Midbrain cysticercal cyst

Dhaval Shukla
Department of Neurosurgery, NIMHANS, Bangalore, India

A 26-years-old gentleman presented with history of fever, headache, double vision and drooping of both eyelids of three days duration. Examination revealed bilateral ptosis and restriction of upward gaze. The pupils were 4 mm in diameter, and sluggishly reacting to light. Visual acuity was 6/18 in both eyes. Both optic discs were hyperemic. Rest of the neurological examination was normal. An MRI of brain showed a single ring shaped lesion in midbrain. The lesion was cystic with a small solid nodule and perilesional edema. The wall of the cyst was isointense on T1 and T2. Post contrast MRI showed enhancement of cyst and small nodule [Figure 1]. The imaging findings were characteristic of a cysticercal cyst with a scolex. The patient was treated conservatively and no specific medication was given. He improved spontaneously, and at follow up, three months after onset of symptoms he had diplopia on looking toward right, though no extraocular muscle palsy was evident on examination.

Neurocysticercosis (NCC) is the most common parasitic disease of the nervous system in humans. Symptomatic NCC results from a combination of factors, including the number, stage, and location of the parasites within the nervous system, as well as the severity of the host's immune response against the parasites. NCC commonly presents with seizures, raised intracranial tension, and dementia. The unusual location of the cysts may result in uncommon neurological manifestations.

The causes of third nerve palsies in NCC are hydrocephalus, arachnoiditis in the interpeduncular cisterns, ischemia of midbrain, and intraparenchymal cyst within midbrain.

There are few reports of NCC within the midbrain. The following midbrain syndromes are described due to NCC: Isolated third cranial nerve palsy, recurrent third cranial nerve palsy, isolated bilateral ptosis, dorsal midbrain syndrome, and Claude's syndrome. Our case presented with dorsal midbrain syndrome.

Diagnosis of NCC is typically made on the basis of characteristic neuroimaging findings. Cystic lesions showing the scolex on CT or MRI are diagnostic of NCC. The imaging findings were characteristic of NCC and no further diagnostic modality was used in our case. There is evidence that single enhancing lesion represents degenerating cysts and does not require antiparasitic treatment. These patients are likely to do well independently of whether antiparasitic therapy is given. Our patient also did not receive any treatment and improved spontaneously.

References

1. García HH, Evans CA, Nash TE, Takayanagi OM, White AC Jr, Botero D, et al. Current consensus guidelines for treatment of neurocysticercosis. Clin Microbiol Rev 2002;15:747-56.
2. García HH, Del Brutto OH. Neurocysticercosis: Updated concepts about an old disease. Lancet Neurol 2005;4:653-61.
3. Sawhney IM, Singh G, Lekhara OP, Mathuria SN, Parihar PS, Prabhukar
Neurocysticercosis still remains as the great imitator and represents a huge diagnosis challenge given that some of the symptoms are similar to other CNS pathologies, epilepsy for example, and the few specificity of most of the findings in image studies and the immunologic tests. [1,2] But, there are certain clinical findings that help to have a definite and unmistaken diagnosis. Del Brutto et al. proposed in 2001[3] several criteria with variable degrees to diagnose neurocysticercosis. The absolute criteria are three, histological demonstration of the parasite from biopsy of a brain or spinal cord lesion, Cystic lesions showing the scolex on CT or MRI, and direct visualization of subretinal parasites by funduscopic examination.[3] The authors present a case of parenchyma neurocysticercosis, that meets the second absolute criteria. It is interesting that in this particular case the symptoms that the patient developed matched perfectly with the site where the cyst was located. It is an unusual location indeed, but with several years of experience, we can say for sure that these parasites can be found anywhere in the central nervous system.[4] The life cycle of the cysticercus has three stages: vesicular, colloidal, and calcified.[5] For the parenchyma cysticerci, the choice is whether treat the patient medically or not as Carpio et al describes.[6] Even though, the decision must be taken according to the patient and the symptoms, given that each patient is unique.[2] Based on the results of the MRI, the cyst was a single lesion, so, the authors decided not to give any specific medication and treat the patient conservatively, with the subsequent improvement of the patient.

How to cite this article: Shukla D. Midbrain cysticercal cyst. J Neurosci Rural Pract 2012;3:93-4.

Source of Support: Nil. Conflict of Interest: None declared.