Negativeness of Skin Biopsy in Dialysis Amyloidosis

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Dear Sir,

Recently, it has been demonstrated that amyloidosis affecting bones, joints, and synovia is an important complication of long-term hemodialysis [1, 2]. Amyloid ar-thropathy of hemodialysis patients is characterized by carpal tunnel syndrome, persistent oligoarticular swelling and effusions mainly in the kness and shoulders, lytic bone lesions, and erosive spondyloarthropathy [2, 3]. β 2-microglobulin, an amyloidogenic plasma protein, has been recently shown to be the major constituent of this type of amyloidosis [1,4]. This protein accumulates in the blood of patients undergoing hemodialysis, because this procedure cannot remove enough quantity from blood plasma [4–6].

An important question is whether the distribution of dialysis amyloidosis is limited to joints and bones, or whether it may be systemic. We have demonstrated in 3 patients the systemic character and the visceral involvement of dialysis amyloidosis, by the presence of amyloid deposits in a widespread distribution of extraosteoarticu-lar tissues [7]. In two previous reports, the presence of amyloid substance has been demonstrated, involving ex-traosteoarticular structures [4, 8, 9]. Shirahama et al. [4] found amyloid deposits in rectal biopsies in 3 out of 5 patients undergoing hemodialysis, and Altemeyer et al. [8] and Kachel et al. [9] demonstrated amyloid substance in the skin biopsies of 82% of chronic hemodialysis patients treated for 8–13 years, and in 68% treated for 2–3 years.

To evaluate the actual incidence of skin involvement in dialysis amyloidosis, and its diagnostic importance, we have performed skin biopsies in 16 patients on chronic hemodialysis, with dialysis amyloidosis in the form of ar-thropathy and/or carpal tunnel syndrome in all of them, and visceral-systemic involvement in 10. A punch or excision biopsy of clinically uninvolved skin, usually the forearm, was done. The size and depth of the biopsy specimen included the intracutaneous blood vessels, sweat glands, skin appendages, and subcutaneous fat as well as the epidermis and dermis. Sections from paraffin blocks were stained with Congo red, thioflavin T, and crystal violet. In addition, four biopsy specimens were treated with anti-human β 2-microglobulin antiserum (Dako) using the av-idin-biotin-peroxidase technique. The stained specimens were examined by usual and polarized light microscopy. All of the skin specimens, in

all stainings (including anti- β 2-microglobulin), were completely negative. No traces of amyloid substance could be observed in any of the above-mentioned cutaneous structures.

Although the systemic character of dialysis amyloidosis seems to be well sustained, the present results suggest that skin is not involved in this type of amyloidosis. This is in accordance with previous reports in which skin biopsies had been negative [10,11]. We cannot explain the discordance between our results and those of Altemeyer et al. [8] and Kachel et al. [9]. Our findings might dissuade the practise of skin biopsies, an innocuous and simple procedure, in the diagnostic of dialysis amyloidosis and in the assessment of its systemic distribution.

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