Acute Renal Failure in Multiple Myeloma after the Ingestion of a Contrast Agent for Cholecystography

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Dear Sir,

Acute renal failure in multiple myeloma patients is uncommon [1, 2]. It is usually precipitated by hypercalcemia, infection associated with volume depletion or the administration of potentially nephrotoxic antibiotics. In a rare instance, intravascular injection of iodine-containing contrast dyes had led to acute renal failure [3–5]. We report here a patient with multiple myeloma who developed acute renal failure after a single oral dose of 3 g of iopanoic acid (Telepaque) as a contrast agent for cholecystography.

Case Report

R.B., a 66-year old woman was admitted because of oliguria of 1 day duration. Two days before admission, she ingested 3 g of iopanoic acid. She had a long history of hypertension and osteoarthritis for which she was on Minipress, Lopressor, Dyazide and Motrin. Two months earlier, blood tests revealed normal renal function.

On admission, she was pale, hypertensive without evidence of congestive heart failure or dehydration. Her urine output in the first 24 h was 1,500 ml, progressively decreasing to 50 ml on the 27th day of the hospital stay. On admission, the serum creatinine was 8.0 mg%, BUN 58 mg%, calcium 9.0 mg%, phosphate 6.4 mg%, uric acid 11.4 mg%. She also had a normochromic normocytic anemia with a hematocrit of 27%. Urinalysis revealed marked proteinuria which varied between 2.0 and 4.4 g/day, a few red cells, but no casts. Urine immunoelectrophoresis revealed a large amount of free λ -chains, and serum immunoelectrophoresis revealed a small monoclonal IgA λ spike. A sternal bone marrow showed complete bone marrow replacement by plasma cells. In spite of chemotherapy and hemodialysis, she did not recover renal function and expired 6 months later from progressive myeloma.

Progressive chronic renal failure in multiple myeloma patients is common and occurs at some time during this illness in about half of the patients [1, 3–5]. In contrast, acute renal failure without preceding renal impairment is not common, occurring in only 8.7% of the patients reported in a recent series [2]. Earlier reports emphasized the role of intravenous pyelography in precipitating acute renal failure, but this incidence is probably low [1,2]. Acute renal failure after oral cholecystography with iopanoic acid (Telepaque) is rare and was reported to occur only after administration of a larger than usual dose [6–10]. Thus, our patient with multiple myeloma is unique in developing acute renal failure after a single oral dose of 3 g of iopanoic acid, whereas, the 9 previously reported patients were given between 6 and 15 g of iopanoic acid. The patient reported here never recovered renal function in contrast to the other 9 reported patients [6–10].

The probable cause of acute renal failure induced by iodinated radio-contrast dyes is intraluminal

obstruction of renal tubules by urinary proteins [4, 5]. In our patient, the excretion of large amounts of free light chains in the urine could have been the probable precipitating factor in the development of acute renal failure after an oral dose of iopanoic acid.

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