

## Case Report

### Massive myocardial calcification in 19 years old man

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#### ABSTRACT

We report a case of extensive myocardial calcification in a 19 years old male. This rare condition is associated with metastatic deposition, infarction or other endocrine disorders and in this patient, with childhood history of living in a farm may have been caused by some type of infection. (Rawal Med J 2008;33:260-261).

**Key words:** Myocardium, calcification, asymptomatic, normal coronary artery.

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#### INTRODUCTION

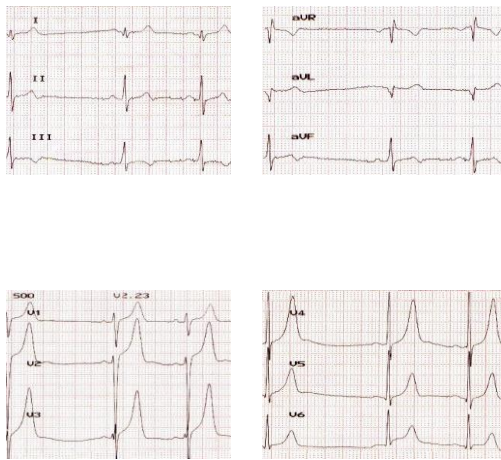
Calcification occurs in the myocardium by either as metastatic calcification which occurs when there is derangement of calcium-phosphate metabolism or as dystrophic calcification which occurs in dead or degenerative tissue.<sup>1</sup> In the presence of normal calcium-phosphate balance, dystrophic calcification may occur in infarcts, ventricular aneurysms and tumors.<sup>2</sup> Mitral annular calcification may also invade the myocardium and caused dystrophic calcification.<sup>1</sup>

#### CASE PRESENTATION

A 19 year-old, male, first time during general physical examination before starting school 12 years ago, was referred to cardiologist because of an abnormal sound in his heart. He had a childhood history of close contacts with animals and no congenital disorder or other sickness. His mother had had a normal pregnancy and vaginal delivery

without any complications. He had no complaint of dyspnea, fatigue, palpitation or other symptoms. In physical exams there was no positive finding and the heart sounds were normal. ECG showed Tall peaked T waves in all pericardial leads and sinus arrhythmia (Fig 1). CXR demonstrated diffuse calcification in myocardium, (Fig 2). Chest CT Scan revealed multiple foci of calcification in interventricular septum, atriums and periventricular area (Fig 3).

**Fig. 1. ECG showing tall T waves.**

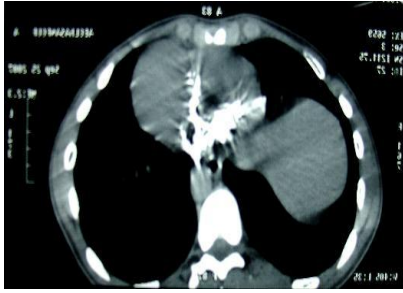


Serum Calcium, phosphorus and creatinine were normal. An Echocardiographic study showed diffuse calcification of all posterior parts of heart include all left atrial wall, IAS, base of IVS and also RV free wall with multiple foci in groove extended to posterior of LV and RV (Fig 2).

## **DISCUSSION**

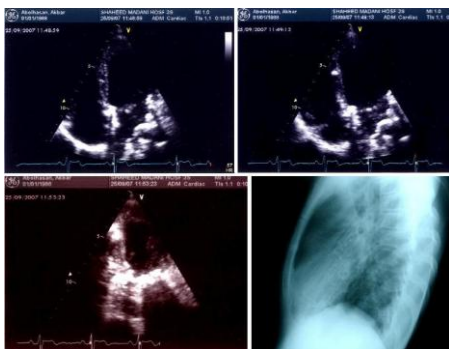
Most reported cases of myocardial calcification have been identified post mortem and have been associated with severe coronary artery disease and myocardial infarction in elderly men.<sup>3</sup> In one study, 14 cases of myocardial calcification were associated with calcified aneurysms.<sup>1</sup> Most were also noted to have associated coronary artery disease and only 4 cases were thought to be metastatic calcification.<sup>1</sup>

**Fig 2. CT scan showing myocardial calcification.**



Cases of myocardial calcification not associated with either metastatic deposition or infarction are rare. A histological study of 6 hearts from infants with congenital heart disease and myocardial calcification revealed that foci of calcification were surrounded by normal-appearing myocardial tissue, ischemic myocardial tissue, or both.<sup>2</sup> Prenatal cardiac disease and trauma might account for the presence of myocardial calcification.<sup>2</sup> In another study, one case was associated with Bicuspid aortic valve and the suggestion was made that the severely calcified and stenotic valve could have acted as starter from which calcium spreads to adjacent tissue.<sup>1</sup> In 2 other cases of particular interest, an extensively calcified myocardium and normal coronary artery with history of episodes of rheumatic fever were reported.<sup>1</sup>

**Fig. 3. Echocardiograph and CXR showing calcification.**



Chronic hypercalcemia<sup>4</sup> and myeloproliferative disorders<sup>5</sup> have been associated with accelerated deposition of calcium in the cardiac annuli and endocardium. Myocardial damage is probably sufficient to elicit ectopic calcification which simply represents a non specific reaction to injury from any possible cause.<sup>1</sup> This patient's childhood history of contacts with animals probably caused some kind of infection and myocarditis, which resulted in subsequent extensive myocardial calcification. He should be followed periodically to assess any hemodynamic changes which may develop over time.

## REFERENCES

1. Barnard DC, Pape L, Missiri J. Massive myocardial calcification and normal coronary arteries. *Texas Heart J* 1985;12:363 .
2. Topaz O. Myocardial calcifications in infants with congenital heart disease. *Pediatr Cardiol* 1986;7:75.
3. Young-Sup Y, Park JS, Tkebuchava T, Luedemman C, Losorodo D. Unexpected severe calcification after transplantation of bone marrow cells in acute myocardial infarction. *Circulation* 2004;109:3154.
4. Roberts WC, Waller BF. Effect of chronic hypercalcemia on the heart. *Am J Med* 1981;71:371.
5. Khouzam NR, Shaikh K, Ivan A. Left ventricular endocardial calcification in a patient with myeloproliferative disease. *Southern Med J* 2005;98:942.