

HYDATID DISEASE OF THE HEART A REPORT OF THREE CASES AND REVIW OF LITERATURES

SUMMARY:

Cardiac echinococcosis is rare disease even in countries where the hydatid disease is endemic. The involvement of the heart itself is reported to range between 0.5 and 2% of cases of Echinococcosis.

Three patients with cardiac hydatid cyst were reported in this study, their age ranged from 16 to 55 years. One pt had multiple hydatid cysts, which involve the interventricular septum ,This pt had polyvisceral involvement, of liver, spleen, lung and kidney that were removed surgically. The other two pts had pericardial cyst that removed surgically. Trial of albendazole was given to pt with interventricular hydatid cyst but failed .Cross sectional chocardiography is the best diagnostic procedured for cardiac hydatid disease.

الخلاصة :

أصابة القلب بمرض الأكياس المائية من الحالات النادرة جداً حتى في البلدان التي يكون فيها المرض متوطن حيث بشكل ذلك ٢-٠,٥% من مجمل الإصابات بمرض الأكياس المائية. في هذه الدراسة سجلت ثلاثة حالات لمرضى تراوحت أعمارهم من ١٦ إلى ٥٥ سنة. وكان لدى أحدهم إصابة الحاجز البطيني بعدد من الأكياس حيث كانت لديه إصابات سابقة في الكبد والكلى و الطحال والرئة. تمت أزالتهما جراحياً. سجلت أصابتان لغشاء القلب في المريضين الآخرين وتم رفع الأكياس جراحياً. كان تخطيط الصدى المقطعي الفحص التشخيصي لهذه الإصابات

INTRODUCTION:

Hydatid cyst disease is a significant health problem for developed and developing countries^{1,2}. Cardiac echinococcosis is rare disease even in countries where the hydatid disease is endemic.^(1,3,4) . The involvement of the heart itself is reported to range between 0.5 and 2% of cases of Echinococcosis^{1,4} Rupture of the cysts although rare is potentially fatal, resulting in anaphylaxis, cardiac tamponade³ and massive pulmonary embolisation.⁴ , Valvular dysfunction and electrocardiographic changes often occur as a result of direct involvement or displacement of valvular apparatus and the conduction system^{1,4} Before the development of echocardiography, the clinical diagnosis was extremely difficult. However, echocardiography is being increasingly recognized as a diagnostic investigation of choice.⁵⁻⁷

Cross sectional echocardiography images of hydatid cysts are essentially those of cystic masses with well-defined walls. In a few cases "solid" mass appearance and multiloculated character may be found. Computerized tomography (CT) of the thorax can identify cysts; however, it produces images in only one anatomical plane limiting morphological analysis, and often fails to detect small lesions.⁷

Owing to the high incidence of sudden death (20%) and rupture into the cardiac chambers (39%), or into the pericardium (10%), it is generally accepted that cardiac hydatid disease must be treated surgically unless the disease is recurrent or inoperable.⁸

The aim of this study to report these rare cases of cardiac hydatid cyst. This is the first report in Basrah (south of Iraq).

Patients and method:

Three pts with cardiac hydatid cyst were reported during the period of April 2001 to April 2002. Their age ranged from 16 to 55 years. Full history was taken, complete physical examination was performed. Investigations requested include complete blood count, chest X ray, Electrocardiography and abdominal ultrasound.

M Mode and 2D echo using 2-4MHZ sector probe using Kretz technique was done. Long axis, short axis and 4-chamber view were studied in all the pt.

Thoracotomy and surgical excision of the cyst was done in two patients .A trial of albendazole therapy of 400mg\day for two month was given to one patient.

Results:

Three patients with cardiac hydatid cyst were reported in this study, their age ranged from 16 to 55 years. One pt had multiple hydatid cysts, which involve the interventricular septum (Case No. 1).

This patient had polyvisceral involvement, of liver, spleen, lung and kidney that were removed surgically.(Table 1)

The other two patients had pericardial cyst with partial involvement of adjacent myocardium All case presented with recurrent attack of chest pain. Two of them had atypical chest pain and one had typical chest pain for ischemia with deep symmetrical T wave inversion in the anterior chest lead(V1 to V6) on electrocardiography.(Table 1).

Echocardiography was the diagnostic test in two pt and it was not done in one pt (Case No 3) , this pt was diagnosed postoperatively ,he was referred for cardiac surgeon as case of pulmonary hydatid cyst.(Table 2)

Surgery was the curative treatment in two pt. The third pt (Case No1) was not operable .He was put on trial of albendazole therapy of 400mg\day for two months but he wasn't show any response to treatment on follow up and repeated echocardiography.

Discussion

The three patients presented with chest pain, it was atypical in the two young pts and it was ischemic in 55 years old pt with positive electrocardiographic changes for ischemia.

The precordial pains are usually the result of the partial rupture of the cyst into the pericardial sac, Oliviero,-U et al attribute the chest pain to coronary insufficiency, as a result of compression of coronary arteries.⁹ They advised to submit every case of cardiac echinococcosis to coronary arteriography, particularly if they are above the age of 40, and especially if the pt candidates for open heart surgery.⁹ They reported cardiac ischemia in 33 year old pt with interventricular septal hydatid ,whom chest and electrocardiographic changes disappeared with albendazole therapy⁹

Polyvisceral involvement found in one patient (Case no 1), this suggests that the cardiac cysts to be echinococcus in nature ¹⁰.

One pt had involvement of the interventricular septum (Figure 1,2) Echinococcosis in the heart is uncommon and a cyst in the interventricular septum is rarer still, accounting for only 2-9% of all cardiac cases.¹¹

This may lead to heart block ¹²⁻¹⁵ various form of arrhythmia, obstruction of Left or right Ventricular outflowtract^{3,16-17}, or rupture of the cyst to ventricle.¹

Apparently in this case lead to compression of coronary circulation and cardiac ischemia, this was consistent with Oliviero finding⁶

Agarwal et al report 25 years old male presented with complete heart block due to interventricular septum hydatid cyst ¹¹

Jean F et al administered that cardiac hydatid disease is very uncommon but when the cysts are intramyocardial, the most common location is the interventricular septum. ¹⁹

Two pts in this study had pericardial cyst with involvement of free wall of left and right ventricle one of them had pericardial effusion. this the most frequent site of cardiac hydatid occurred in 50-77% of cardiac echinococcosis ¹¹

The involvement of the pericardium may be manifested by: silent rupture and the appearance of the echinococcus cyst some months later; acute pericarditis with or without cardiac tamponad; and constrictive pericarditis ^{3,20-22}.

Echocardiography was the diagnostic test in this study, this was consistent with other study. . This consistent with other studies that cross sectional echocardiography is the best diagnostic procedure for cardiac hydatid disease^{5, 6}.

The diagnostic value of two-dimensional transthoracic and especially transoesophageal echocardiography is better than that of CT and NMR imaging ¹⁹. Computerized tomography (CT) of the thorax can identify cysts; however, it produces images in only one anatomical plane limiting morphological analysis, and often fails to detect small lesions.⁷

Therefore, these methods should be reserved only for the study of extracardiac involvement of echinococcosis ¹⁹.

Conclusion

We conclude that despite cardiac hydatid cyst is rare disease, it need high index of suspicion for the diagnosis of this potentially lethal disease.

A history of non-specific symptoms (mainly atypical chest pain), combined with a lack of physical findings should raise the

suspicion of echinococcal involvement of the heart, and lead to meticulous and careful echocardiographic investigation, and cross sectional echocardiography is the best diagnostic procedure for cardiac hydatid disease^{5,6}

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Table 1 the age, sex, presentation X-ray and ECG finding

Case No	Age	sex	presentation	X Ray finding	ECG finding
		M	Ischemic chest pain	Cardiomegally	Deep symmetrical T wave inversion from V1-V6
		F	Atypical chest pain	Cardiomegally	Normal
		M	Atypical chest pain	Cardiomegally	Normal

Table 2 the echo findings, other visceral involvement, treatment and outcome

CASE NO.	ECHO FINDINGS	OTHER VISCERAL INVOLVMENT	TREATMENT AND OUTCOME
	Multiple cyst of IVS with septation and multilocular feature due to daughter cyst	Liver spleen ,lung and kidney operated on 1972,1975.1992,and 1995 respectively	Trial of albendazole for two month but failed
	Pericardial cyst with pericardial effusion	negative	Surgical removal
	Pericardial cyst	negative	Surgical removal

Figure 1 hydatid cyst of interventricular septum show septation and multilocular feature due to daughter cyst

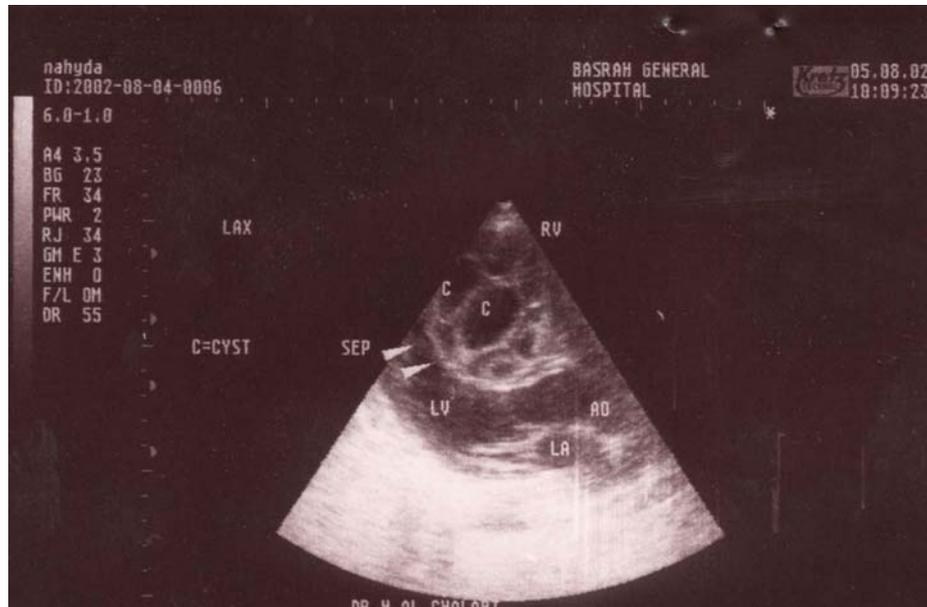


Figure 2 show multiple cyst of septum.

