Journal Homepage: -www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI:10.21474/IJAR01/13384
DOI URL: http://dx.doi.org/10.21474/IJAR01/13384

RESEARCH ARTICLE

HYDATIC CARDIAC SYST: AN EXCEPTIONAL LOCATION

Yousra Oussou[1], Jihad Raoui[1], Siham Hallab[1], Latifa Oukerraj[1], Mohamed Cherti[1], Kaoutar Imrani[2], Nabil Moatassim Billah[2] and Nassar Ittimade[2]

1. Department Of Cardiology B, Ibn Sina Hospital Center, Mohammed V University, Rabat, Morocco.
2. Department of Central Radiology, IBN SINA HOSPITAL CENTER, MOHAMMED V University, Rabat, Morocco.

Manuscript Info

Manuscript History
Received: 05 July 2021
Final Accepted: 09 August 2021
Published: September 2021

Abstract

Hydatid cyst is a parasitic disease endemic in different regions of the world. Cardiac localization represents only 0.5 to 2% of all attacks, characterized by clinical, paraclinical and especially radiological polymorphism. Its spontaneous development is serious because of the risk of endocavity rupture. The diagnosis is facilitated by means of non-invasive imaging, in particular echocardiography, thoracic computed tomography and magnetic resonance imaging. Given the lack of alternative treatment options, cystectomy and pericystectomy are the only surgical techniques capable of offering chances of recovery with acceptable morbidity and mortality. Antiparasitic treatment comes in addition to surgery. Eradication of hydatid disease mainly involves effective collective and individual preventive measures. We present a clinical case of a 54-year-old patient who presented with asthenia followed by precordial pain, who has a normal EKG and chest x-ray. Transthoracic echocardiography (TTE) a mass that bulges in the lateral aspect of the left heart chambers. The thoracic tomodensitometry objectified a cystic image which bulges in the left cardiac chambers suggesting a cardiac hydatid cyst. A hypereosinophilia was objective in the biological assessment. The patient was sent to the cardiovascular surgery department for surgery. We present a clinical case of a 54-year-old patient who presented with asthenia followed by precordial pain, who has a normal EKG and chest x-ray. Transthoracic echocardiography (TTE) a mass that bulges in the lateral aspect of the left heart chambers. The thoracic tomodensitometry objectified a cystic image which bulges in the left cardiac chambers suggesting a cardiac hydatid cyst. A hypereosinophilia was objective in the biological assessment. The patient was sent to the cardiovascular surgery department for surgery. We present a clinical case of a 54-year-old patient who presented with asthenia followed by precordial pain, who has a normal EKG and chest x-ray. Transthoracic echocardiography (TTE) a mass that bulges in the lateral aspect of the left heart chambers. The thoracic tomodensitometry objectified a cystic image which bulges in the left cardiac chambers suggesting a cardiac hydatid cyst. A hypereosinophilia was objective in the biological assessment. The patient was sent to the cardiovascular surgery department for surgery.

Corresponding Author:- Yousra Oussou
Address:- Department Of Cardiology B, Ibn Sina Hospital Center, Mohammed V University, Rabat, Morocco.

Transthoracic echocardiography (TTE) a mass that bulges in the lateral aspect of the left heart chambers. The thoracic tomodensitometry objectified a cystic image which bulges in the left cardiac chambers suggesting a cardiac hydatid cyst. A hypereosinophilia was objective in the biological assessment. The patient was sent to the cardiovascular surgery department for surgery. Transthoracic echocardiography (TTE) a mass that bulges in the lateral aspect of the left heart chambers. The thoracic tomodensitometry objectified a cystic image which bulges in the left cardiac chambers suggesting a cardiac hydatid cyst. A hypereosinophilia was objective in the biological assessment. The patient was sent to the cardiovascular surgery department for surgery.

……

Introduction:-

Echinococcus granulosus, a parasite belonging to the Cestodes family, is responsible, through its larval form, for a disease: hydatidosis. (1) Morocco is considered to be an endemic area due to the predominance of animal husbandry. cattle and the human-dog-sheep promiscuity. It is a health problem in Morocco because of its frequency and severity. (2) Hydatid disease typically manifests itself in the liver or lungs; however, once in ten, the embryo will lodge in any tissue or organ of the human body (3). Cardiac involvement remains a rare condition, it constitutes 0.5 to 2% of all visceral locations. Despite this rarity, its evolution is serious and latent because of the risk of complications, which can be revealing.

Case report

We report the case of a 54-year-old patient who had had an intermittent history with dogs, without any other particular history, who has presented for 1 month with asthenia and weight loss, without cough or fever, which has progressed to the onset of precordialgia. both during effort and at rest, motivating the patient to consult cardiology for treatment. Clinical examination found good blood pressure, with a heart rate of 98 b / min. the cardiovascular examination finds well-perceived heart sounds at a regular rate, without murmur, pericardial friction, or added noises. The electrocardiogram shows a regular sinus rhythm, with the axis in place, without repolarization, conduction or rhythm disturbances. Chest x-ray

Shows a heart and lung silhouette. Cardiac echocardiography showed normal sized cardiac chambers, and normal LV and RV systolic function, with a large hyperechoic mass 45x62mm in diameter in latero-LV and latero-LA. It was completed by a thoracic CT which objectified a cardiac mass of tissue density with calcified wall without marked enhancement after injection of the contrast product, measuring 80x68 mm, suggesting a pseudo-tumor hydatid cyst. Forward, it bulges into the left heart chambers. Medially, it comes into contact with the descending thoracic aorta with a border of separation. Outside it comes in close contact with the visceral pleura. At the bottom it comes into contact with the diaphragm without a clear border of separation. It stays away from the esophagus, pulmonary veins, trunk of the pulmonary artery, and right and left pulmonary arteries. To determine the relationship with the coronary arteries, it was desirable that the patient do a coroscan, but she did not do so due to lack of means. The patient performed a laboratory workup which showed an inflammatory syndrome, and hypereosinophilia, with hydatid serologies which were inconclusive. She was subsequently referred to the cardiovascular surgery department for surgery. The patient performed a laboratory workup which showed an inflammatory syndrome, and hypereosinophilia, with hydatid serologies which were inconclusive. She was subsequently referred to the cardiovascular surgery department for surgery. The patient performed a laboratory workup which showed an inflammatory syndrome, and hypereosinophilia, with hydatid serologies which were inconclusive. She was subsequently referred to the cardiovascular surgery department for surgery.

Discussion:-

The hydatid cyst of the heart (HCC) is secondary to the intracardiac development of Echinococcus granulosis. The intermediate host of this parasite is sheep. Man, the definitive host, infests himself by ingesting embryonated eggs which soil a dog's coat or food. The embryo, released in the stomach, passes through the wall of the intestine, the hepatic and pulmonary filter to reach the left heart. From there, it can be distributed into the coronary circulation and finish its course in the myocardium where it becomes encysted (4).

In the literature, hydatid involvement in the vessels at the base of the heart is exceptional. In our case, the originality is the location at the level of the ascending aorta. In humans, the organs most often affected are the liver and lung (5) Cardiac involvement is rare and LV is the most frequently reported location (46%), followed by the right ventricle (21%), the interventricular septum (19.3%), the right atrium (9.7%), the left atrium (1.6%) and the Valsalva sinus (1.6%) (5). In our case, the cracking of the left ventricular cyst is at the origin of the pericardial attack and of the root of the aorta by contiguity.

This scarcity is explained on the one hand by the need for the scolices to cross hepatic and pulmonary barriers before reaching the coronary circulation and on the other hand by the natural resistance to the implantation of viable cysts offered by the contractions. cardiac1,6. The right heart chambers are less frequently affected than the left chambers (15 to 31% versus 64 to 89%) because of their thick myocardium and their less vascularity (6). Due to the thinness of the muscle wall and the low pressure regime in the right chambers, right heart HCC often has a superficial subendocardial development3,4. This explains the greater frequency of endocavitary rupture of the hydatid cyst of the right ventricle (88%) compared to that of the left ventricle (37%) (5-6).

The clinical presentation of HCC is not very specific, it can vary according to the number, the size, the site and the integrity of the cysts (7). The clinical picture may be confusing, simulating, as in our case, a clinical and electrical coronary syndrome in a patient with cardiovascular risk factors, by compression of the small coronary branches by the tumor process.

There is no specific biological test for cardiac hydatidosis. Positive serological tests are a sign of presumptive hydatidosis, negative tests do not rule out the diagnosis because certain immune responses may escape these tests (8).

The non-invasive and easily reproducible TTE remains a reliable tool for the diagnosis of hydatid cysts with a typical echocardiographic appearance and for the postoperative follow-up of patients (9). The contribution of transesophageal ultrasound (TEE) has been emphasized in intra-auricular locations (9-10). Cross-sectional imaging (CT and MRI) plays an important role in the diagnosis of atypical cystic formations, the relationships with adjacent structures and the assessment of the extension of hydatid disease in all organs (10).

Complications can be fatal, such as ischemic syndrome and arrhythmias by compression of small coronary vessels and conduction tissue, heart failure, pulmonary embolism, systemic and anaphylactic shock by intracardiac rupture of cysts, tamponade by exudative pericardial reaction (11) .

Treatment of KHC should be prompt. Its goal is sterilization and ablation of the parasite, reduction of the size of the cysts and the viability of the parasites, thus preventing relapses and hydatid dissemination and finally preserving the vital prognosis (12).

It is based on surgical excision. Intraoperative surface ultrasound is of great help to the surgeon; it allows a definitive diagnosis and helps to determine the first area of the cyst. Cardioplegia is advised to facilitate excision of the cyst and to minimize the risk of accidental spillage of intracavitary fluid (13).

The surgical strategy, approach and cannulation, depends on the location of the cysts and any pulmonary associations. If the right thoracotomy allows the excision of the associated pulmonary cysts, the sternotomy remains the ideal approach because the only guarantee of a complete myocardial and pericardial assessment (13-14).

The surgical resection of the cardiac hydatid cyst must be done under extracorporeal circulation (ECC), because of the great risk of dissemination and systemic embolism. In addition, aortic clamping allows optimal exploration of the heart chambers. Some authors recommend double clamping of the aorta and the pulmonary artery (in the case of a right cardiac cyst) to prevent the dreaded systemic and pulmonary embolic complications (15).

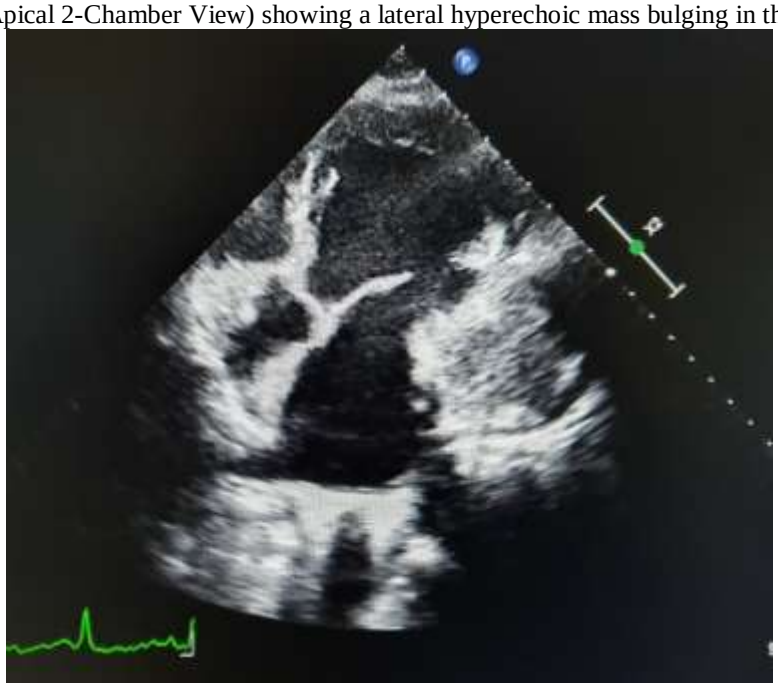
Preoperative adjuvant chemotherapy is recommended to partially desterilize the cyst and reduce the risk of dissemination during the operation. According to a 2016 study of 17 operated cases, all patients were put on Albendazole at least two weeks before the operation (except for one patient operated on urgently and one in whom the discovery was fortuitous) (15).

Thus, at least 2 postoperative cures are necessary To avoid recurrences, due to the risk of embolization and implantation of the cyst in another territory, and if rupture of the cyst or release of hydatid material during the operation has taken place. (15).

Evolution after treatment is sometimes marked by hydatid recurrence. Indeed, it constitutes the major risk in the long term. In the Turkish series G.ORHAN. However, it should be taken into account that recurrence can manifest up to 10-15 years requiring long-term follow-up (16).

Finally, prophylaxis is an essential pillar to uproot this parasitic disease at the level of a population, especially at the level of an endemic area. It consists of ensuring the slaughter of animals that meets established health standards, Fighting stray dogs and treating parasitized dogs, opting for fenced pastures in order to ensure the protection of sheep, instituting acts of awareness, fight and monitoring against hydatidosis, banishing overcrowding humans and dogs likely to be parasitized, treating domestic dogs, and finally adopting strict hygiene rules for washing hands, food, fruits and vegetables (17-18) .

Figure 1:- ETT (Apical 2-Chamber View) showing a lateral hyperechoic mass bulging in the OG and the LV.



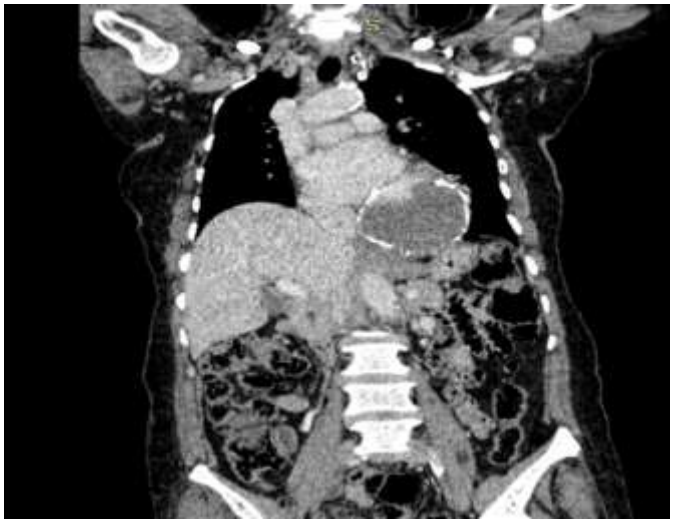


Figure 3:- Thoraco-abdominal-pelvic CT scan (frontal view) showing the mass bulging out in the left cavities.

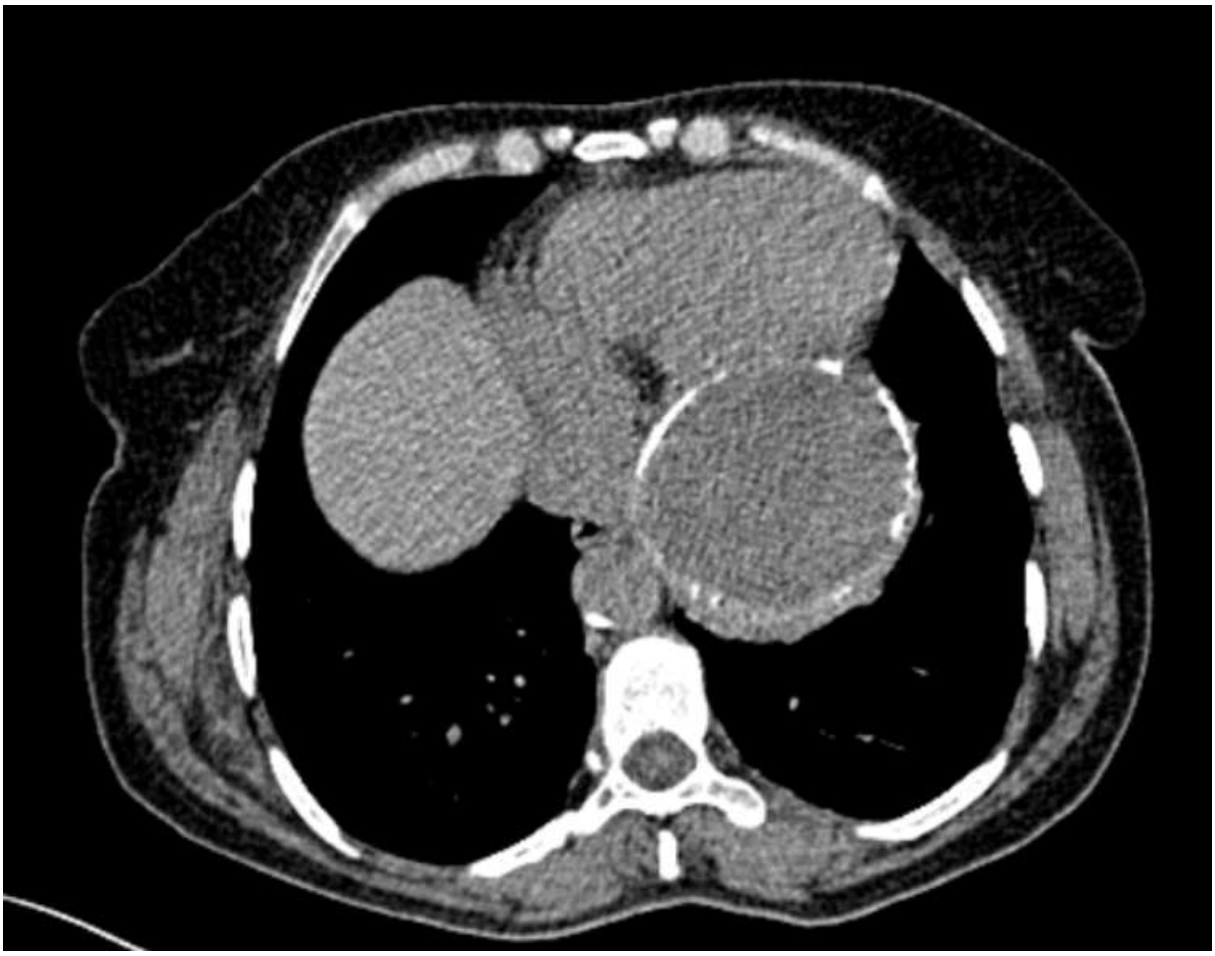


Figure 4:- Thoracic CT (without injection of the contrast product) showing the mass suspecting a cardiac hydatid cyst, stuck to the left cardiac chambers.

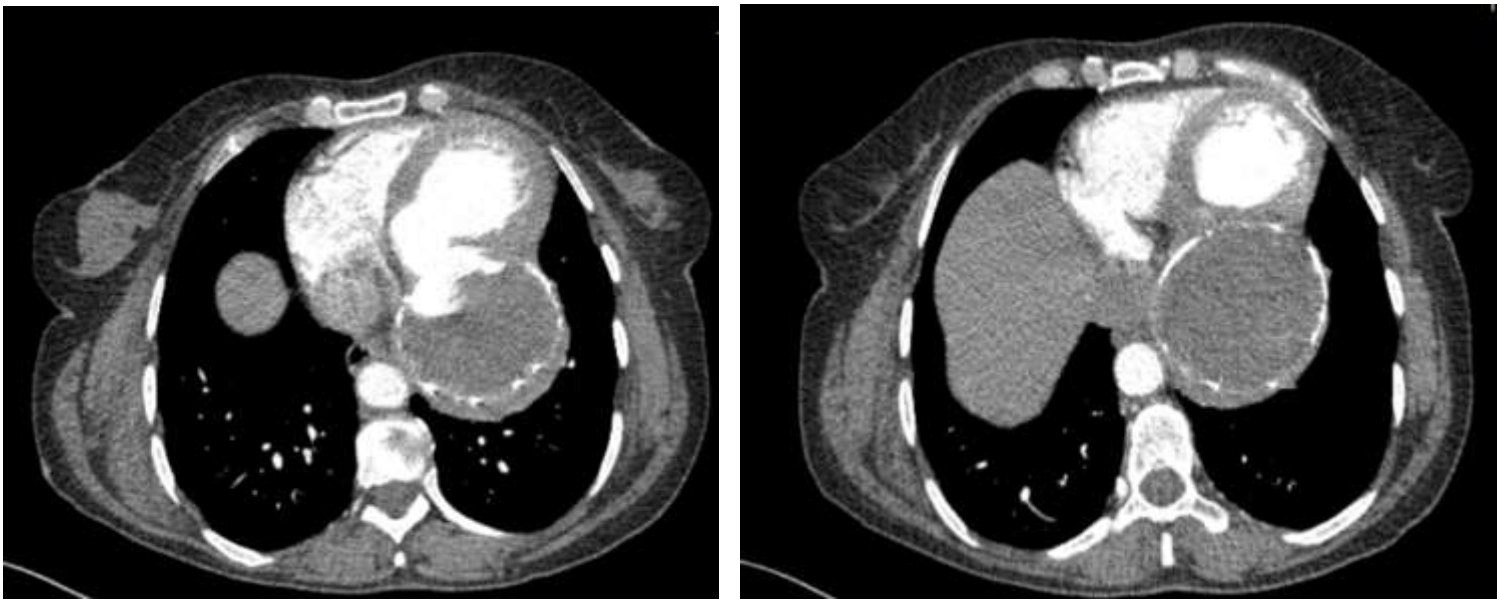


Figure 5:- Thoracic CT (after injection of the contrast medium) showing the patient's mass.

Conclusion:-

Cardiac localization of hydatid disease is rare. Transthoracic cardiac ultrasound, CT scan or cardiac MRI are of great diagnostic value.

The seriousness of the complications requires rapid treatment.

The first-line treatment is surgery and the postoperative results are encouraging. Treatment with Albendazole is prescribed postoperatively to prevent recurrence.

Prophylaxis remains the pillar of protection against this pathology.

References:-

[1] Tuncer e, Tas sg, Mataracii, et al. surgical treatment of cardiac hydatid disease in 13 patients. Tex Heart inst J. 2010; 37: 189-93.
[2] demirci s, gunaydin g, dogan KH, Toy H. sudden death due to hydatid cyst rupture located in right ventricle. am J Forensic Med Pathol. 2008; 29: 346-8
[3] orhan g, ozay B, Tartan Z, Kurc e, Ketenci B, sargin M, demirtas MM, aykutsa. Surgery of cardiac hydatid cysts. Thirty-nine years of experience. annCardiolangéiol. 2008; 57: 58-61
[4] Elkarimi S, et al. Tamponnade revealing an intrapericardial hydatid cyst - one case. Ann Cardiolangeiol (paris) 2014
[5] Nurkalem Z, Atmaca H, Kayacioglu I, Uslu N, Gorgulu S, Eren M. Hydatid disease involving the left ventricle: a case of unusual combination. Int J Cardiol. 2006 Sep 20; 112 (2): e30–2. Epub 2006 Jul 20.
[6] Niarchos C, Kounis GN, Frangides CR, Koutsojannis CM, Batsolaki M, Kounis NG. Large hydatic cyst of the left ventricle associated with syncopal attacks. Int J Cardiol. 2007 May 16; 118 (1): e24–6
[7] Baqué J, Huart V, Pierrot JM, Louail B, Grinda JM, Sapoval M, Mousseaux E. Hydatid cyst of the interventricular septum of the heart: appearance in multibracker CT and MRI. J Radiol. 2003; 84 (5): 614–6
[8] Demirci S et al. Sudden death due to hydatid cyst rupture located in right ventricle. Am J Forensic Med Pathol 2008; 29: 346-8.
[9] Tuncer E et al. Surgical treatment of cardiac hydatid disease in 13 patients. Tex Heart Inst J 2010; 37: 189-93
[10] Vanjak D, Moutaoufik M, Leroy O et al. Cardiac hydatidosis: contribution of magnetic resonance imaging. About a case. Arch Mal Coeur 1990; 836: 1739-42. 5. 6.
[11] Demirci S, Gunaydin G, Dogan KH, Toy H. Sudden death due to hydatid cyst rupture located in right ventricle. Am J Forensic Med Pathol 2008; 29: 346-348.
[12] Maroto LC, Carrascal Y, López MJ, et al. Hydatid cyst of the interventricular septum in a 3.5-year-old child. Ann Thorac Surg 1998; 66: 2110-2111. 7 ..
[13] Engin G, Acunas B, Rozanes I, Acunas G. Hydatid disease with unusual localization. Eur Radiol 2000; 10: 1904-1912
[14] Aubry P (2013) Hydatidosis or hydatid cyst; News 2013. Méd Trop 4–5.
[15] Challaoui M, Bouhouch R, Akjouj M, et al (2003) Pericardial hydatidosis: about 3 observations. J Radiol 84 (3): 329–31.
[16] El Karimi S, Ouldelgadia N, Gacem H, et al (2014) Tamponade revealing an intrapericardial hydatid cyst a case. Ann CardiolAngeioldoi: 10.1016 / j.ancard.2012.01.003
[17] Peker RO, Sabuncu T, Kumbasar U, et al (2015) A giant hydatid cyst atypically located in the left ventricle. Turk J Pediatr 57 (3): 308–10.
[18] Hagui A, Saidi I, Dahmani R, et al (2012) Incidentally discovered intra-myocardial hydatid cyst. Tunisia Med 90 (11): 829–30.