

Pontine Abscess Simulating Posterior Fossa Lesion: A Case Report

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Abstract:

Pontine abscess is an uncommon condition associated with high mortality. It can be managed by medical treatment alone, stereotactic aspiration of pus followed by medical treatment or by surgical drainage of the abscess. We present a case of pontine abscess which presented in an unusual manner and treated successfully by surgical drainage followed by antibiotic therapy.

Key words: pontine abscess, pilocytic astrocytoma, posterior fossa lesion.

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Introduction:

Pilocytic Astrocytoma is the most common cystic tumour in posterior fossa in case of paediatric age group. Pyogenic abscess presenting as pilocytic astrocytoma is rare. We describe a case of pyogenic abscess in pons in a 6 year old boy, presenting with typical features of posterior fossa lesion with good recovery after drainage of pus.

Case Presentation:

6year old boy presented to neurosurgery department of Dhaka medical college hospital with the history of headache and recurrent fall for 2 years. He also complained of vomiting, difficulty in walking. No history of fever, ear discharge or tooth infection or cardiac anomalies. On admission baby was drowsy and apyretic. Vital signs were within normal limit. Cranial nerves were intact. No hemiparesis. Cerebellar signs were present. No signs of meningeal irritation. The haematological investigations were unremarkable. A plain CT of head was performed which revealed a hypodense lesion in the posterior fossa with

hydrocephalus. MRI of brain with contrast was performed which revealed an oval well circumscribed lesion measuring approximately 4cm×3cm×2cm in the dorsal portion of pons with irregular capsular enhancement. Pilocytic astrocytoma was considered to be the most likely diagnosis.

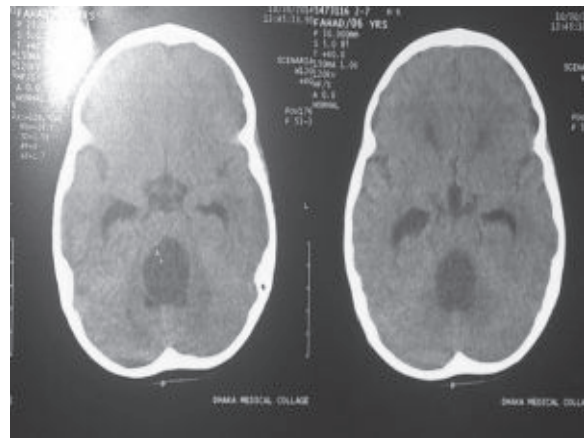


Fig.-1: preoperative plain CT showing a hypodense lesion in posterior fossa.

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After preoperative evaluation patient was taken up for surgery and a midline suboccipital craniectomy was performed. After splitting the vermis and retracting the cerebellar hemisphere a swelling was found in the dorsal portion of pons. The wall of abscess cavity was punctured, approximately 20 ml pus was aspirated and sent for microscopical examination and culture sensitivity. Thorough surgical toileting was done. Dura was closed in an watertight fashion and wound closed in usual manner. Microscopical examination of pus revealed Acinetobacter and Pseudomonas species.

A diagnosis of pontine abscess was made. The patient was started on injectable antibiotic on the immediate

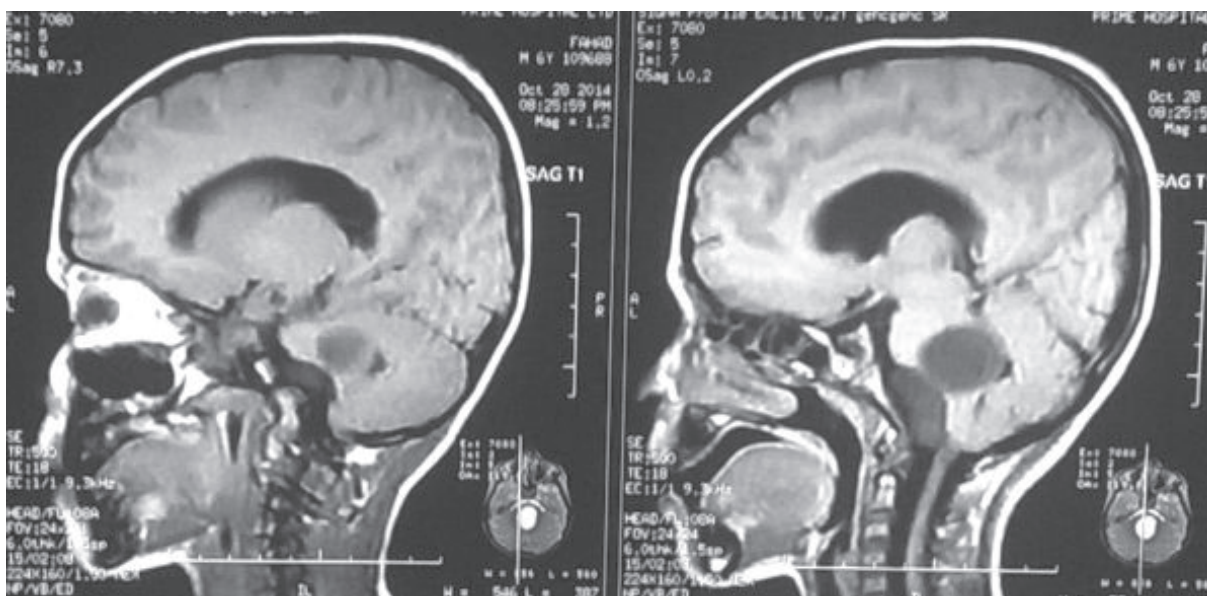


Fig.-2: Preoperative MRI T2WI Saggital image showing a hypointense lesion in front of Pons.

postoperative period and readjusted as per culture sensitivity report. Antibiotics were given intravenously for 2 week followed by oral antibiotic for 4 weeks. Neurological symptoms improved gradually

except that baby developed left sided facial nerve palsy. A repeat CT of head was performed postoperatively which showed resolution of abscess cavity and no evidence of acute hydrocephalus.

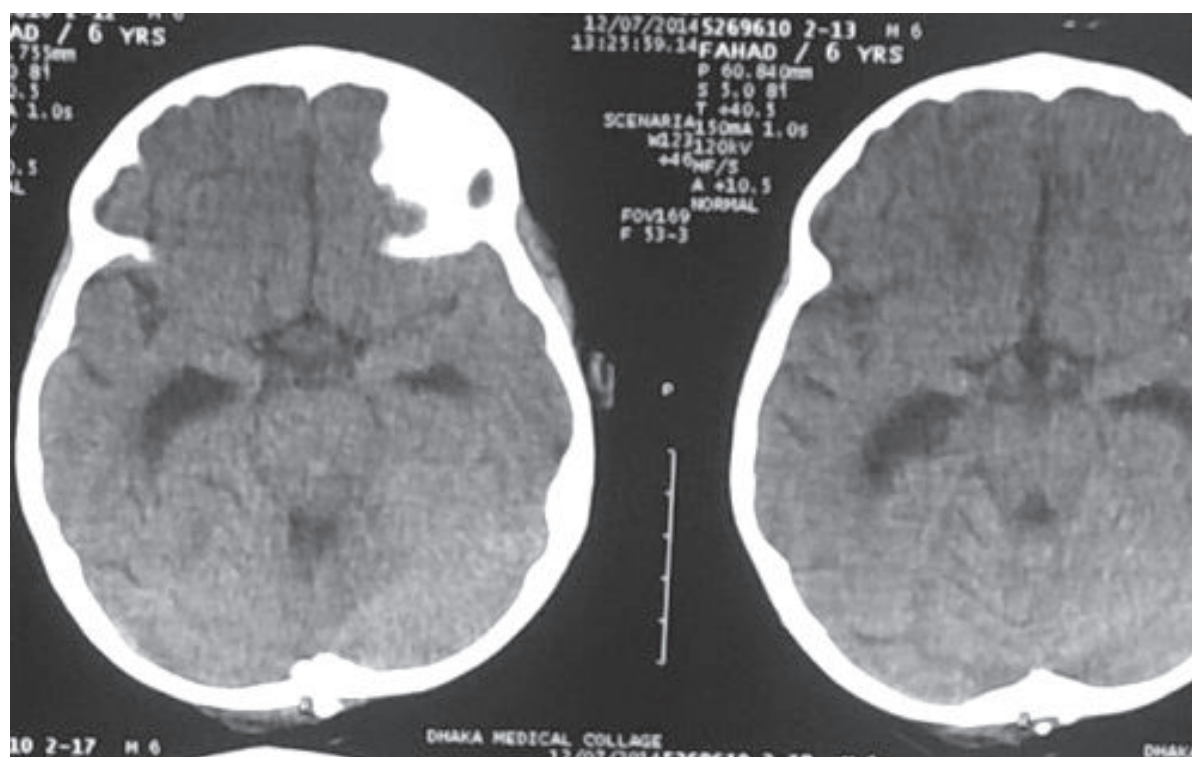


Fig.-3: postoperative CT showing complete resolution of abscess cavity.

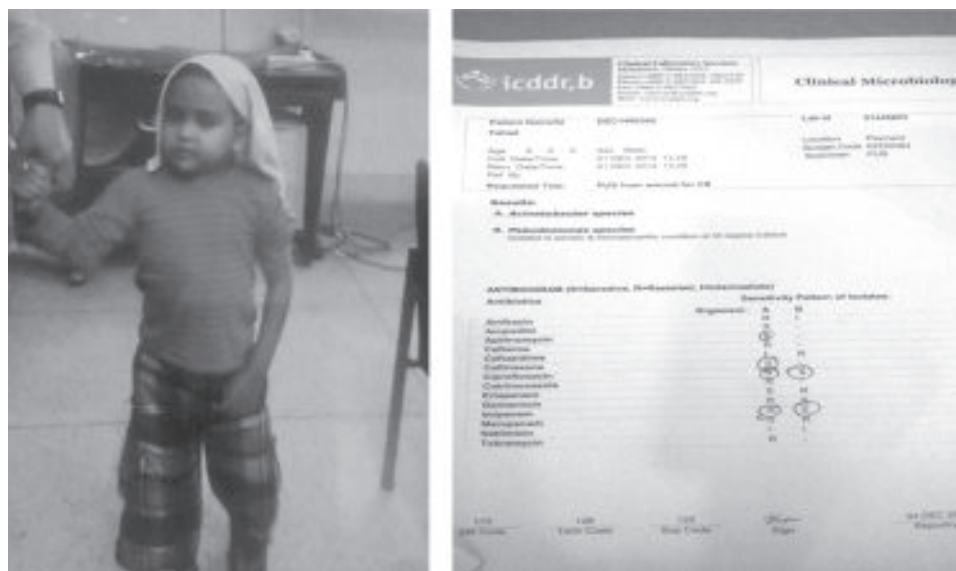


Fig.-4: postoperative Condition of the patient. **Fig5:**C/S report of pus

Discussion:

The case is presented as there was a discrepancy in clinical and radiological diagnosis with that of operative and microscopic diagnosis. This case shows that clinical & radiological picture of pyogenic pontine abscess is very similar to a posterior fossa lesion. The pyogenic abscess in pons is a rare entity presenting as challenging problems in diagnosis and treatment. Until quite recently rapid deterioration and fatal outcome was almost universal. Solitary brainstem abscess constitutes less than 4% of all posterior fossa abscess and probably less than 1% of all intracranial abscess¹. However paediatric brainstem abscess is more common with 2 of 22 cases of intracranial abscess in a recent series². Most brainstem abscess develops either by haematogenous spread from remote foci of infection usually in lung or by direct extension from adjacent structures most commonly ears and teeth. Infective foci may remain unknown in comparison to abscess in other region. In approximately one third patient reported its origin was unknown or could not be determined³. In the above case the primary foci remained unknown.

Patient with brainstem abscess most commonly presents with headache frequently in occipital region, cranial nerves deficit especially facial weakness, dysphagia and abducent palsy together with motor deficit (hemiparesis), headache and fever⁴. The clinical course may rapidly deteriorate ending usually in death within a week or two after the onset of sign symptoms⁴.

In the above case the course was completely apyretic. Regarding the pathogenesis of abscess nothing definite may be said as the baby was apyretic, no evidence of ear or tooth infection or no evidence of Tetralogy of Fallot.

With the advent of cranial CT identification and localization of brainstem lesion have been greatly facilitated. On CT pyogenic abscess in brainstem has a fairly characteristic appearance consisting of central hypodensity surrounded by a smooth ring enhancement after intravenous contrast injection.^{5,6} Management strategy includes prolonged antibiotic administration with or without stereotactic or microsurgical aspiration of pus^{7,8,9}. Comparison of results from non surgical, open surgical and stereotactic treatment for brainstem abscess is difficult. Large completely formed ring enhancing lesion usually require surgical intervention.¹⁰ In our patient an open microsurgical approach was safely carried out. Brainstem abscess is potentially curable with appropriate management and could be considered in the diagnosis of mass lesion in the brainstem.

Conclusion:

High clinical index of suspicion is necessary for good surgical outcome. The rarity of pediatric pontine abscess and nature of presentation and survival following surgical drainage makes this case different from other brain abscess.

References:

1. Russell JA, Shaw MDM. Chronic abscess of the brainstem. *J Neurol Neurosurg Psychiatry* 1977;40:625-9.
2. Nunez DA: Aetiological role of otolaryngological disease in paediatric intracranial abscess. *JRColl Sur Edinb* 1992;37:80-82.
3. Lichtenstein BW ,Zeitlin :Pontine abscess.*JAMA* 1936;106:1057-1060.
4. Weickhardt GD, Davis RL, Solitary abscess of the brainstem. *Neurology* 1964;14:918-25.
5. Dake MD, McMurdo SK, RosenblumML, Brawt-Zawadzki M : Pyogenic abscess of Medulla oblongata, *Neurosurgery* 1986;18:370-372.
6. Messina AV, Guido LJ, Liebeskind AL. Preoperative diagnosis of brainstem abscess by computed tomography with survival. *JNeurosurg* 1977;47:106-8.
7. SuzerT, CoskunE, CirakB, Yagci B, Tahta K. Brainstem abscess in childhood. *Childs nerv Syst* 2005;21:27-31.
8. Sarma S, SekharLN. Brainstem abscess successfully treated by microsurgical drainage: A case report.*Neurol Res* 2001;23:855-61.
9. Fuentes S. Bouillol P, Regis J, Lena G .Choux M. Management of brainstem abscess.*Br J Neurosurgery* 2001;15:57-62.
10. Baghai P, VriesJK, BechtelPC :Retromastoid approach for biopsy of brainstem tumors. *Neurosurgery* 1982;10: 574-57.