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Case Report

Delayed Presentation of Post-Traumatic Porencephalic Cyst with CSF Rhinorrhoea

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ABSTRACT

Porencephalic cyst is a fluid filled intracranial lesion, which is usually congenital, but may develop following trauma. CSF rhinorrhoea occurs mostly following trauma and some can present years later, with resulting morbidity and the need for further management. We report an unusual case of post traumatic CSF rhinorrhoea four years after history of trauma. Initial CT scan following trauma was normal and was managed conservatively. Subsequently, patient presented with CSF rhinorrhoea after 4 years. CT scan showed porencephalic cyst of frontal lobe. CSF leak was managed conservatively and was advised for further neurosurgical intervention. Late onset CSF leak seems to be rare, but important complication of traumatic brain injury.

Keywords: CSF rhinorrhoea; Porencephalic cyst; Trauma.

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INTRODUCTION

Porencephalic cyst is fluid filled intracranial lesion that may communicate directly with ventricular system or it is separated from brain tissue which is covered by arachnoid on its outer layer. It contains cerebrospinal fluid with smooth wall lined by gliotic or spongiotic white matter.[1]

Two types of porencephalic cyst have been described: a) congenital porencephalic cyst and b) acquired porencephalic cyst. Acquired porencephalic cyst occurs because of infarction, trauma, hemorrhage, and other idiopathic causes.[2]

Porencephalic cyst is often associated with various neurologic signs, including visual-field defects, abnormal pupillary responses, decreased vision, nystagmus, strabismus, seizures, and CSF otorrhoea or rhinorrhoea.[3]

Here we report a rare presentation of CSF rhinorrhea with porencephalic cyst which occured four years following head injury.

CASE REPORT

A twenty-seven years old male was hit on his head during motor-vehicle accident. At the spot of incidence, he had transient loss of consciousness for five minutes, which was followed by severe frontal headache. CT scan of head was normal and he was managed conservatively and discharged home after three days.

Four years following trauma he had watery nasal discharge from bilateral nostril for two days, which was increased in leaning position. Secretions could not be sniffed back and

was accompanied by two episodes of projectile vomiting. On admission he was oriented and alert. Physical examination was unremarkable and he had no neurological deficits. When the secretion was collected in a test tube and allowed to stand for, it remained clear. Sugar content of fluid was 45 mg/dL. Handkerchief test showed no stiffness. Beta2-transferrin assay was not done due to non-availability. Otoscopic examination was normal. Urgent non-contrast CT scan of head was done and it revealed porencephalic cyst of right frontal lobe that communicated with frontal horn of right lateral ventricle (Fig. 1). CSF leak was managed conservatively and was advised for neurosurgical intervention.

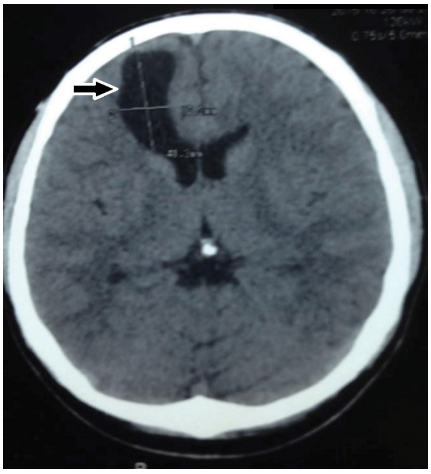

Figure 1: CT scan of head showing porencephalic cyst of right frontal lobe (indicated by arrow) that communicated with frontal horn of right lateral ventricle.

DISCUSSION

Porencephaly is a pseudocyst that usually develops due to infarction or other destructive brain lesions and is mostly congenital.[4] Acquired cases are caused by trauma, infection or hemorrhage. It can be located in any lobe of the brain, frontoparietal location being more in congenital cases.[5] The cyst causes a wide range of neurological symptoms including visual-field defects.[3] Clinical presentation of CSF rhinorrhoea and CSF otorrhoea are rare.[6] Retrospective review of 51 patients with traumatic CSF rhinorrhoea reported that 16% of patients developed occult leaks and ultimately presented with meningitis an average of 6.5 years after trauma.[7]

We report a case of acquired porencephalic cyst involving frontal lobe with rare presentation of CSF rhinorrhoea four years after trauma. At the earlier CT scan of head following trauma there was no contusion or fractures. After four years, porencephalic cyst at frontal lobe may have developed due to negative pressure generated between paraventricular area and intraventricular CSF. This may lead to chronic hypoperfusion followed by cystic degeneration, which may be the precursor of cyst formation. Localized inflammation often helps to seal small dural tears, but atrophy of the resulting scar and changes to surrounding bone can potentially occur over many years, thus weakening the site and increasing the risk for delayed leaks. Delayed CSF leakage is probably due to slow herniation of intact dura through bony defects, finally tearing the dura and causing the CSF to leak. Other mechanism may be due to focal atropy and rupture of arachnoid projection that accompany fibers of olfactory nerve.[7-8] CSF leak in such delayed cases may also be due to raised intracranial pressure, subsequent trauma and ascending infections. Our case was managed conservatively with complete bed rest, head elevation at 30 degrees and antibiotics. There may be chances of delayed infection but no feature of meningoencephalitis was present. CSF leakage and vomiting completely subsided during two days of admission.

CONCLUSIONS

To conclude, late presentation of porencephalic cyst with CSF rhinorrhea is very rare. High index of suspicion is needed for the diagnosis, especially in the patients with the prior history of head trauma and presents with rhinorrhea.

REFERENCES:

1. LeCount ER, Semerak CB. Porencephaly. Arch Neurol Psychiatry 1925;14:365-83. Crossref
2. Al Thafar AI, Al Rashed AS, Al Matar BA, Al-Sharydah AM, Al-Abdulwahhab AH, Al-Suhibani SS. An Atypical Porencephalic Cyst Manifesting as a Simple Partial Seizure: A Case Report and Literature Review. Case Reports in Neurological Medicine. vol.2017, Article ID 2174045, 4 pages, 2017. Crossref
3. Yang DN, Townsend JC, Ilsen PF, Bright DC, Welton TH. Traumatic porencephalic cyst of the brain. J Am Optom Assoc 1997;68:519-26. Crossref
4. Gardener-Medwin D. Developmental abnormalities of the nervous system. In: Weatherrall DJ, Ledingham JGG, Oworall DA, editors. Oxford Text Book of Medicine. New York: Oxford Medical Publications; 1996. 3rd ed. p. 4116. Crossref
5. Tonni G, Ferrari B, Defelice C, Gentini G. Neonatal porencephaly in very low birth weight infants: Ultrasound timing of asphyxial injury and neurodevelopmental outcome at two years of age. J Matern Fetal Neonatal Med 2005;18:361-5. Crossref
6. Ryzenman JM, Rothholtz VS, Wiet RJ. Porencephalic cyst: a review of the literature and management of a rare cause of cerebrospinal fluid otorrhea. Otol Neurotol 2007;28:381-6. Crossref
7. Friedman JA, Ebersold MJ, Quast LM. Post-traumatic cerebrospinal fluid leakage. World J Surg 2001;25:1062–6. Crossref
8. Ommaya AK. Cerebrospinal fluid rhinorrhea. Neurology 1964;14:106-13. Crossref