

KIDNEY BIOPSY IN HUMAN SCHISTOSOMIASIS AN ULTRASTRUCTURAL STUDY

(Preliminary report)

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SUMMARY

Kidney biopsies in patients with Schistosomiasis hepato esplenic form, showed electron dense deposits, probably of gamma globulin, in the glomerular basal membrane, nearby mesangial cells. These cells appeared moderately hyperplastic and hypertrophic. Seldomly, laminated dense bodies were also seen.

Such findings are essentially similar to those described in the so-called cirrhotic glomerulopathy.

During the last few years there was among clinicians and pathologists a growing impression of an increased frequency of kidney diseases among patients with advanced clinical forms of Manson's schistosomiasis. Such impression has been proved to be correct by studies on the incidence of nephritis in patients with and without schistosomiasis which have shown statistically significant differences¹ between the two groups.

Light microscopy studies of kidneys in patients with schistosomiasis² without clinical manifestations of renal disease disclosed local glomerular lesions, characterized by moderate axial cell proliferation and focal thickening of the basal membrane.

In patients with clinically manifested nephrotic syndrome the lesions are of a "membranous" glomerulonephritis, with or without evolution to chronic forms.

DODIN et al.⁴ and SILVA et al.³ observed a marked increase of circulating antibodies in patients with schistosomiasis during the early phases of the treatment with Ambi-

lhar. Such finding is probably due to liberation in the blood stream of antigenic material originating from dead schistosoma worms.

We have performed light and electron microscopy studies in kidney biopsies of five patients before and after the above mentioned treatment. All patients had the hepatosplenic form of the disease and did not show clinical or laboratorial signs of renal disease. Light microscopy failed to disclose glomerular abnormalities. Electron microscopy showed, both before and after treatment, glomerular pathological findings characterized by slight mesangial cell hypertrophy and hyperplasia, with increased basal membrane like material deposition. Noteworthy, were electron dense deposits (Fig. 1) seen chiefly in the glomerular basal membrane in close contact with the mesangial cells. In several areas large laminated electron dense bodies (Fig. 2) were seen within the mesangium.

Such alterations were similar to those described in the kidney of cirrhotic patients

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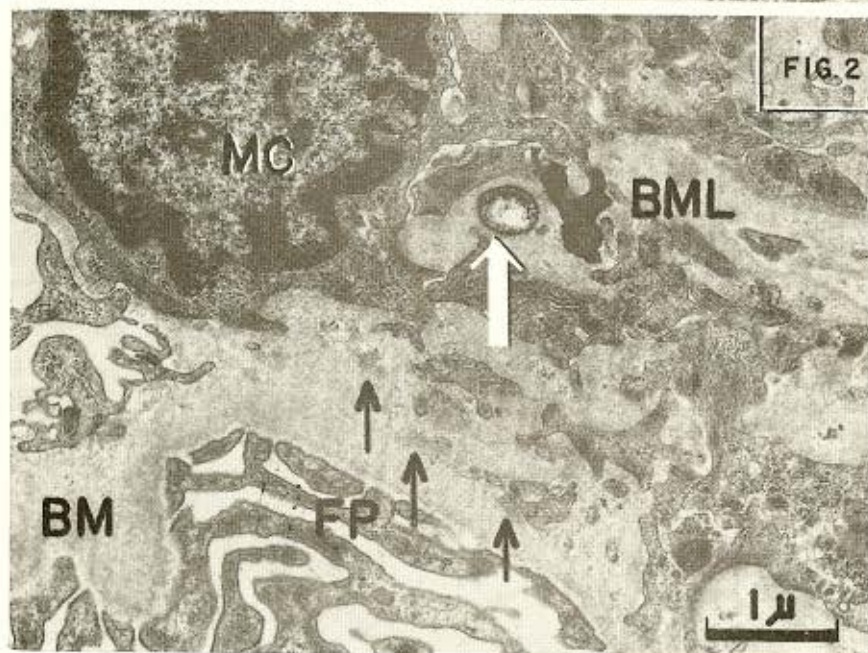
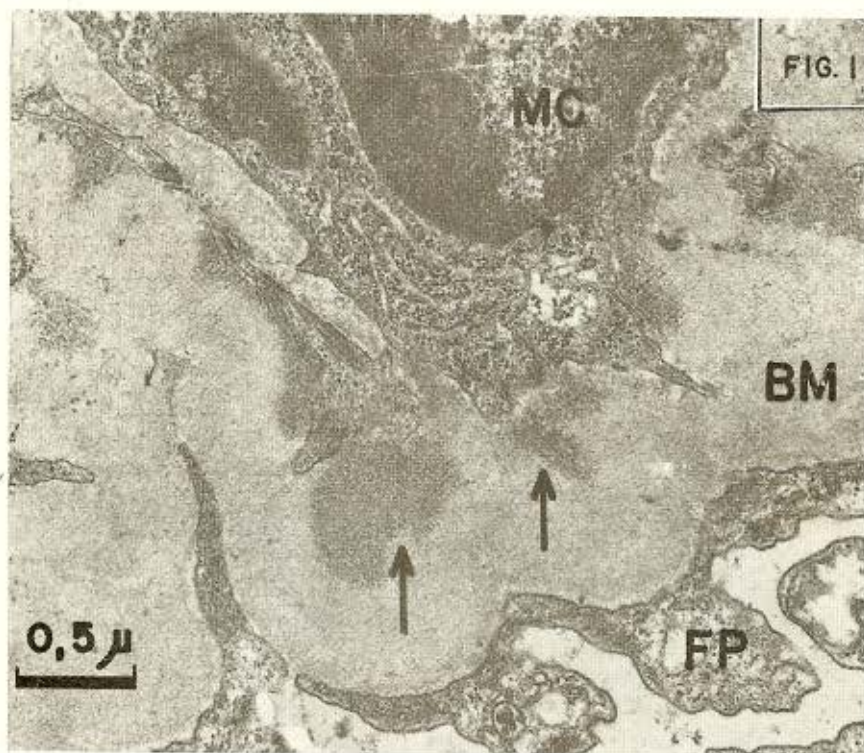


Fig. 1 — Large electron dense deposits in the glomerular basal membrane (BM) (arrows) nearby a mesangial cell (MC). Epithelial cell foot process (FP) are preserved in this area. Fig. 2 — Large laminated body (Thick arrow) is seen in the basement membrane like material (BML) of a mesangial cell (MC). Thin arrows designate small electron dense deposits in the glomerular basal membrane. Foot process are preserved.

by SAKAGUCHI et al.⁶ and by FISHER & PEREZ-STABLE⁵. FISHER & PEREZ-STABLE⁵ noticed that all patients with cirrhosis who exhibited renal insufficiency and pronounced glomerular basal membrane deposits, had inversion of their serum albumin gamma globulin: ratios. They speculated on the possibility that such deposits may represent protein trapped within this membranous structure. Probably an identical mechanism plays a role in human schistosomiasis, in which there is frequently an increased serum gamma globulin. The deposits by us observed could be also antigen-antibody complexes which are partially retained by the glomerulus. The work of FISHER & PEREZ-STABLE⁵ also demonstrated that such lesions are progressive. Probably the same is seen in human schistosomiasis and they are the morphologic manifestations of an early progressive glomerular disease.

Fluorescence microscopy studies are now in progress in order to ascertain the real immunological nature of such deposits in human schistosomiasis.

RESUMO

*Biopsia renal na esquistossomose humana.
Estudo ultra-estrutural (Nota prévia)*

O estudo ultra-estrutural de biopsias renais em pacientes esquistossomóticos, forma hepatoesplênica, revelam depósitos, provavelmente de gamaglobulina, na membrana basal glomerular, junto a células mesangiais. Estas estão discretamente hipertrofiadas e hiperplásicas. Ocasionalmente, corpos densos laminares também foram vistos na intimidade da membrana basal.

Tais achados são essencialmente semelhantes àqueles descritos na chamada glomerulopatia cirrótica.

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