Chronic Urate Nephropathy

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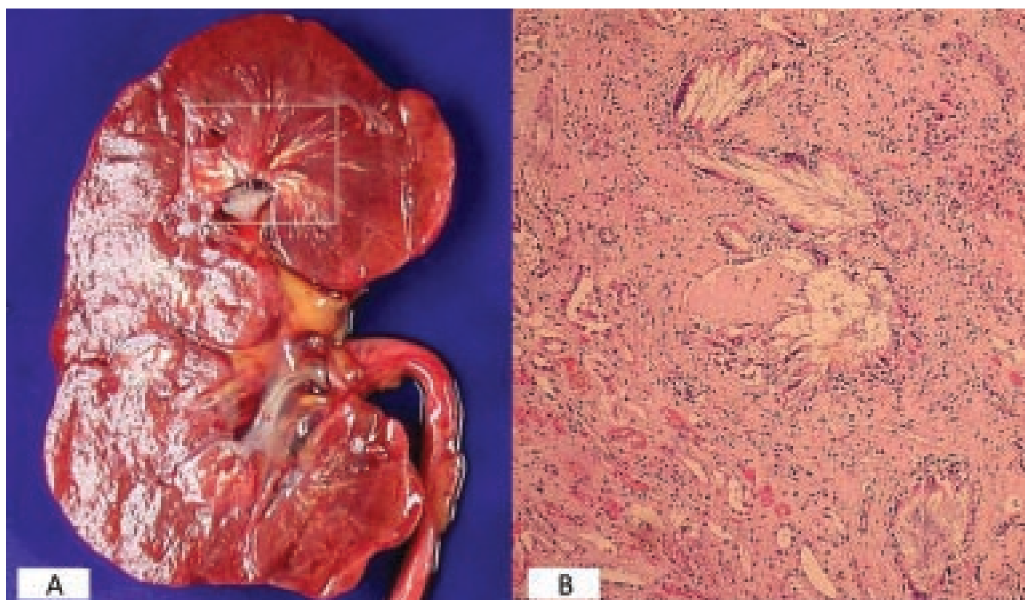

Fig. 1. (A) The kidney shows cortical atrophy with multiple scars and deposition of numerous, yellowish, needle- like crystals in the medulla. (B) Histopathology shows urate crystal deposition surrounded by foreign body giant cells and fibrosis in the renal medulla (HE×200).

A 48-year-old man had right big toe pain for 2 days. Physical examination showed acute swelling accompanied by formation of a crystal- like substance under the subcutaneous area. Laboratory data showed uric acid 19.8 mg/dL, blood urea nitrogen 66 mg/dL and creatinine 3.4 mg/dL. The patient died of advanced gastric cancer. At autopsy, the bilateral kidneys showed cortical atrophy with multiple scars and yellowish, needle- like crystals in the medulla area (Fig. 1A). Histopathology showed urate crystals with foreign body giant cells and fibrosis around the crystals, diagnostic of chronic urate nephropathy (Fig. 1B). Chronic urate nephropathy occurs in patients with more protracted forms of hyperuricemia. The lesions are ascribed to the deposition of monosodium urate crystals in the acid milieu of the distal tubules and collecting ducts as well as in the interstitium. These deposits have a distinct histologic appearance and may form birefringent needle- like crystals either in the tubular lumina or in the interstitium. Tubular obstruction by urates causes cortical atrophy and scarring. Clinically, urate nephropathy is a subtle disease associated with tubular defects that may progress slowly. Chronic renal failure can develop, such as in our patient.

FURTHER READING

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