RENAL TUBERCULOSIS IN ZAMBIA: OBSERVATION ON 900 CONSECUTIVE AUTOPSIES

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Summary

The findings of a retrospective study of 900 consecutive autopsies in the University Teaching Hospital, Lusaka undertaken in order to determine the incidence of renal tuberculosis among indigenous Zambians have been stated. In all, a diagnosis of tuberculosis renal or otherwise was made in 70 (7.7%) cases; renal involvement was present in 18 (25.7%). There was not a single case of classical ulcerocavernous type of renal lesions. It has been suggested that renal tuberculosis in Zambians mainly occurs secondary to extensive miliary spread in advanced pulmonary tuberculosis; the affected person usually succumbs to the disease prior to the occurence of any renal symptoms.

Introduction

Physicians practicing in a sub-saharan African environment seldom encounter cases of urinary tuberculosis in numbers. Whether this clinical infrequency, in the face of widespread pulmonary, abdominal and skeletal forms of the disease is truly representative of its real incidence or merely reflects one's failure to diagnose such cases remains uncertain. The difficulties in isolating tubercle bacilli from infected urines are well known; the best results are usually obtained when 3 consecutive specimens are examined both by guinea pig inoculation and artificial culture (Gow, 1971). As only a small minority of hospitals in this region are equiped to undertake such investigations, one would be tempted to attribute underdiagnosis of renal tuberculosis as an important factor for its clinical rarity. On the other hand, the limited publications from this area on this subject appear to suggest a truly infrequent involvement of the kidneys (Middlemiss, 1972, Awori, 1979). There is no published account on the incidence of renal tuberculosis in Zambia, a country with widespread pulmonary tuberculosis. The following study on 900 autopsies has been undertaken with a view to determining the approximate incidence of renal tuberculosis in Zambia.

Materials and Methods

The records of 900 consecutive post mortem examinations, excluding medico-legal and neonatal autopsies, performed during a 4½ year period (January, 1980 — June, 1984) in the University Teaching Hospital, Lusaka, have been studied. The autopsy reports, besides the cause of death, also contained a short medical history along with a description of the gross and histological appreárances of both kidneys and other important organs. The slides of all cases with the histological diagnosis of tuberculosis, renal or otherwise, were further reviewed. Further sections from the kidney blocks of all cases diagnosed to have renal tuberculosis were prepared for ZN and reticulin stains.

Findings

Autopsy diagnosis of tuberculosis was made in 70 (7.7%) cases; the disease having directly contributed to the death of all these patients. Renal tuberculosis (Fig. 1) was present in 18 (25.7%) cases; bilateral in 10. Their ages ranged from two months to 60 years (average 35 years) with an overwhelming male predominance (M:F = 4.5:1). There was not a single case where the kidneys alone were dominantly involved; advanced pulmonary tuberculosis was present in all cases (Table). None of the affected kidneys demonstrated any significant cortical scarring and their weight remained within normal limits. Grossly, the lesions mainly consisted of minute and discrete areas of

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caseation necrosis randomly distributed in the renal parenchyma, which on occasions coalesced but never attaining a size larger than 1cmx0.5cm. Microscopically, the lesions consisted of an area of central necrosis surrounded by epithelioid, Langhans giant and chronic inflammatory cells (Fig. 2). Reticulin fibres were present only at the periphery of the lesions. Acid fast baccilli could be demonstrated in 4 cases (Fig. 3). None of the 16 patients appeared to have presented with symptoms related to the involvement of the kidneys.

Discussion

One may question the accuracy of determining the incidence of a disease in a community entirely on the basis of autopsy studies alone; as such examinations, especially in this geographical area are undertaken only on a small minority of total hospital deaths. The duration of this study (4½ years and the large number of autopsies reviewed (900) however, should minimise any doubt about the validity of the result of this study. Moreover, the University Teaching Hospital also acts as the National Referral Centre and receives patients from all sectors of the country. An important finding of this review is the emergence of the fact that as much as 7.7% of all deaths were directly due to tuberculosis, an indication of widespread prevalence of this disease in Zambia. The most significant finding, no doubt, is that as many as 25.7% of patients with tuberculosis also had concommitant involvement of their kidneys; a substantial figure indeed. How does one then explain the clinical rarity of renal tuberculosis in this geographical area? The fact that none of the kidney lesions even remotely resembled the classical ulcero-cavernous form of the disease appears to suggest that the kidney involvement occurs as a result of an extensive milary spread in advanced tuberculosis. It would seem that such patients usually succumb to the disease prior to the occurence of any renal symptoms; a likely explanation for the relative infrequency or renal tuberculosis in hospital practice in Zambia.

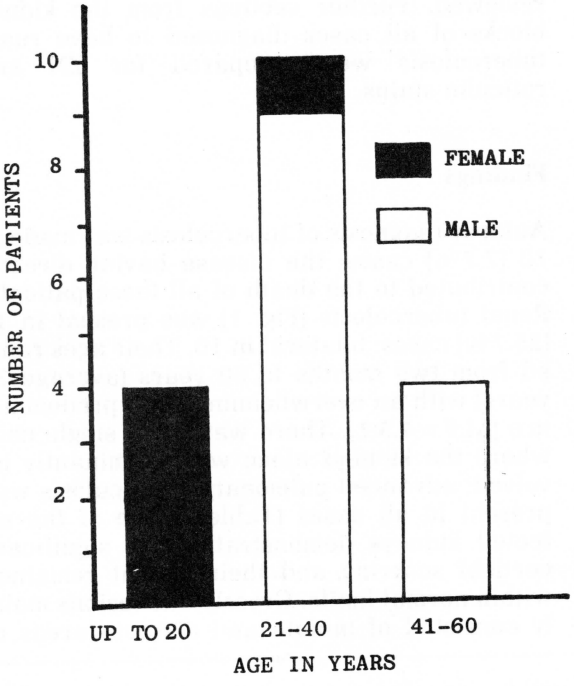

Fig. 1. Age and sex incidence in 18 cases of renal tuberculosis.

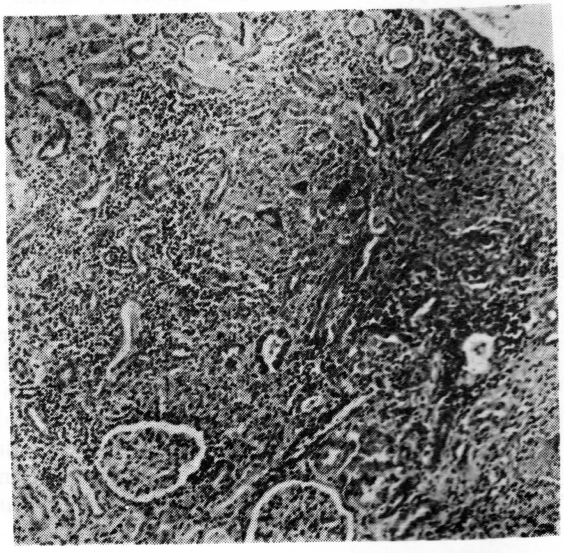

Fig. 2. Section from the kidney showing a classical tuberculous granuloma. (H & E x 112)

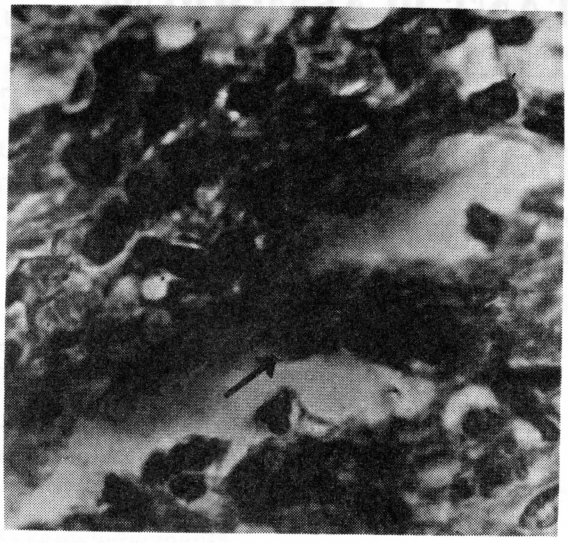

Fig. 3. High power micrograph of a renal lesion. Arrows points to clusters of mycobacterial tuberculosis. (ZN x 1800)

TABLE

INVOLVEMENT OF VARIOUS ORGANS IN 18 CASES OF RENAL TUBERCULOSIS

Lungs	18 (100%)
Liver	13 (72.2%)
Spleen	13 (72.2%)
Intestine	2 (11.1%)
Meninges	2 (11.1%)

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