

Complete atrioventricular block due to giant cell myocarditis

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Summary

A rare instance of complete atrioventricular block due to giant cell myocarditis with histopathological correlation is documented. The haemodynamic changes and echocardiographic findings are described.

Introduction

Saltykow described giant cell myocarditis in 1905. Atrioventricular block is an unusual complication and only one such instance has been described in the English literature (Collyns, 1959). A second patient with a similar complication is now reported.

Case report

A 41-year-old man was found to have cardiomegaly on routine chest radiography in 1974. In January 1977 he developed epigastric discomfort and effort dyspnoea; in July 1977, electrocardiography showed complete atrioventricular block. In spite of pacing and anti-failure therapy the patient showed no improvement. Twenty days after admission he suddenly developed spontaneous bowel perforation and died.

At post-mortem the heart was enlarged and weighed 550 g. All the chambers and the pulmonary outflow tract were dilated. The myocardium of both ventricles showed patchy areas of pale discoloration with thinning of the walls. There were multiple aseptic mural thrombi in both ventricles and the right atrial appendage. The coronary arteries were patent. Recent multiple pulmonary emboli with infarction of the middle and lower lobes of both lungs were present.

Histology of the heart showed patchy replacement of the myocardium by collagen-rich fibrous tissue infiltrated by lymphocytes and multinucleated giant cells. Some giant cells contained asteroid bodies while others showed cytoplasmic vacuolations. No granuloma formation was noted. Similar lesions involved the sino-atrial node (Fig. 1), atrioventricular node

(Fig. 2) and conducting fibres. Histological examination of the heart for acid fast bacilli, fungi, *Entamoeba histolytica* or other parasites were negative. Giant cells were not found in any other organ apart from the heart.

The liver showed chronic passive venous congestion. Perforation of the caecum, and faecal peritonitis were secondary to intestinal amoebiasis.

Discussion

Giant cell myocarditis is a condition where there is histological evidence of myocarditis of unknown cause with multinucleated giant cells with or without granuloma formation (Collyns, 1959; Dilling, 1956; Gubbay, 1961; Kean and Koekenga, 1952; McCrea and Childers, 1964; Palmer and Michael, 1965; Rab Choudhury and Choudhury, 1963). Various descriptive terminology such as idiopathic giant cell myocarditis (Gubbay, 1961); giant cell granulomatous myocarditis (O'Donnell and Mann, 1966); granulomatous myocarditis (Long, 1961), Fiedler's myocarditis (Long, 1961; Parrish, 1965), have been used as the aetiology and pathogenesis are not clear (Pyunn *et al.*, 1970).

Clinically, patients reported have presented with sudden death, congestive heart failure or cardiac arrhythmias. Of specific interest in this case is the association of complete atrioventricular block and the histopathological changes in the atrioventricular node and the conducting system which revealed replacement by the abnormal tissue. Histopathological correlation of atrioventricular block in giant cell myocarditis has been previously reported in only one other case (Collyns, 1959). Other electrocardiographic changes reported include non-specific ST depression and T wave changes (Gubbay, 1961; Palmer and Michael, 1965; Rab *et al.*, 1963); right bundle branch block associated with sinus tachycardia (Rab *et al.*, 1963) and in another case report the cause of death was

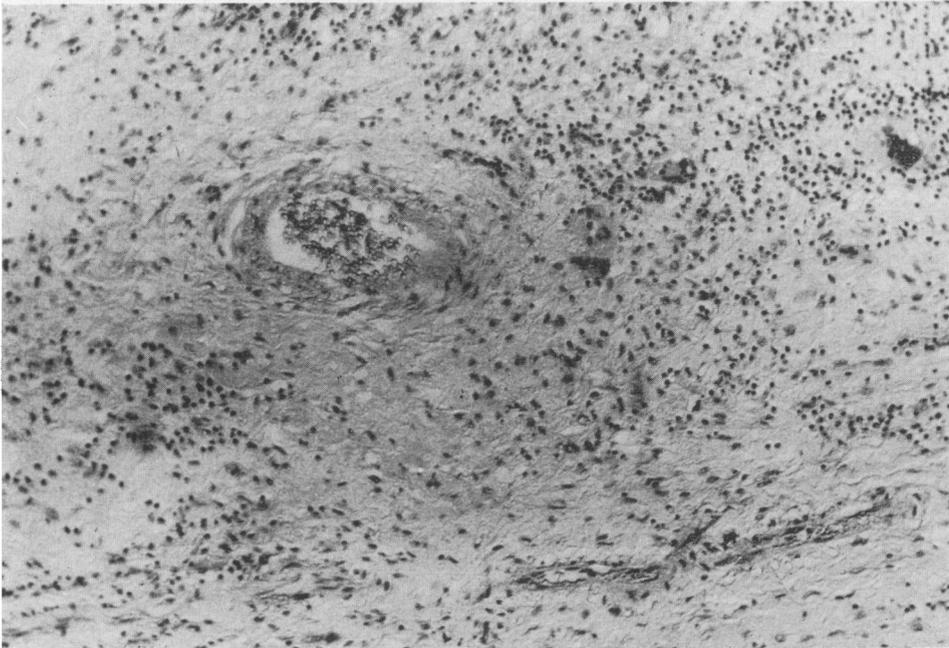


FIG. 1. Photomicrograph of the heart showing lesions involving the sino-atrial node.

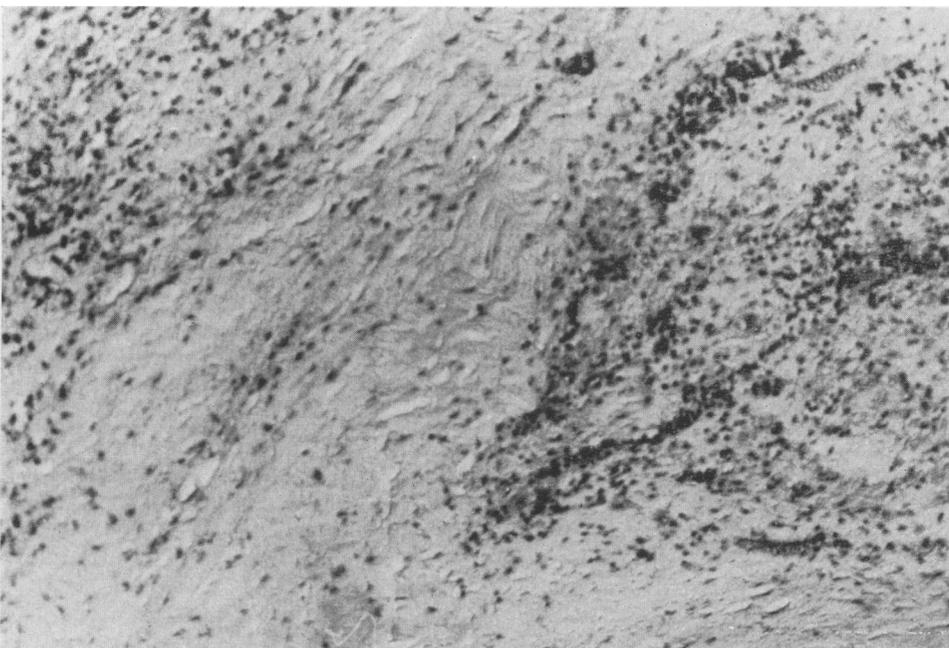


FIG. 2. Photomicrograph of the heart showing lesions involving the atrioventricular node.

indicated as 'heart block, sino-auricular standstill, Adam-Stokes syndrome' but the electrocardiogram was not available (Kean and Koekenga, 1952).

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