

A CASE OF RHEUMATIC AORTITIS WITH EARLY LESIONS
IN THE MEDIA*

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In a previous paper (1924)¹ dealing with the lesions of the aorta in rheumatic infections, two types of pathologic change were described as characteristic: the occurrence of Aschoff bodies or isolated Aschoff cells in the adventitia; and the presence of flame-shaped scars about the nutrient vessels of the media. In most of the cases examined, these medial cicatrices were dense and acellular, and were interpreted as healed or healing lesions. The material then available thus offered no opportunity to decipher the earlier changes leading up to the formation of the scars.

A case recently studied, in which the aortic lesions were acute and of unusual intensity, illustrates an earlier stage in the development of the medial alterations and is reported for that reason.

S. C., age 9, white, male (history 48682, autopsy 9627), was first admitted to the Presbyterian Hospital on Jan. 10, 1921, with painful joints in the arms and legs following exposure to cold three weeks previously. The course thereafter until his death on April 17, 1925, was typical of rheumatic fever with remissions, but with progressive involvement of the heart and pericardium. Blood cultures on his first admission were sterile.

The anatomic findings may be summarized as follows: *rheumatic endocarditis (mitral and aortic valves, and left auricle); rheumatic myocarditis; rheumatic pericarditis, organizing; serofibrinous pleurisy; cardiac hypertrophy and dilatation; chronic passive congestion of viscera; ascites.*

Only the aorta need be described minutely; grossly it shows nothing abnormal. Microscopically, however, striking changes are found, both in the adventitia and in the outer two-thirds of the media. The endothelial cells of the vasa vasorum are swollen. About these vessels are collections of small round cells and plasma cells together with many polymorphonuclear leucocytes. The lumen of some of the smaller vessels is filled with polymorphonuclears. In many parts

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of the adventitia, the cellular infiltration is diffuse and intense, with the polymorphonuclear leucocyte as the predominant cell.

In areas where the infiltration of wandering cells is less profuse, the connective tissue has taken on a peculiar appearance: the collagen bundles are swollen, and between them the connective tissue cells have somewhat the character of fibroblasts with basic staining cytoplasm and swollen nucleus. Multinucleated cells are not uncommon.

In none of the numerous blocks studied are there found definite Aschoff bodies.

The medial changes are essentially of the same character as those described in the adventitia, save that their distribution appears to be determined by the course of the nutrient vessels. The nutrient arterioles are thick walled, due in part to the swelling, and in some instances to the heaping up of the endothelium; in part also to the cellular infiltration and perhaps edema of their walls. About the nutrient vessels, pushing apart the adjacent elastic fibers, are profuse collections of cells, amongst which one can distinguish small lymphoid elements, polymorphonuclear leucocytes (often in considerable numbers) and larger elements with vesicular nuclei, prominent stellate nucleolus and strongly basophilic cytoplasm (Fig. 1). With the methyl green-pyronin stain, these larger cells react as do the Aschoff cells. Often these are aligned in rows between the elastic fibers (Fig. 2). A few multinucleated cells are seen.

The collagen fibers within and adjacent to the cellular infiltrations are swollen and more intensely stained with eosin or fuchsin than the normal collagen of the aorta. The elastic lamellae in these early cellular lesions are displaced, but not destroyed.

No bacteria could be demonstrated. Histologic study of the other tissues in this case, it should be stated, give no indication of a bacterial infection. The character of the valvular and myocardial disease is in all respects typical of rheumatic infection, and there are no embolic lesions.

A study of this case supports the view previously expressed that the perivascular medial scars are the sequel of an earlier focal perivascular inflammatory lesion.

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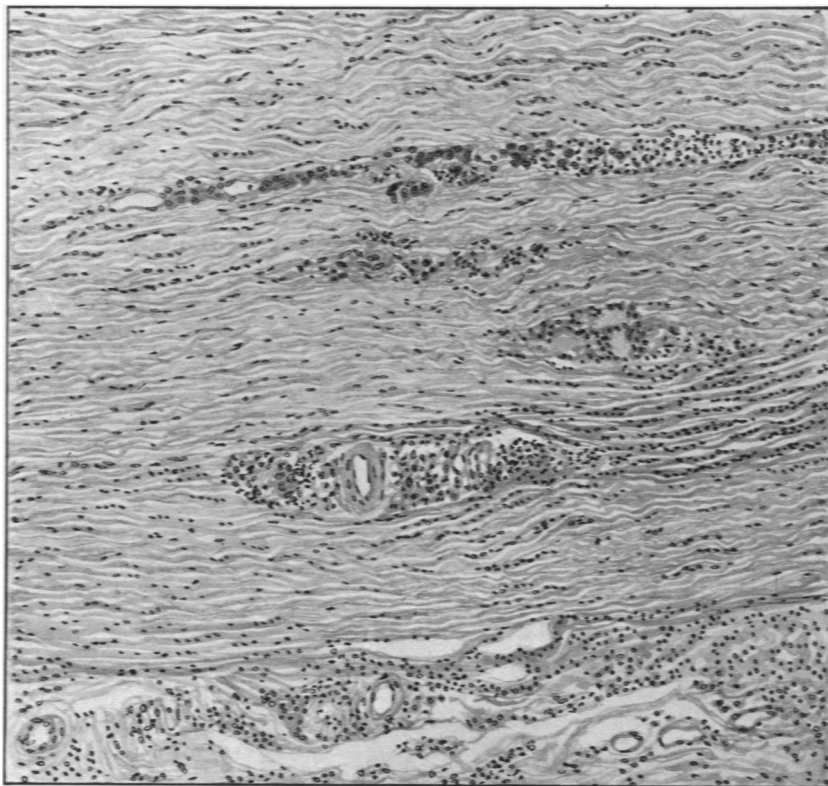
REFERENCE

1. Pappenheimer, A. M., and VonGlahn, W. C. *J. Med. Res.*, 1924, xliv, 489-505.

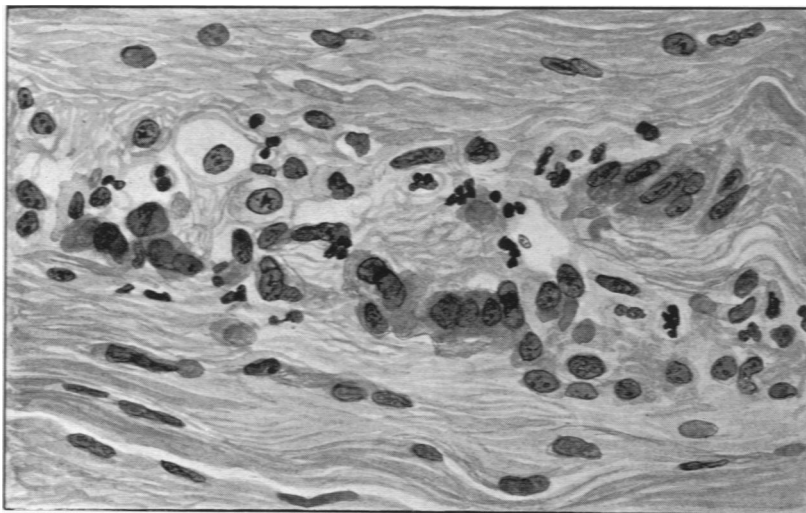
DESCRIPTION OF PLATE

PLATE 10

- FIG. 1. Acute rheumatic aortitis. Cellular infiltration about penetrating vessels in media.
- FIG. 2. Acute rheumatic aortitis. Polymorphonuclear leucocytes and large cells with basophilic cytoplasm about penetrating vessels in media. Some of the large cells have multiple nuclei.



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