Clinical picture

Severe genital swelling following laparoscopic omentectomy

A 21-year-old uremic male on hemodialysis for 10 days received manually peritoneal catheter implantation for ongoing peritoneal dialysis (PD). He experienced reduced drain volume of dialysate caused by omental wrapping. Laparoscopic omentectomy for salvage of the PD catheter was successfully performed. After the initiation of PD, he developed progressive swelling and dragging of the scrotum and poor effluent drains. A presumptive diagnosis of inguinal hernia was made. However, computed tomography (CT) peritoneography showed contrast medium accumulation in the scrotum with the extension up to right upper abdominal wall and the absence of contrast medium accumulation adjacent to the PD catheter but the presence of an opening in the peritoneum (Figure 1). He was switched to hemodialysis for 1 month and restarted PD without recurrent leakage.

Peritoneal leakage represents a potentially serious complication of PD that can lead to acute ultrafiltration failure. It can be categorized into two types: early leaks occurring within 30 days of catheter placement and late leaks that develop beyond this period. In this case, peritoneal leakage is most frequently related to external leakage of dialysate at the exit site with the extension into abdominal wall and external genitalia, or less commonly internal leakage traveling into hernia, pleural cavity, and retroperitoneal space. Aside from sudden reduction of ultrafiltration volume and weight gain, clinical manifestations depend on the leakage site, ranging from localized edema in the abdominal wall and/or genitalia to dyspnea. Genital swelling due to peritoneal leakage usually poses diagnostic challenge and may be misdiagnosed as inguinal hernia or hydrocele, leading to improper management. CT peritoneography, magnetic resonance peritoneography, and single-photon emission CT can facilitate to pinpoint the exact location of leakage. The peritoneal leakage in this patient was caused by the unhealed peritoneum resulting from trocar insertion during laparoscopic surgery, as visualized directly in the CT peritoneography. To prevent peritoneal leakage, delayed dialysate instillation for more than 14 days after catheter insertion can be helpful. Once peritoneal leakage develops, temporary switch to hemodialysis or conversion to nocturnal intermittent PD may allow the sealing of the leakage site. Surgical repair is reserved for recurrent leakage with ultrafiltration failure.

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Conflict of interest: None declared.
References


