A Case of Pericardial Lipoma Diagnosed by Noninvasive Techniques

Levent Mehmet Alkan, M.D., Mehmet Metin, M.D.,
Ali Yener, M.D., Levent Gokgoz, M.D.,
Atiye Çengel, M.D., Övsev Dortlemez, M.D.,
and Halis Dortlemez, M.D.

SUMMARY

Intracardiac lipomas that consist of mature fat cells with fibrous and myxoid tissues are regarded as rather rare lesions. The diagnosis may frequently be established during surgical intervention or at autopsy.

The patient presented is a 23-year-old male who had had no complaints. The lesion had been incidentally detected on x-ray examination which had revealed an enlarged heart shadow. His physical examination revealed no abnormality except displacement of the heart to the right and sinus tachycardia.

A solid mass derived from the pericardium was observed on CT scans and echocardiography. On CT scans the mass exhibited a density consistent with a lipoma. The patient was operated on and the mass, which was encapsulated and 19×17×10 cm in size, was removed. Histopathological examination revealed a lipoma.

Key Words:
Pericardial lipoma Computerized tomography Echocardiography

CARDIAC lipomas are rather rare lesions of a benign nature. Although McAllister and Fenoglio reported lipomas to constitute 10.5% of the cardiac tumors in a series of 425 such lesions,1) we have been able to find only 57 individual cases reported in the medical literature. One-fourth of such lesions were localized in the subepicardium2) and they occasionally weighed as much as 2.5 kg.3) The ones located subendocardially and intramyocardially were frequently smaller.4) Valvular localization of such lesions is extremely rare. The real lipomas are encapsulated masses with the macroscopic appearance of mature fat cells together with fibrous and mixed tissues of various degrees. They may also present as lipomatous hypertrophy of the atrial septum and diffuse fatty infiltration of the myocardium; nevertheless,
these forms are not considered to be true neoplasms.\textsuperscript{5,6}

Most of the cardiac lipomas reported were found at autopsy. The first successful removal of an epicardial lipoma was accomplished in 1952,\textsuperscript{7} and of an intracavitary one in 1964.\textsuperscript{8} Some additional cases treated surgically have also been reported.\textsuperscript{9,10}

**Case Report**

A 23-year-old male was referred to our clinic with the incidental finding of an enlarged heart shadow on direct x ray obtained during a routine check-up. The physical examination of this young man who had had no complaints revealed a blood pressure of 120/70 mmHg, with a cardiac rate of 120/min. On percussion an area of dullness over the left lower half of his thorax with decreased expiratory sounds at the same location was detected. The heart sounds were prominent on the midline and at the right side of the sternum, suggesting rightward displacement of the heart. The ECG was normal except for sinus tachycardia. Direct chest radiograms in the PA position exhibited a global enlargement of the heart with smooth edges (Fig. 1), while lateral views demonstrated a lesion posterior to the left ventricle, reaching down to the diaphragmatic arch, with a lower density than that of the heart (Fig. 2). The sizes of the heart compartments and the anatomy of the valves were seen to be normal on echocardiography. Diastolic enlargement of the left ventricle was insufficient because of the external mass. The thick-
ness of the myocardium was normal. The mass was observed to originate from the lateral wall of the left ventricle, protruding into the left lung with a solid echo. These findings implied the presence of a lesion not primarily cardiac in origin. Intravenous digital subtraction angiography was done in order to eliminate an aortic lesion, however it was normal. On computerized tomography a homogeneous mass lesion with a low density and smooth edges, which showed an enlargement in size towards the diaphragmatic surface and

![Fig. 3. Preoperative CT scan of the chest demonstrating the pericardial mass.](image)

![Fig. 4. Postoperative gross view of the pericardial mass.](image)
which caused the upward displacement of the left main bronchus, was observed (Fig. 3). These findings implied the high probability that the mass was benign in nature. Since it demonstrated no contrast enhancement on CT and its density was equal to that of a lipoma, the diagnosis of an intrathoracic lipoma was established and the patient was operated upon. On operation an encapsulated mass with the dimensions of 19×17×10 cm and weight of 580 g, derived from the pericardium (Fig. 4) and showing no invasion to the lung and resembling a lipoma, was totally removed (Fig. 5). Histopathological examination confirmed our diagnosis.

**DISCUSSION**

The symptoms of cardiac lipomas are variable. The most common one is dyspnea, the reason for which is that the tumor, because of its external pressure effect, prevents the filling and emptying of the ventricles. Even though it has been reported in the literature that only small lipomas do not cause dyspnea, the large lipoma in our case did not cause any dyspnea. We can explain the absence of cardiac symptoms in our case by the tumor enlarging towards the lungs.

Preoperative diagnosis of cardiac lipomas is rare. Chest x ray, echocardiography and angiography may permit us to consider the presence of a cardiac mass, but they cannot clearly identify it as a lipoma. However, computerized tomography may confirm the preoperative diagnosis of a cardiac
Thus, in our case, the preoperative diagnosis of a lipoma was made possible by means of CT.

As with other surgically treated lipomas, the lipoma in our case was also stalked. This permitted easy and complete extraction.

Consequently, pericardiac lipomas should be considered in the differential diagnosis of enlarged cardiac borders on telecardiography.

REFERENCES