INTRODUCTION
Calcified amorphous tumour (CAT) of the heart is a rare non-neoplastic cardiac lesion. The term was first used by Reynolds et al. in 1997.1 Under the microscope, CAT appears as a calcified nodule in a background of amorphous fibrinous degeneration with areas of focal chronic inflammation. Surgical removal of the lesion with histopathological examination is necessary for exact diagnosis and to differentiate it from other lesions of the heart. It is a rare entity and only few cases of CAT are described in literature so far.2-7

We are describing a case of CAT of the right atrium. This case is reported for its rarity as very few cases have been reported in the literature of the subcontinent.

CASE REPORT
A 40-year man presented with 6 years history of shortness of breath on exertion, weakness and perspiration with two episodes of syncope during that period. Routine laboratory investigations including hemoglobin, white blood count, liver function tests, and renal parameters were within normal limits except for low platelet count. The platelet count ranged from 26,000/µl to 54,000/µl. Echocardiography revealed a mobile mass in the right atrium. Abdominal ultrasound showed a congested liver. The clinical diagnosis was right atrial myxoma with thrombocytopenia. The patient underwent cardiac exploration and excision of the mass. Intraoperatively, a mass within the right atrium involving the chordae tendinae of the tricuspid valve and extending into the right ventricle was noted. The platelet count increased to 1,31,000/µl postoperatively. On gross examination, a single gray-white nodule measuring 3.0x2.5x2.0 cm was seen. Cut surface was gray-white with foci of calcifications. Microscopic examination of hematoxylin and eosin (H&E) stained sections showed eosinophilic amorphous fibrin with dense calcification. Multiple sections were examined and they did not reveal any cellular foci of myxomatous tissue. A diagnosis of cardiac CAT was made.

DISCUSSION
Lesions of the cardiac cavity can be neoplastic and non-neoplastic. CAT is a rare non-neoplastic lesion seen in the cardiac cavity; and around 30 cases are reported in literature. Overall, the primary neoplastic lesions of heart are uncommon; and among them, atrial myxoma is the most common.8 Because of CAT’s clinical and radiologic resemblance to the neoplastic masses, especially malignant ones, such as calcified osteosarcoma, it is important to recognise this entity. However, CAT can be diagnosed easily on microscopic examination. CAT has no sex and age predilection. It has been proposed that CAT arises as a mural thrombus, which later becomes organised.1-4 This notion was favoured by hypercoagulability and phosphocalcic metabolism abnormalities in some patients.1,2 However, the exact mechanism still remains to be elucidated. The characteristic morphologic features include dystrophic calcification.
calcification and degenerating eosinophilic fibrin. Rare foci of chronic inflammation can also be seen. CAT mostly occurs in left ventricle as diffusely calcified mass on echocardiography. Cardiac myxomas are, on the other hand, mostly mobile masses in left atrium; but right atrium can be involved and up to 20% of myxomas can show calcifications. Grossly, myxomas are soft, polyoidal, pale lobulated masses attached by a stalk to the septum near the foramen ovale. Microscopically, they are composed of round to polygonal stellate cells, which are surrounded by abundant myxoid stroma. CAT usually causes symptoms of obstruction like syncope, dyspnoea and arterial occlusion. It may sometimes cause recurrent ventricular arrhythmias, but mechanism is unknown. Our case had an unusual finding of thrombocytopenia, which to our knowledge, has not been reported in the literature. Although exact cause of low platelet count in this patient is unknown; but it could be related to mechanical destruction of platelets during blood flow through the atrium. The clinical differential diagnoses of CAT include neoplastic masses like leiomyosarcoma, fibroma, osteosarcoma and myxomas. Some non-neoplastic lesions are also included in the differential, i.e. cardiac thrombi, emboli and vegetations, atrial septal aneurysms, hydatid cyst, calcified tuberculomas, gout, pseudogout, tumour calcinosis, mitral annular calcification and embryonic remnants. Vegetations can be differentiated from CAT, based on their friable nature and presence of inflammatory cells and fibrin. Thrombi, on the other hand, can develop in any site and have laminations (lines of Zahn), which are due to pale fibrin and platelets alternating with darker area due to red blood cells (RBCs). Surgical excision and microscopic examination is the main tool for its accurate diagnosis. Thus, complete excision of an intracardiac mass is recommended to confirm the diagnosis of CAT, except in rare cases when surgical resection is not possible due to diffuse myocardial involvement. However, treatment of choice of CAT is complete surgical resection.

REFERENCES

Figure 1: Gross appearance of specimen showing grey-white surface (Left). Low power view shows fibrinous eosinophilic background with focal areas of calcification (Right). (H&E, magnification x20).

Figure 2: No evidence of myxoma was identified. (H&E, magnification x100).