Development of Multiple Myeloma in 2 Patients with Chronic Pyelonephritis and Long-Term Hemodialysis Treatment

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Dear Sir,

Different internal (age, sex, race) and external (chronic antigen stimulation, radiation, drugs) factors are discussed in the etiology of multiple myeloma [1]. A review of the literature indicates the acceptance that chronic infections could lead to a local plasma-cell infiltration which may be followed by a malignant transformation [1-5]. To the best of our knowledge there is no published report of a myeloma in patients with chronic pyelonephritis and dialysis treatment. We report 2 cases with chronic pyelonephritis and chronic renal failure (CRF) where myeloma has been diagnosed in the course of maintenance hemodialysis.

The first case was a 52-year-old female admitted to the clinic of nephrology in September 1982 with CRF (creatinine 568 µmol/l). Examinations showed latent chronic pyelonephritis. One year later her creatinine climbed to 986 µmol/l and she was placed on chronic hemodialysis. In the following years many complications occurred: chronic pericarditis, viral hepatitis B, stomach resection for a hemorrhagic erosive gastroduodenitis, cirrhosis of the liver. In 1991 the patient’s state worsened – there were frequent gastrointestinal hemorrhages and manifestations of congestive heart failure. Tests performed on hospital admission showed Hb 50 g/l, total protein 80 g/l, para-proteinemia, 80% of the bone marrow substrate in a myelogram, myeloma cells Mar-shalko type, IgG (lambda) from the immuno-electrophoresis. Polychemotherapy was not instituted because there were contraindications. Two months after diagnosing the myeloma the patient died of congestive heart failure. Pathoanatomically chronic pyelonephritis with nephrosclerosis, heart hypertrophy and dilatation, cirrhosis of the liver, ascites, multiple myeloma with infiltration of bone marrow and spleen were found.

The second case was a 66-year-old male with a history of pulmonary tuberculosis in his youth, elimination of a stone from his left kidney in 1972, and frequent urinary infections. In 1986 a nonfunctioning left kidney and CRF (creatinine 275 µmol/l) were noted. In July 1987 the patient underwent right nephrostomy on account of anuria. Histologically, he proved to have active chronic pyelonephritis and no evidence of renal tuberculosis. One month later he began chronic hemodialysis for terminal renal failure. During the following years the patient...
suffered from frequent inflammations of bronchiectasias and pneumonia. In June 1992 he was admitted to the clinic of nephrology with diminished muscular strength, edema and congestive heart failure. Tests performed then showed Hb 78 g/l, total protein 86 g/l, paraproteinemia, asynchronous and polymorphic type cells in 80% of the bone marrow substrate, IgG (kappa) +Bence Jones (kappa) from immunoelectrophoresis. Polychemotherapy was instituted. In March 1993 the patient died of a cardiac arrest. Autopsy was not done.

Both patients were on hemodialysis for more than 5 years. Careful revision of their history and documentation excludes the development of myeloma before or at the start of maintenance hemodialysis. At no time was there evidence of another kidney disease except chronic pyelonephritis. The patients presented with secondary immunodeficiency syndromes – gastrointestinal changes in the first case and respiratory disorders in the second one, which may be a result of suppressing the normal polyclonal immune response (here concerning IgA) to external antigens. The reported 2 cases are 0.66% of 302 patients with CRF on hemodialysis for a period of 18 years. Thus the risk of development of myeloma among patients on dialysis is about 100 times higher compared to the rest of the population where the frequency is 1-4/100,000 [1].

The evolution of the ‘secondary’ myeloma differs from the evolution of satellite myeloma nephropathy, as the latter gives an opportunity for outliving 5 years in cases where combination of chemotherapy and hemodialysis is instituted [6]. Patients with CRF and maintenance hemodialysis are at high risk of malignant processes [6]. The reported 2 cases support this thesis [7].

References