the commonest presentation among all the presented cases but patient may present with cognition impairment, behavioural change, limb weakness, headache or symptomless [5]. Magnetic Resonance Imaging (MRI) of brain and Computed Tomography (CT) scan of brain helpful in diagnosing the condition. Cerebral hemiatrophy may be accompanied by change in sizes of sulci and gyri, enlargement of intracranial paranasal sinuses, facial hemiatrophy or calvarial (skull bone) hypertrophy [6]. The management of the condition is according to the presentation and findings. So far only few such cases have been presented. We are taking the opportunity to present a case of right sided occipital lobe hemiatrophy which is a rarely diagnosed neurological case. Informed consent was taken from the patient for participating in this study. The objective and purpose of the case report is to present the unusual presentation of this case and to compare the clinical findings of the other reported cases.

Case Report

This 61 year lady was presented to this hospital with the complaint of left sided burning sensation for 2 years. She is a known case of diabetes mellitus and her blood sugar is controlled by oral hypoglycemic agents. She does not know any abnormal event of her intrauterine life or her childhood neurological disease. There was no medical record available regarding her birth or vaccination. She had a complaint of left upper limb occasional abnormal movement which was diagnosed as a focal seizure disorder 3 years ago. For which anti convulsion medication (Tablet Levetiracetam 500 mg twice a day) was started and as off now the focal seizure was in controlled. She denied any head trauma or intracranial infection. On examination her cognition was normal. Mini Mental Score (MMS) was 28 out of 30 which was in normal limit. Ophthalmological examination revealed distance vision power was 6/9 in both eyes and near vision power was plus 1.5 in both eyes which were corrected by glasses, which indicates that the visual centers of occipital lobes were normal. There was no field or colour defect. All other cranial nerves were normal. There was no motor deficit. Sensory modules were also in normal limit. Cerebellar signs

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including finger-nose and heel-shin tests were normal. MRI of brain was performed. It showed atrophy of right occipital lobe (Figure 1) with right sided calvarial hypertrophy (Figure 2). Other cerebral lobe and cerebellar volume were symmetrical in both sides. There was also hyperpneumatization of sphenoid (Figure 3) and maxillary sinuses. Facial muscles and bones were symmetrical in both sides. Electroencephalogram (EEG) of brain didn't reveal any epileptogenic foci. She was treated conservatively by over the counter analgesics (tablet Paracetamol 500 mg PRN) for her limb pain. At the time of two months follow up the patient was seizure free without any neurological deficit.

Discussion

We are presenting the 61-year-old lady who had atrophied right occipital lobe with few other abnormal radiological findings. We have compared the presentation and image findings of the patient with other published similar cases to find out any similarity.

Our case was an older lady. Her intellectual and cognition level was normal since her childhood. Her atrophy was in right side of occipital lobe. She had hyperpmeumatization of sphenoid sinus calvarial hypertrophy. She was presented with seizure which was controlled by medication.

Uduma Felix et al., presented two cases of cerebral atrophy [7]. The first case was a 15 year old boy who used to suffer from repeated febrile attack leading to poor learning ability and speech. He also experienced sudden abnormal rapid growth and precocious hirsutism and eventually diagnosed as Gigantism. His MRI brain showed left sided cerebral atrophy with frontal horn dilatation, left calvarial inner plate hypertrophy and hyperpneumatization of frontal and sphenoid sinus. The second case was a 12 year old boy

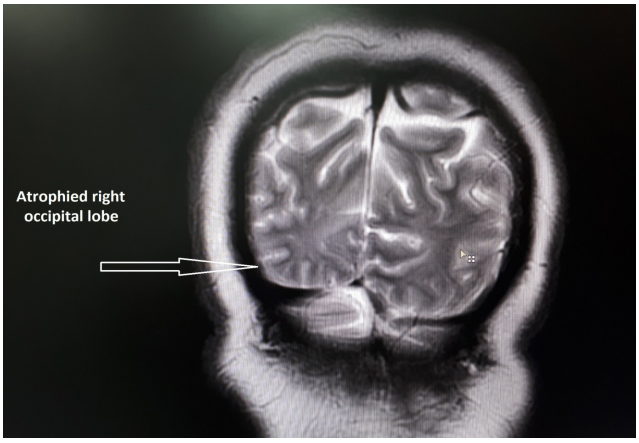

Figure 1: Showing atrophied right occipital lobe

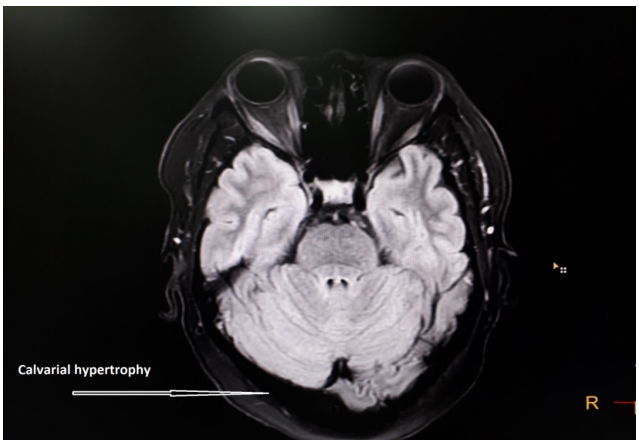

Figure 2: Showing calvarial hypertrophy

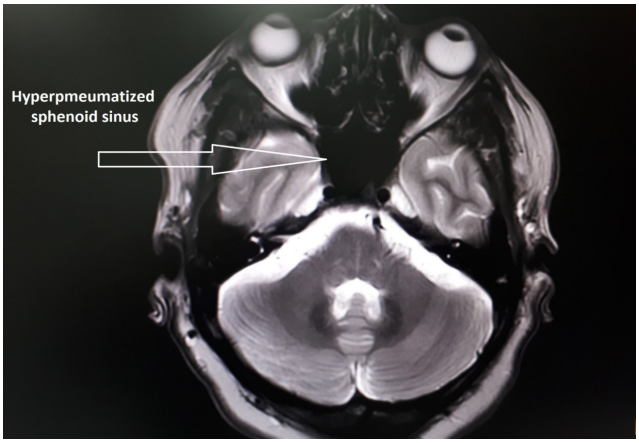

Figure 3: Showing hyperpneumatized sphenoid sinus

who became hyperactive and suffered from epileptic attack for few months before the diagnosis [7]. His developmental milestones were normal and didn't have any other neurological manifestation. MRI brain confirmed left temporal and inferior fontal gyrus atrophy with enlargement of frontal horn and transverse sinus. He also had elevation of petrous ridge and reduced size of middle cranial fossa (There was no CT brain done before, so it's not possible the comment on the onset of the hypernematization).

L Satua et al., presented two case reports on the same topic where the first patient was a 5 year old boy [8]. The boy was reported with generalized seizure. There was no history of head injury or birth related asphyxia. On examination he had weakness in his right sided limbs. MRI brain showed reduced size of gyri in left cerebral hemisphere with ipsilateral shifting of fax and third ventricle. Left lateral horn was minimally dilated. Left calvarial bone and mastoid air cells were enlarged. The second patient was a 19-year-old man who was suffering from generalized seizure from first year of his life [5]. He didn't have any birth trauma or birth asphyxia. This man had right sided hemiparesis. MRI was reported as atrophied gyri in left cerebral hemisphere with displacement of midline structures. Left lateral horn was mildly dilated. The skull base calvaria and mastoid air cells showed compensatory dilatation.

Jeremy and Mark published their case report about a 21 year old man who was presented with generalized tonic-clonic seizure and left sided paraesthesia [9]. His seizure was controlled by carbamazepine. His brain MRI revealed left side temporal, parietal and occipital lobe atrophy. This man didn't have any other coexisting issue.

Bal Shrestha presented a 13-year old boy with recurrent seizures for the past 10 years [10]. He had been treated with anticonvulsant medication which was satisfactory at first but later the seizures recurred. Recently, the frequency of the seizures increased with pre-ictal dizziness and postictal drowsiness. Physical examination revealed mild left hemiparesis and left deviated gait irregularity. He was mentally alert but had not achieved all the developmental milestones as compared to normal child of his age. CT and MRI scan of the head showed hemiatrophic cerebral parenchyma with prominent sulci and encephalomalacia. In our case the developmental milestones were normal and there was no gait abnormality. Presenting feature convulsion was common in both the cases. In the images our lady didn't show any encephalomalacia change.

There were fair similarities between the presentation and image findings of the other published cases with our presented case. The side of lesion and the age of onset of symptom made our case very rare. In our patient the atrophy was in right side where as in all other reported cases the atrophies were in left side. All other reported cases were relatively younger than our patient because our case didn't have any complaint in her childhood or younger life so no CT of brain was done. All other patients reported to physician within 21 years of their age, on the contrary this lady was presented when she was 61. We will look forward to diagnose further similar patients to present a case series in near future.

Conclusion

Isolated occipital lobe hemiatrophy is a very rare presentation so far. This could be accompanied by paranasal sinus hyperpneumtization, calvarial thickening and enlarged mastoid air cells. Contralateral limb weakness, abnormal sensation and convulsion are the common presenting features. The age of the presentation of this lady was also rare for this disease. The side of the lesion of our case was also unusual. None of the previously reported patients had atrophy in their right side.

Conflict of Interest

None of the authors had any financial or academic conflict of interest.

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References

1. Goyal J, Shah V, Rao S, Jindal N. Dyke Davidoff Masson syndrome in Children. Internet J Pediatr Neonatol. 2008;10(2).
2. Sharma S, Goyal D, Negi A, Sood RGA, Jhobta A, et al. Dike Davidoff Mason Syndrome. Neuroradiol. 2006;16(2):165-166.
3. McMonagle P, Deering F, Berliner Y, Kertesz A. The cognitive profile of posterior cortical atrophy. Neurology. 2006 Feb;66(3):331-338.
4. Sirén AL, Radyushkin K, Boretius S, Kämmer D, Riechers CC, et al. Global brain atrophy after unilateral parietal lesion and its prevention by erythropoietin. Brain. 2006 Feb;129(Pt 2):480-489.
5. Atalar MH, Icagasioglu D, Tas F. Cerebral hemiatrophy (Dyke-Davidoff-Masson syndrome) in childhood: clinicoradiological analysis of 19 cases. Pediatr Int. 2007 Feb;49(1):70-75.
6. Uduma FU, Emejulu JK, Motah M, Okere PC, Ongolo PC, et al. Differential diagnoses of cerebral hemiatrophy in childhood: a review of literature with illustrative report of two cases. Glob J Health Sci. 2013 Mar;5(3):195-207.
7. Satua L, Singh H, Khanna SK, Singh A, Singh AP. Primary Cerebral Hemiatrophy. Med J Armed Forces India. 2000 Jan;56(1):59-60.
8. Cosgrove J, Busby M. Hemiatrophy and seizures: a case of adult-onset Rasmussen encephalitis. Pract Neurol. 2013 Feb;13(1):54-55.
9. Shrestha B. Acquired cerebral hemiatrophy: Dyke-Davidoff-Masson Syndrome-a case report. Turk Neurosurg. 2013;23(1):117-121.