

A case of lipomatous hypertrophy of the interatrial septum and coronary artery disease

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Introduction

The condition of a large deposit of adipose tissue in the atrial septum or lipomatous hypertrophy of interatrial septum (LHIS) was first described in 1964.¹ It has been reported that LHIS is associated with atrial arrhythmias but its clinical presentation as angina is uncommon. We report such a case here and a short literature review.

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Case report

A 65-year-old woman with heavy, crushing, retrosternal chest pain was admitted to hospital. The chest pain, associated with sweating, was her first ever episode with no prior exertional symptoms, although she had suffered from some dizzy spells and unsteadiness on occasions in the previous 12 months. Her cardiovascular risks included hypertension, hypercholesterolaemia, a family history of ischaemic heart disease and her post-menopausal state. She also had a history of asthma. Her general and systemic examination was unremarkable. Routine blood tests were all normal except that her erythrocyte sedimentation rate (ESR) was 25 mm/hour. Her electrocardiogram (ECG) at admission showed right bundle branch block and inferior T-wave inversion. Troponin I was raised at 0.23 (n=0.01). With a clinical diagnosis she was treated with aspirin, low molecular weight heparin and statins, and subsequently diltiazem and perindopril. No arrhythmia was recorded during admission.

An echocardiograph showed a large echogenic, sessile mass involving the inter-atrial septum and left atrial baso-postero-lateral wall, in addition to mild left ventricular hypertrophy. There was no obvious regional wall motion abnormality. A cardiac thrombus or tumour was suspected and she was anticoagulated for two weeks. A repeat echocardiograph remained unchanged.

With a working diagnosis of atrial tumour, cardiothoracic surgery was performed for exploration. Coronary angiography

had shown a dominant right coronary artery with a 75% mid-vessel stenosis, distal left anterior descending coronary artery disease and a small circumflex. She remained pain-free during her stay and was transferred for right coronary artery grafting along with exploration of the left atrium. During surgery, the atrial septum was significantly thickened and contained fatty tissue, which on examination of frozen sections, was thought to be a benign lipoma or lipomatous hypertrophy. The pathology extended into the free wall of the left and right atrium. No resection was carried out. One week later she was discharged and remained well with no angina or dizzy spells a month after discharge.

Discussion

Lipomatous hypertrophy of the interatrial septum (LHIS) is an uncommon disorder characterised by benign fatty infiltration of the interatrial septum (mostly at the limbus of the foramen ovale),^{2,3} that usually spares the fossa ovalis. The prevalence of LHIS is estimated to be between 1% and 8%. It most often occurs in elderly patients. Microscopically, LHIS is characterised by fat infiltration between the myocardial fibres of the atrial septum.

Although it is histologically benign, LHIS has been associated with various clinical presentations including atrial arrhythmias, syncope and sudden death. LHIS can also create a tumour-like mass, mimicking fat-containing neoplasm, which can arise in the atrial septum, including rhabdomyomas, myxomas, rhabdomyosarcomas, and liposarcomas.

In half of the cases, supraventricular arrhythmias and P wave abnormalities are observed on the electrocardiogram.

LHIS is most often detected as an incidental echocardiographic finding. Echocardiographic criteria for its diagnosis⁴ include:

- Bilobed appearance
- Septal thickness of 15 mm or more
- Exclusion of other causes of atrial septal thickening, such as amyloidosis, surgical patches and tumours.

Shirani *et al.*⁵ examined the morphologic features and the clinical significance of massive fatty deposits in the atrial septum. The thickness of the atrial septum cephalad to the fossa ovalis ranged from 1.5 to 6 cm in 91 patients and was ≥ 2 cm in 80 patients. In these 80 patients, 53 patients (67%) had narrowing of one or more of the four major epicardial coronary arteries; at least 75% was due to atherosclerotic plaque. Thirty-one patients (40%) had atrial arrhythmias – those with larger deposits of fat (atrial septal thickness ≥ 3 cm) had an

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even higher prevalence of atrial arrhythmias (60% vs. 34%, respectively, $p < 0.01$). The atrial septum was significantly thicker in patients with atrial arrhythmia than in those without this (mean 2.9 vs. 2.3 cm, respectively, $p < 0.01$). Of the 28 patients with electrocardiograms available, 20 (71%) showed atrial arrhythmias (9 atrial presystole, 7 atrial fibrillation, 4 atrial tachycardia and 1 junctional rhythm).

Conclusion

Massive fatty deposits in the atrial septum as in lipomatous hypertrophy of the atrial septum are an under-diagnosed condition, frequently associated with atrial arrhythmias and atherosclerotic coronary artery disease. The key to the diagnosis is a high index of clinical suspicion and echocardiography.

Conflict of interest

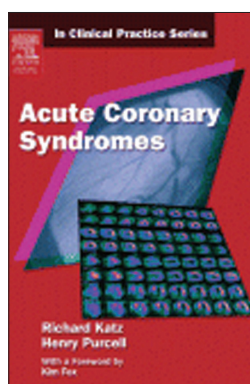
None declared.

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BOOK REVIEW

Book review



Churchill's In Clinical Practice Series: Acute Coronary Syndromes

Authors: Katz R, Purcell H
 Publisher: Elsevier Churchill
 Livingstone, Edinburgh, 2006
 ISBN: 0-443-10295-1
 Price: £15.99

indexed, and the text is unquestionably contemporary, almost trendy.

The book's uniqueness comes from using key messages as quotations on each page. These serve as a guide to the major points, and encourage the reader to search for the evidence that supports the italicised quotations. There is excellent use of current guidelines and pathways. The diagrams and tables are clear and well thought out.

There is a good section looking at case studies. This is helpful and shows the variations of approach, which are both patient-sensitive and disease-specific. This chapter serves to remind the reader that evidence-based medicine has to be applied to individual patients, and that this is the art of cardiology.

The book will appeal to a broad church, from cardiologists to medical and nursing students, but it is equally easily accessed by specialists and generalists alike. This small book gives an excellent one-stop shop for headlines and a brief explanation of the evidence base on which these headlines are based. It is a welcome addition to the clinician's library.

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In this day and age of web-based information access and evidenced-based medicine, how refreshing it is to find an easy-to-read, up-to-date and brief review of all that the working physician needs to know about acute coronary syndromes in the first part of the 21st century. The breadth of content is broad, extending from prevention to primary percutaneous coronary intervention, from clinical presentation through mechanisms, to the therapeutic interventions available. It is straightforward to find the information being sought on a specific search and it is remarkably comprehensive. The book is very well referenced and

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