Clinical History:

A 30-year-old man presented with episodic headache and vertigo since 2 months.

Imaging Findings:

A 30-year-old male presented with episodic headache and vertigo since 2 months. Clinical examination revealed papilloedema suggesting raised intracranial pressure. Neurologic examination was otherwise unremarkable. Routine blood investigations were within normal limits. MRI examination of the brain was performed using T1, T2 weighted standard spin echo sequences, FLAIR (Fluid Attenuating Inversion Recovery) and 3D-CISS (constructive interface in steady state) sequences. MR findings revealed enlargement of bilateral lateral ventricles with a well circumscribed cystic lesion in the anterior third ventricle. On coronal T2-weighted images it was seen to cause focal contour bulge along the lateral walls of the anterior third ventricle. An eccentric intracystic nodule could also be well appreciated. Signal intensity of the lesion was same as that of CSF on T2-weighted images, however the cyst contents were relatively bright compared to CSF on T1-weighted images. 3D-CISS images successfully demonstrated thin well defined cyst rim and an eccentric intracystic nodule. The cyst appeared relatively hypointense to the CSF on the 3D-CISS images. Brain parenchyma appeared normal with no concomitant cysts. Based upon the imaging findings a diagnosis of an intraventricular cysticercus cyst causing obstructive hydrocephalus was made. Patient underwent successful removal of the intraventricular cyst. Histopathological examination revealed a degenerated cysticercus cyst.

Discussion:

Neurocysticercosis is the commonest parasitic infection of the central nervous system affecting approximately 50 million people worldwide, ensuing approximately 50, 000 deaths annually. It is caused by the larval form of pork intestinal tapeworm Taenia solium. Neurocysticercosis is rampant in the developing world with a rising incidence in the developed nations due to increased travel to endemic regions. Neurocysticercosis is considered as one of the leading cause of epilepsy throughout the globe. It most commonly affects the cerebral parenchyma followed by the ventricles and the subarachnoid space. Intraventricular cysticercal cysts may be seen in 20-50% of cases, of which the fourth ventricle is a common site followed by relatively uncommon lateral ventricles and the third ventricle. Probably, effect of gravity, CSF flow patterns and direct entry via the choroid plexus make fourth ventricle the preferred site for intraventricular neurocysticercosis.

The clinical presentation is highly variable depending upon diverse factors such as host immunity, stage of cyst evolution, number, size and location of cysticerci. Seizures are the commonest presenting complaint in patients with parenchymal cysticercosis whereas intraventricular cysts usually present with symptoms related to increased intracranial pressure secondary to obstructive (non-communicating) hydrocephalus. An intraventricular cyst may degenerate leading to an ependymal reaction. This may result in stenosis at the level of aqueduct of Sylvius, either
due to ependymal inflammation or adhesions. A mobile intraventricular cyst can present with episodic hydrocephalus or sudden loss of consciousness with change in the head posture which is referred as Bruns syndrome. Bruns syndrome is characterised by sudden and severe headache, accompanied by vomiting and vertigo, triggered by abrupt movement of the head. Principal causes include cysts and cysticercosis of the fourth ventricle, and tumors of the midline of the cerebellum and third ventricle.

With the advent of MRI, invasive diagnostic procedures such as contrast ventriculography and CT ventriculography are no longer indicated for diagnosing neurocysticercosis. CT has a limited role in their detection as these are iso-attenuating to CSF. MRI is presently the preferred imaging modality. T1-weighted and FLAIR sequences are reportedly more sensitive in diagnosing degenerated intraventricular cysts. Degenerated cysts often show increased signal on T1-weighted and FLAIR images owing to higher protein content. Viable cysts usually demonstrate isointense signal to CSF on both T1 and T2 weighted images and therefore may be missed on routine examination. Ventricular contour bulge, detection of cyst walls, obstructive hydrocephalus and presence of CSF flow voids in its vicinity may be the only diagnostic clue appreciable on conventional sequences. 3D-CISS sequence (heavily T2 weighted sequence) reportedly has a higher sensitivity in identifying cysticercal cyst wall, cyst contents and the scolex. Differential diagnosis of an intraventricular cysticercal cyst includes choroid plexus cyst, ependymal cyst, and colloid cyst.

Treatment of intraventricular cysts remains a topic of debate. These cysts are relatively more resistant to medical therapy as compared to their parenchymal counterparts. Surgical neuroendoscopic removal has gained popularity and is considered as the preferred therapeutic procedure for the management of intraventricular neurocysticercosis.

**Differential Diagnosis List:** Bruns syndrome caused by intraventricular neurocysticercosis

**Final Diagnosis:** Bruns syndrome caused by intraventricular neurocysticercosis

**References:**


**Description:** Intra cystic contents are slightly hyperintense compared to CSF on axial T1-weighted spin echo sequence. **Origin:**
Figure 2

Description: Coronal three-dimensional constructive interference in steady state (CISS) sequence demonstrates lesion within the third ventricle showing eccentric intra luminal nodule suggestive of scolex. Cyst contents are relatively less intense as compared to the CSF. Origin:
Figure 3

Description: Sagittal T2-weighted MRI showing a cystic lesion in the anterior third ventricle with dilation of lateral and third ventricles. Origin:
Description: Coronal T2-weighted MR images reveal an intra-ventricular cystic lesion in the anterior third ventricle causing obstruction of both Monro foramina. An eccentric intra cystic nodule is seen along the inferior aspect of the lesion. Origin: