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RARE CASE OF INTERVENTRICULAR SEPTUM HYDATID CYST CAUSING SIGNIFICANT LV OUTFLOW TRACT OBSTRUCTION.

Cardiology

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ABSTRACT

Cardiac echinococcosis is a rare manifestation of cystic echinococcosis (CE) caused by the tapeworm *Echinococcus granulosus*. Among all patients suffering from CE, only 0.5%–2% exhibit a cardiac involvement.

Diagnosis of cardiac echinococcosis requires a detailed evaluation of the patients' case history, specific laboratory analyses and radiological imaging methods. Ultrasound, MRI and CT are key imaging tools for diagnosis, therapy control, prognosis estimation and disease course control. For the therapy of cardiac echinococcosis, a combination of surgical removal and drug treatment should be applied to symptomatic as well as asymptomatic patients. The complete surgical removal of the cyst(s) is the major prognosis factor of the cardiac manifestation of CE.

KEYWORDS

Case report-

Rubina Chauhan, 32 year female, married, housewife, studied upto 5 std, resident of Gujrat, mother of 2 children, presented to the OPD with the chief complains of-

Breathlessness,since 3-4 months.
Chest pain since 3-4 months.

Pt was apparently alright 4 months back when started complaining of breathlessness such that initially it was NYHA II ,she could do all her daily routine household activities,was symptomatic only on doing heavy physical work like climbing stairs speedily,lifting weight.This progressed to NYHA III over a period of 4 months such that pt was now symptomatic on doing even routine household work.

Pt also complained of chest pain, precordial, in the form of heaviness of chest associated with fearfulness, radiating to left upper limb, associated with profuse sweating, classically increased on exertion and decreased by rest, since 4 months.

No significant negative /past/family/personal history.

On G/E:

Pt was conscious cooperative alert comfortable on supine posture.
Vitally stable.

On CVS examination:

Apex beat was seen in 5th ICS inside the midclavicular line,heaving type.

Heart sounds were normal.

There was an ejection systolic murmur located in left 3rd and 4th ICS with a late peaking character, not radiating to carotids, not changing on dynamic auscultation.

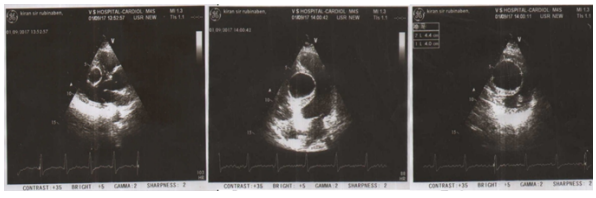
This pt was adviced echo for further evaluation of LV outlet obstruction.

ECG-Showed LV strain pattern.

2D Echo report-

- Mitral,aortic ,pulmonary and tricuspid valv - normal.
- aorta-21mm.
- left atrium-27mm
- LV Ds/Dd-21/40: LVEF-55%
- RA/RV-normal size and function.
- IAS/IVS-intact.RVSP-25mmHg.
- pericardium normal.

Doppler-mild MR,TR,AR.



-A 3.6x4.1x3.7cm spherical cyst with hyperechoic smooth margin with isoechoic capsule located in mid-anteroseptum causing LV obstruction with Gmax 60 mmHg.cyst appears clear without any scolex visualized.

Conclusion- Intraventricular septum cyst [?hydatid]with mid cavity obstruction,with normal LV size and Normal LV systolic function,reduced LV compliance.

Advice:3D TEE and MRI for further evaluation.

Pt was referred for Cardiac MRI REPORT AS BELOW-(7/9/17)

The study reveals evidence of large,rounded ,well defined,thin-walled,minimally enhancing,cystic lesion involving interventricular septum-projecting towaeds both right and left ventricles at mid cavity level with external compression over ventricular cavities(LV>RV) S/O possibility of Hydatid Cyst.

Approximate size measures 48x36mm in axial plane with craniocaudal extent of 44 mm.

No E/O calcification or daughter cysts or membranes seen within the cyst.

CORONARY CIRCULATION-

Right dominance.
Calcium score-nil.

Left main coronary artery,left anterior descending,right coronary and left circumflexarteries appears normal.

Visualized liver and B/L lung fields are normal.

Routine blood parameters were in normal range.viral markers were negative.

Blood culture using BacT/ALERT:FNPlus media were negative after 48 hrs of incubation.

Pt was referred to Cardiothoracic Surgeon for further definitive management- adviced Surgery.

She was operated on 23/9/17.

SURGERY-Encystectomy of Hydatid cyst done with cardio-pulmonary bypass.

No defect in IVS post op.,no LVOTO.
Surgery was uneventful.

Follow up (post cystectomy) echo done S/O-
Small residual cavity in IVS,normal LV and RV function.
No flow across the IVS seen.no effusion.
Follow up Cardiac MRI done –

The study reveals evidence of thickened interventricular septum with contrast filled out pouching within interventricular septum communicating with LV cavity ,measuring approx. 28x10 mm in axial plane and 30 mm craniocaudal extension.neck measures 8-9 mm.

Suggest possibility of pseudoaneurysm formation.
No E/O residual cyst.minimal B/L pleural effusion seen.

Pt was started on tablet Albendazole 400mg BD for 6 months considering it as a Hydatid Cyst , causing significant symptomatic LVOTO.

Discussion-

Human hydatidosis is a tissue infestation caused typically by larva of canine tapeworm Echinococcus granulosus. In addition, Echinococcus multilocularis and Echinococcus vogeli have also been reported.Most often, sheep is the intermediate host and the dog the definitive host, humans serve as common accidental host. Most infections arise from handling dogs or ingestion of faecal contaminated food items.Although human hydatidosis has been reported in the West, most cases come from inhabitants of World Health Organization (WHO) defined endemic areas.

Cardiac involvement in echinococcosis is rare, with an incidence of 0.5-2% of all cases of human hydatidosis. 55-60% of cardiac hydatidosis are limited to the left ventricle followed by right ventricular involvement in 15% cases, interventricular septum infestations are reported in 5-9% cases with right atrial involvement in 3-4%.

Clinical presentation of cardiac Echinoccocosis depends on the size and site of infestation. Compressive symptoms causing low cardiac output, ventricular outflow tract obstruction along with nonspecific features of weight loss, dyspnoea and fever have been reported.[1]Rarely, interventricular septal hydatidosis leads to conduction defect, as in our case. Far lethal outcomes of thromboembolism and/or anaphylactic shock have also been reported in cases of cardiac cystic rupture, which is as common as 39%. Although serological markers of Echinococcus are helpful, two-dimensional echocardiography remains the diagnostic utility of choice for cardiac hydatid cyst.Newer emerging techniques of cardiac Magnetic Resorance Imaging (MRI) and transthoracic CT have reported excellent diagnostic yields as well, with additional benefit of transthoracic screening for other tissue involvement. Surgical enucleation remains the treatment of choice for cardiac hydatidosis. However extreme care is to be taken to avoid cystic rupture which may result in grave complications, even death. Benzimidazoles as adjunct therapy is indicated for human hydatidosis and certain cases of cardiac hydatidosis have reported good results of post resection prophylaxis.

Echocardiography can distinguish between cystic and solid masses based on echo texture. However, a distinctive feature in our case was that echocardiogram revealed dense texture which was more suggestive of a solid tumour rather than classic echo-lucent space suggestive of a cyst. This unique case exemplifies that hydatid cyst should be kept in the differential diagnosis of a nonvascular intracardiac mass especially if surgical intervention is planned.