



Original Article

Management of Intracranial Abscess - Study of 30 cases

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Abstract

Brain abscess may be solitary or multiple. They appear as areas of ill-defined cerebritis to mature well defined focal suppurative lesion with capsulated abscesses. Multiple brain abscesses recognized in as many as 50% of patients. In this study 30 patients were analyzed. Solitary brain abscess were more than multiple abscess. Age ranges from 6 years to 35 years. Male to female ratio was 5:1. Intra parenchymal brain abscess occurred in all cases (100%), subdural or extradural lesions were nil. Brain abscesses were associated with CSOM. CT scan done in all (100%) patients as diagnostic tools. All (100%) patients under went Burr-hole evacuation with broad-spectrum antibiotic therapy and 2 patients (06.66%) treated with long term anti tubercular therapy. V-P shunt was made in 1 patient (03.33%) who had persistent ventriculomegaly. In this study mortality rate was zero.

TAJ 2003; 16(2): 73-75

Introduction

Brain abscess may be solitary or multiple.¹ The invention of antibiotics and improved treatment of infections have led to reduction of intracranial abscess formation. The incidence still lies at 2-3 patients per million per year.²

Patients and Methods

In this cross sectional observation study, 30 cases of intracranial abscess were analyzed from January 1995 to June 2003 in the Neurosurgery department of Rajshahi Medical College Hospital.

Results

Thirty patients of intracranial abscess were studied. Age of the patients ranged from 6 years to

35 years. Among these 30 patients, males were 25 (83.33%) and females were 5 (16.66%) with a male to female ratio of 5:1 (Table-I). Site of the intracranial abscesses were: temporal lobes -15 (50%), frontal lobes - 5 (16.66%)(Fig-I), parietal lobes - 2 (6.66%)(Fig-II), Cerebellar - 5 (16.66%)(Fig-III) and multiple lobes (frontal, temporal & cerebellar) - 3 (10%) (Table-II). Out of 30 patients 2 (6.66%) patients had tuberculoma of brain which were confirmed by histopathological examination.

Table-I: Sex distribution (n=30)

Sex	Number of patients	M: F
Male	25	
Female	05	5 : 1

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Fig-I: ICA (Frontal lobe)



Fig-II: ICA (Parietal lobe)



Fig-III: ICA (Cerebellar)

Table-II: Sites of Intra Cranial Abscess(n=30)

Sites of ICA		No. of ICA	Percentage (%)
Brain parenchyma	Temporal	15	50.00
	Frontal	05	16.66
	Parietal	02	06.66
	Cerebellar	05	16.66
	Multiple	03	10.00
Sub-dural	-	Nil	00.00
Extra-dural	-	Nil	00.00

Clinical Presentation

Headache and vomiting were the most common (100%) presenting features of intracranial abscesses followed by altered consciousness level (83.33%), pyrexia (16.66%), hemiparesis (16.66%), dysphasia (16.66%), ataxia (16.66%), nystagmus (16.66%), epilepsy (partial or complex) (16.66%), sinusitis and neck stiffness. Associated predisposing features included chronic suppurative otitis media (66.66%), typhoid fever (16.66%), compound head injury and tuberculous meningitis with abscess (6.66%).

Investigations

CT scan was done for every patient (100%). X-ray skull was done in head injured patients. Blood count including ESR was done in all cases. Pus from every patient sent for microscopic examination and culture sensitivity test. C/S report revealed that 15 (50%) patients had

Staphylococcal infection, 13 (43.33%) patients had sterile pus. Two (6.66%) patients had histopathological evidences of tuberculosis.

Treatment

a) Medical

- Antibiotics (Ceftriaxone, Metronidazole, Cotrimoxazole) were given for 4-6 weeks.
- Steroids were used to reduce cerebral oedema.
- Standard antitubercular therapy were used for 1 year for 2 cases.

b) Surgery: Burr-hole aspiration with irrigation and drainage in situ were done.

Follow up was also done routinely by CT scan and ultrasonography through burr-hole.

Discussion

In this study of 30 patients of intracranial abscesses, solitary abscesses were in 27 (90%) cases and abscesses in multiple locations in the brain parenchyma were in 03 (10%) cases. There was no sub-dural or extra-dural lesion. Solitary lesion is usually associated with congenital heart disease with right to left shunt². Multiple brain abscesses are common with systemic infections, which usually spread haematogenously.^{3,4}

Now a day's surgical treatment could be done with ultrasound guided or by stereotaxic assistance^{2,5}. Brain abscess with or without bacteriological diagnosis and with or without surgery require 3

months of antibiotic therapy². Underlying systemic infections or congenital defects must be treated². CT scan at 2-4 months interval has to be done even after completion of therapy⁵ because of the propensity of few lesions to recur when there is underlying systemic infections or congenital defects^{2,3,5}. In our study all the patients (100%) recovered uneventfully. One (3.33%) patient required V-P shunt for persistent ventriculomegaly. There was no mortality in this study. Prognosis of brain abscess patients has been significantly improved by advances in diagnostic and therapeutic techniques^{4,5}.

Conclusion

The use of CT scans in the diagnosis of intracranial abscesses and identification and treatment of pathogenic organism have significantly reduced the morbidity and mortality rate.

Acknowledgement

Brig. Gen. Dr. Md. Abul Kalam Azad, Director, Rajshahi Medical College Hospital.

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