

Management of Intracranial Hydatid Cyst

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ABSTRACT

Objective: To know the clinical presentation and surgical complication of intracranial hydatid cyst.

Materials and Methods: This retrospective study was done in neurosurgery department of Hayatabad Medical Complex, Peshawar, from 2nd February 1998 to 1st October 2012. A total of 37 patients with intracranial hydatid cyst, irrespective of gender discrimination were included in this study. Intracranial hydatid cyst was diagnosed on CT scan brain. The information regarding patient demographical details, clinical features, CT brain findings and post-operative complications was documented in patient's Performa. The data was analyzed by SPSS version 16. Frequency and percentage was calculated for categorical variables. Mean \pm SD was calculated for age. Results were presented as tables.

Results: A total of 37 patients were included in the study. Out of 37 patients, there were 23 (62.8%) males and 14 (37.14%) females. The mean age was 12.4 years. Most of patients presented with increased intracranial pressure features like headache, vomiting and papilloedema. Majority of the patients had hydatid cyst in parietal region %. Post-operatively two patients having wound infection and no mortality.

Conclusion: Hydatid disease should be kept in the differential diagnosis of cystic lesion of the brain. The pericystic hydraulic hydatid cyst excision is the safe procedure with minimal morbidity.

Key words: Management, intracranial hydatid cyst.

INTRODUCTION

Echinococcosis, which is often times referred to as hydatid disease or echinococcal disease, is a parasitic disease that affects both humans and other mammals, such as sheep, dogs, rodents and horses. There are three different forms of echinococcosis found in humans, each of which is caused by the larval stages of different species of the tapeworm of genus *ecchinococcus*. The first of the three and also the most common form found in humans is cystic echinococcosis.¹⁻³

The endemic areas are the Mediterranean countries, the Middle East, the southern part of South America, Iceland, Australia, New Zealand, and southern parts of Africa. Humans are accidental intermediate hosts and catch the disease by ingesting the hexacanth ova in contaminated vegetables or by direct contact

after patting infested dogs or farm animals. The ova hatches in the intestine and the larvae reach the liver through the portal system.^{2,4,5}

The most common areas of localizations are hepatic 66% and pulmonary 10%, representing 76% of the cases. The nervous system is affected in 3 – 7% of patients, other sites affected include abdominal in 8%, kidneys in 7% and bones in 2%. Hydatid cysts of the brain, single or multiple, are unique, usually supratentorial and located within the distribution drive of the middle cerebral artery.^{4,6,7} The patients with intracranial hydatid cysts usually present with focal neurological deficit and features of raised intracranial pressure; the latter may be due to the large size or due to interference with pathway of CSF flow. Surgically pericystic hydraulic method cyst excision is the ideal

treatment.^{3,8,9} The purpose of this study was to know the clinical presentation and post-operative complications of intracranial hydatid cyst.

MATERIALS AND METHODS

This retrospective study was done in neurosurgery department of Hayatabad Medical Complex, Peshawar, from 2nd February 1998 to 1st October 2012. A total of 37 patients with intracranial hydatid cyst, irrespective of gender discrimination were included in this study. Intracranial hydatid cyst was diagnosed on CT scan brain. After taking an informed consent these patients were operated on elective operation list. For pericystic hydraulic method craniotomy flap is made depending on the size and site of the lesion. The dura opened in a wide cruciateincision. With the help of Foley’s catheter, irrigation is started to the cleavage line in the brain – cyst interface and the anaesthetist is asked to perform valsalva manoeuvre. Surgery area of brain is covered with normal saline soaked cottonoid to prevent spillage in case of rupture. Cyst is removed and dura is closed water tight. Bone flap is put back and patient is dressed after wound closure. The information regarding patient demographical details, clinical features, CT brain findings and post-operative complications was documented in patient’s Performa. The data was analyzed by SPSS version 16. Frequency and percentage was calculated for categorical variables. Mean ± SD was calculated for age. Results were presented as Tables.

RESULTS

We operated 37 patients during our study period. There were 23 (62%) male and 14 (38%) female. Gender distribution is given in (Table 1).

Table 1: Gender distribution.

Gender	Number	Percentages (%)
Male	23	62
Female	14	38
Total	37	100

Age ranged from 2 years to 60 years with mean age 12.4 ±1.2 SD years. The details given in (Table 2).

The common clinical presentation was increased

intracranial pressure i.e. headache and vomiting. The details given in Table 3.

Table 2: Age distribution.

Age (Years)	Number of Patients	Percentages (%)
0 – 10	2	5.4
11 – 20	15	40.54
21 – 30	11	29.7
31 – 40	3	8.1
41 – 50	4	10.8
50 – 60	2	5.4

Table 3: Clinical features.

Clinical Feature	Number of Patients	Percentages (%)
Headach	35	94.6
Vomiting	35	94.6
Visual problem	31	83.8
Psychiatric problem	25	67.6
Seizures	19	51.35
Hemiparesis	11	29.7

The frontoparietal was the commonest area involved by intracranial hydatid cyst. The details given in Table 4.

Table 4: Site of brain hydatid cyst.

Brain Area	Number of Patients	Percentages (%)
Fronto-parietal	13	35.12
Parieto-occipital	10	27.03
Parietal	9	24.6
Frontal	5	13.5

DISCUSSION

Intracranial hydatid cysts are rare and these comprise 2% of space occupying lesions in brain. About 1 – 2%

of patients with hydatid disease have intracranial hydatid cyst. Majority (75%) of the patients are in the pediatric age group. An underlying patent ductus arteriosus in young children may predispose to systemic inoculation and intracranial localization of *E. granulosus* larva.^{5,10,11}

We operated 37 patients during our study period. Age ranged from 2 years to 60 years. The common age group was 11 to 20 years. Wani NA reported the common age group 8 to 13 years.¹² Bukte Y reported common age group 8 – 15 years.¹³ Ali M also reported the same age range.¹⁴

There were 23 (62.1%) male and 14 (37.8 %) female. Fares Y reported male dominancy in his study.¹⁵ Bukte Y also reported the same result in his study.¹³ Gupta S reported the same result.¹⁶

Clinical presentation depend upon the increased intracranial pressure and local compression of the cyst on the brain.^{9,11} In our study headach, vomiting and visual disturbances were the common symptoms while psychiatric changes was present in 25 (67.6%) patients, seizures was present in 19 (51.35%) patients and hemiparesis was present in 11 (29.7%) patients. Wani NA showed the common clinical presentation of hydatid cyst was headach, vomiting, papilledema and seizures in his study.¹² Bukte Y present the same pattern of clinical features in his study.¹³ Headach, vomiting and visual disturbances due to increased intracranial pressure effects were present in Fares Y study.¹⁵ Ali M also reported the same pattern of clinical presentation.¹⁴

Intracranial hydatid cysts are commonly seen in the supratentorial compartment located in cerebral hemispheres. Other reported sites include subarachnoid space, ventricles, pons, cerebellum, aqueduct of Sylvius, extradural space and diploic space of skull bones.¹² In our study the common intracranial localization of hydatid cyst was frontoparietal and parieto-occipital area. Fares Y repoted the same results in his study.¹⁵ Parietal region was also the comenest area involved in Bukte Y study.¹³

The treatment of cerebral hydatid cyst is surgical and the aim of surgery is to excise the cyst completely without rupture to prevent anaphylactic reaction and local recurrence. Preoperative diagnosis of cerebral hydatid cyst made on the basis of typical CT or MRI findings is an important component in the chain of events to prevent cyst rupture during surgery.¹² In our study there was no mortality and two patients having wound infection which was improved with daily dressing and antibiotic according to the culture and sensi-

tivity report. Ali M also reported no mortality in his study.¹⁴

CONCLUSION

Hydatid disease should be kept in the differential diagnosis of cystic lesion of the brain. The pericystic hydraulic hydatid cyst excision is the safe procedure with minimal morbidity.

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