

GRANULOMATOUS AORTITIS AND PULMONARY TRUNK ARTERITIS: (A Case Report)

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Summary

A case of granulomatous inflammation of aorta and pulmonary trunk in a 14 year old African female is presented. She also had bilateral tuberculous bronchopneumonia and extensive tuberculosis of ileum. Relevant literature relating to granulomatous aortitis is reviewed. The rarity of similar lesion in the pulmonary trunk is emphasized.

Introduction

Granulomatous aortitis is relatively an uncommon disorder. Its histology and association with active tuberculosis in other organs are well documented (Kinare 1970). The granulomas are said to be due to direct infection of the aortic adventitia from para-aortic tuberculous lymph nodes or less commonly, due to hematogenous embolisation of the vasa vasorum; (Volini et al, 1962). Alternatively, the occurrence of a hypersensitivity type of reaction has been postulated to explain pathogenesis of the aortic lesions especially because of frequent failure to demonstrate the M. tuberculosis (Kinare, 1970).

We report a case of granulomatous aortitis and pulmonary trunk arteritis in association with pulmonary and intestinal form of active tuberculosis. We are not aware of any report of granulomatous involvement of the pulmonary trunk, either singly or in combination with granulomatous aortitis.

Case Report

A 14 year old African female was admitted as an emergency to the paediatric ward of the University Teaching Hospital, Lusaka, Zambia, in an almost moribund state. History obtained from the mother suggested that she was generally unwell for some months. Of late, she developed headache, fever, abdominal pain and diarrhoea with marked anorexia. Her condition apparently deteriorated two days prior

to her hospitalisation. Physical examination revealed a grossly emaciated toxic looking and dehydrated female. She was markedly dyspnoeic with barely palpable pulse and unrecordable blood pressure. The abdomen looked distended with vague generalised tenderness. There are bilateral coarse crepitations over both lungs. No investigations could be performed as she died shortly after admission.

Autopsy Findings

The external examination revealed a markedly emaciated body of a young girl with pedal edema. The internal examination findings consisted of bilateral bronchopneumonia and multiple pulmonary abscesses, several transverse ulcers and strictures in the ileum enlarged mesenteric lymph nodes containing caseation necrosis and variable degree of congestion in the rest of the organs. The ulcers in the small intestine were large with irregular outline, undermined edges and raised nodular margins; the serous coat overlying the ulcers was thickened and opaque with visible tubercles. The heart showed right ventricular dilatation. The pulmonary trunk (FIG 1) contained a firm, nonulcerated and nodular lesion, 0.7cms in diameter; it was situated 1.3cms distal to the pulmonary valve. Wall of the ascending portion of the aortic arch was diffusely thickened. Aortic valve and coronary arteries were grossly unremarkable.

Histology

Sections from lungs, small intestine and mesenteric lymph nodes showed characteristic features of tuberculosis with demonstrable M. tuberculosis by Z.N. staining.

Section's across the nodule from the pulmonary trunk (FIG 2) and the thickened portion of the ascending aorta (FIG 3) showed identical histologic features characterised by well defined granulomas were observed in the media and intima which were variably destroyed. The vasa vasorum showed changes of

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endarteritis obliterans. The aortic adventia, in addition, revealed markedly increased collagen. Z.N. Staining failed to reveal the M. tuberculosis. Special staining for spirochetes and fungi was noncontributory.

Discussion

In the present case failure to demonstrate the tubercle bacilli does not necessarily exclude the tuberculous nature of the aortic lesions. In the absence of the paraaortic tuberculous lymphadenitis a direct spread is unlikely. On the

other hand the probable origin of these granulomas by hematogenous seeding of the tubercle bacilli cannot be altogether ruled out; autopsy finding of the presence of necrotic blood vessels in the pulmonary tuberculous lesions enhances the likelihood of such a spread. A Hypersensitivity type of response to active tuberculosis in lungs and intestine is an alternative theory to explain the aortic lesions. The apparent rarity of the granulomatous pulmonary trunk arteritis either singly or in association with aortitis, however, awaits a meaningful explanation.



Fig. 1. A nodular, non-ulcerated and sessile lesion is seen projecting from the intimal surface of the pulmonary trunk. (Aorta is not seen in this view).

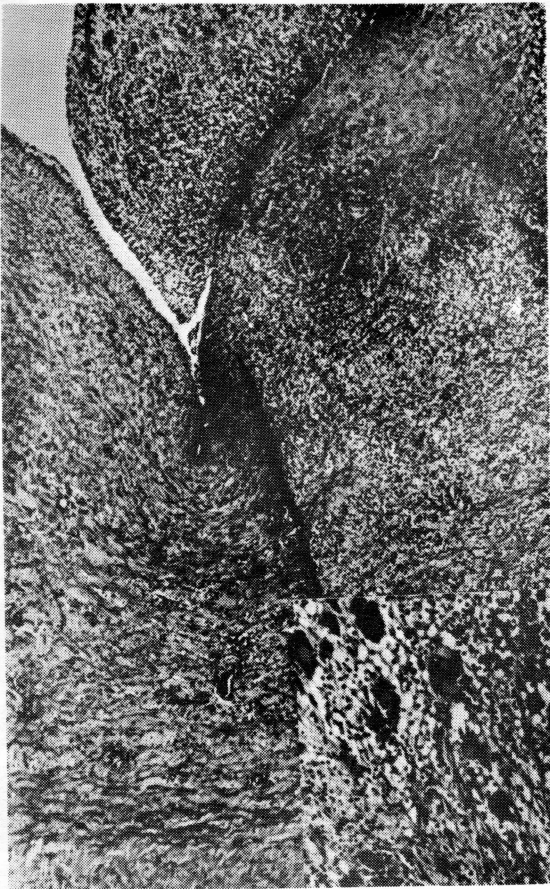


Fig. 2. Scanning micrograph to show the nodular lesion in the pulmonary trunk (H & E x 100). The inset delineates the granulomatous reaction (H & E x 100).

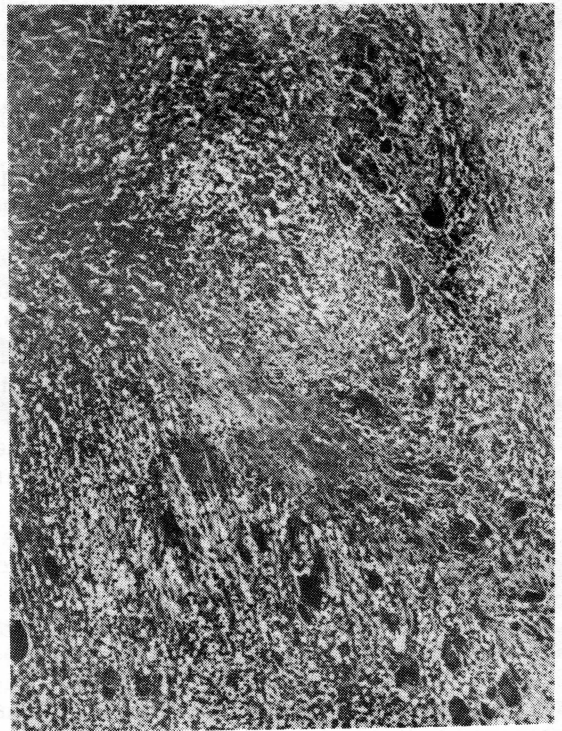


Fig. e. Section from the thickened portion of aorta shows extensive granulomatous reaction with necrosis (H & E x 100).

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