Injury to Pelvic Kidney and Major Abdominal Blood Vessels during 'Temporary' Peritoneal Dialysis Catheter Insertion

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Dear Sir,

The stylet-catheter has been widely used for acute peritoneal dialysis since its introduction in 1965 [1]. It is usually inserted percutaneously into the peritoneal cavity. Although blind insertion of such catheters is relatively simple to perform, serious complications have occurred, including puncture of blood vessels and perforation of viscera [2,3]. In the present report, we describe laceration of a pelvic kidney, and injury to the inferior vena cava and abdominal aorta, during percutaneous insertion of a peritoneal stylet-catheter.

A 54-year-old male with hypertension and gout came to our outpatient clinic complaining of chills and dysuria of several days' duration. He was treated with oral ampicillin and his symptoms resolved. At the time, serum creatinine level was 310 $\mu\text{mol/l}$ (3.5 mg/dl). An intravenous pyelogram was performed, but the urinary tract could not be visualized. Several days after pyelography, the patient returned complaining of oliguria, nausea and vomiting. On physical examination, blood pressure was 158/110 mm Hg, pulse 110/min and temperature 37 °C. Examination of the lungs was unremarkable, and there was no peri-cardial friction rub, third heart sound, or pedal edema. Laboratory evaluation revealed the following serum values: urea 55 mmol/l (330 mg/dl), creatinine 972 $\mu\text{mol/l}$ (11 mg/dl), potassium 6.8 mmol/l, chloride 108 mmol/l, and carbon dioxide content 11 mmol/l.

On the basis of the above laboratory findings and the patient's symptoms, he was hospitalized and it was decided to begin peritoneal dialysis. After instillation of 2 liters of dialysate solution into the peritoneal cavity through an 18-gauge needle, a stylet-catheter was inserted percutaneously into the peritoneal cavity at a point on the linea alba one third of the distance from the umbilicus to the pubic symphysis [1]. Immediately after insertion, bright red blood was seen draining from the catheter. The

patient became hypotensive and required emergency laparotomy. At surgery, a severely lacerated ectopic kidney, enveloped by a large hematoma, was found in the right pelvis. In addition, puncture of the inferior vena cava and abdominal aorta was noted. The lacerated kidney was removed and the blood vessels were repaired. Subsequently, the patient recovered but required maintenance hemo-dialysis. Histological examination of the excised kidney revealed chronic lobular glomerulonephritis and nephro-sclerosis.

In an effort to minimize traumatic complications of peritoneal dialysis catheter insertion such as the one described, we now generally avoid use of the stylet-catheter. Instead, we prefer to surgically implant a Tenckhoff catheter into the peritoneal cavity under direct vision using local

anesthesia. With this surgical approach (412 implantations over an 8-year period), the incidence of serious complications has been markedly reduced [3].

References

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