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Brain Hydatid Cyst in Neurosurgical Practice in AL-Nasiriyah City

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ABSTRACT

The aim of study to alert the neurosurgeon and clinician of the diagnosis of hydatid cyst in CNS diseases and to emphasis the role of the neurosurgeon in such problem and encourage further studies on this subject to improve our tools in therapy particularly medical treatment, 15 cases of the hydatid cysts involving the brain were reported for ten years (2006-2016). The prospective study from patients who were admitted to the neurosurgical department of the AL-Hussain teaching hospital & Al-saddy private hospital. The clinical assessment brain CT scan all patient were treated surgically. We found Brain hydatid diseases tends to occur in children and young adult and distribution of the middle cerebral artery and tend to be single slow growing with slight or no inflammatory reaction or edema. Brain hydatid cyst are uncommon but benign one should suspect them. Particularly in our area where the disease in endemic and common in other part of the body liver, lung. Diagnosis should be done pre-operatively by CT scan.

Keywords: Brain hydatid cyst, brain CT scan convulsion

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INTRODUCTION

The causative organism *Echinococcus Granulosus* Is larval stage of the dog tapeworm (1). The disease is most common in sheep and cattle raising area of south American, north Africa, Australia and central Asia (1). in gestation is accrued through Gastro-intestinal tract by thy drinking or eating contaminated water or food. The liver and lung are the primary site of investment, but some spread to the brain 2% or bone (spine) 2% (1). Cerebral hydatid disease is rare and occurs in about 2% of cases (2). Hydatid cysts of the brain are usually single, spherical, unilocular, and may be large; in rare instances, they can be multiple and embolic (3). Although an intracranial single lesion is nearly always primary, multiple lesions are frequently secondary (4,5,6,7). Multiple hydatid cysts resulting from the rupture of a primary cyst are acephaloceles; they are infertile and have no broad capsule (8). However, very rarely a multiple larval intake may cause primary multiple cerebral hydatid cysts (9,10). Intracranial hypertension secondary to mass effect is usually the first clinical sign of brain involvement (8). Because of their indolent nature, hydatid cysts may not cause focal neurological signs until they are very large (2)

MATERIALS AND METHODS

Patients and methods

For ten years studies from 2006-2016, take15 patients with brain hydatid cysts involving the brain. This study is prospect, and the data were collected during the study including, History, clinical examination, neurological deficit, investigation were reported both early and late with in follow up period from (2-9) years.

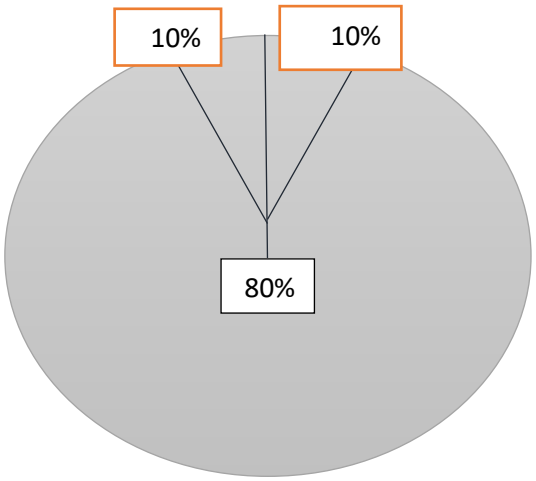
Statistical analysis

Data were expressed as the means of three independent experiments. Statistical comparisons of the results were performed by chi-square using SPSS ver.19. Significant differences ($P<0.05$) among the parameters

RESULTS AND DISCUSSION

Results

Age incidence had shown that in 60% of the cases the age was 20-30 years and only two patients were over 40 years old (table1). The accompanied hydatid cysts disease in body with CNS hydatid cysts was the lung in 9 patients, no liver involvement in our series and 60% non-accompanied lesion in primary brain hydatid cyst (table2). The most common site of the brain hydatid cyst was parietal lobe 45% all lobes are equal in percentage; it was 13.3% for each lobe (table3). Most cerebral of hydatid cysts were supratentovial but there are 2 cases of infratentorial lesion had, shown the duration of symptoms mostly 3-6 month 60% before the diagnosis was established It is rarely to see patients with less than 3 weeks duration or less than one year (Table4). The clinical presentation mostly likely headache, vomiting, i.e., Increased intracranial pressure in 40% (Table5). Focal deficit in 20% of the cases and epilepsy in 13.3% of cases. The radiological finding was normal x-ray in all 15 cases of brain hydatid cysts and had shown the characteristics pathognomonic CT finding of spheroidal cyst SOL with fluid density identical to the CSF (Table6). Craniotomy and total removal of the hydatid cyst was done in 13 occasions and it was curative Some patients were operated upon twice or three times for recurrence of the hydatid cyst medical treatment was tried in 3 patients with recurrence using Vermox Albandenzole in high doses but there is no benefit (Table7). The complication which we have encountered following surgical treatment recurrence which was happened in 33.3% (Table8). Brain hydatid diseases tends to occur in children and young adult and in the distribution of the middle cerebral artery and tend to be single slow growing and with little or no inflammatory reaction or edema (Fig 1)



X^2= 98.00df= 2 p-value= 0.00

Fig 1: distribution of the middle cerebral artery

Table1: Age incidence

Age	No	%
20-30	9	60
31-40	4	6.6
>40	2	13.3
total	15	

X^2= 63.175 df= 2 p-value= 0.00

Table 2: Accompanied H.D Else were

Accompanied	No	%
Pulmonary H.D	6.00	40.00
Hepatic H.D	0.00	0.00
None	9.00	60.00

X^2= 4.00df= 2 p-value= 0.046

Table 3 : Site of the cerebral H.D

Site	No	%
Parietal	9	45
Frontal	2	13.3
Occipital	2	13.3
intratentovial	2	13.3
Total	15	

X^2= 36.57df= 3 p-value= 0.00

Table 4: Duration of symptoms

Duration	No	%
>3 weeks	3	20
3 -6weeks	9	60
6m-1 year	1	6.6
Over one year	2	13.3

X^2= 68.27 df= 3 p-value= 0.00

Table 5: Clinical presentation

Presentation	No	%
I.C.P	6	40
Hemiparesis (focal deficit)	3	20
Cranial Palsies	3	20
Psychological upset	1	6.6
Epilepsy	2	13.3
Total	15	

X^2= 30.90 df= 4 p-value= 0.00

Table 6:Radiological findings

Finding	No	%
Skull normal	15	100
Typical CT scan Spheroid Cystic sol	15	100

X^2= 100.00 df= 1 p-value= 1.00

Table 7: management

Surgical treatment	No	Result
Craniotomy and total removal unruptured	13	Curation
Medical treatment	2	No response

X^2= 8.06 df= 1 p-value= 0.005

Table 8: Complication

Complication	No	%
Recurrence	5	33.3
Infective	5	33.3
Rupture	3	20
Death	2	13.3

X^2= 11.99 df= 3 p-value= 0.007

DISCUSSION

Hydatid disease is common endemic in Iraq. But hydatid disease of the CNS looks uncommon from our study at our department. We see not more than 2 cases per year. From 1950-1960 neurosurgeries saw more than these days up to 1 out of 10 brain tumors. It seems the incidence of the disease in decaling from improvement in health and education of the people AranaIngez (1) from Uruguay studies 167 case of CNS H. cyst demo stating that hydatid cyst is mostly a disease of children while spine hydatid cyst is mostly occurred in adult. The location of hydatid cyst in CNS seems mostly in the brain, spine, orbit and cranium in that order of frequency. 80% of cerebral H. cyst to be associated with hepatic lesion while Aransallniquze showed only 10% associated with pulmonary and hepatic lesion (11). In our study most of the CNS hydatid 60% there is no hydatid cyst elsewhere while in 40% there are pulmonary H. cyst with brain lesion (Table 2). The duration of symptoms of cerebral H-cyst was mostly 3-6-month duration in our study as well as from previous study (12). The signs and symptoms of increased intra cranial common complaint. Focal pyramidal signs were seen in 20% of cases in form of hemiparesis (13). Convulsion is relatively rare `presentation in our series 13.3% while in other studies it was higher our 30% (14). Cranial N involvement were seen in 20% which mostly the17th cranial nerve. while, in Arnan study showing only 9% cranial N polsies. Skull X. Ray were normal in all (15) patients with cerebral hydatid cyst, there is no calafications. Previous studies showed significant findings suggesting increased I.C.P suture. Dastasisor skull asymmetry especially in children. Brain CT scanning was the most ridable diagnostic method for brain hydatid cyst (12). All 15 cases there were typical cystic spheroid lesion with sharply (well-defined) border and fluid density similar to CSF and no perifocaledema. (15, 16). The patients with brain hydatid cyst were usually treated surgically. Where the hydatid cyst was excised or removed intact. The medical treatment with albendazol seems to bebeneficial both pre-and post-operatively. pericystic hydraulics method. Dowling –Orlando technique gives better result in removing these cysts (15). Occasion craniotomy and removal of unruptured hydatid cyst were achieved with curative results (13). Medical treatment was tried in two cases with recurrent brain hydatid cyst, but it was not proren, not sufficient doses not helpful (17). Post-operative complications were recurrence of brain hydatid cyst in 33.3% post –operative infection was seen in 33.3% in form of wound infection rupture of hydatid cyst were encountered in 3 cases of brain hydatid cyst with no anaphylactic shock or immediate death but there is definite recurrence of the disease death occurs in the cases which were died from increased I.C.P and recurrence of the disease (15).

CONCLUSION

1-Brain hydatid cyst are uncommon but benign one should suspect them particularly in our contrary where the disease in endemic and common in other part of the body liver, lung.
2-Diagnosis should be done pre-operatively by CT scan.
3-in surgical manipulation one should be avoid the rupturing the brain hydatid cyst and turning a benign condition to a malignant one by dissemination.
4-surgical treatment is curative if it done properly with precaution to avoid the rupturing the cyst remove it intact.
5- Medical treatment is of no help up to us know leg ment.
6- There are still guite many questions need to be answered in this field and this will stimulates further researchers and studies like medical treatment, recurrent cases.

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