CORRESPONDENCE

Migration of Tenckhoff Catheter into an Occult Inguinal Hernia

KEY WORDS: Dialysis; renal insufficiency; hernia; Tenckhoff catheter; Tenckhoff catheter migration.

Editor:

CASE SUMMARY

We describe the case of a 2-year-old boy with end-stage renal failure secondary to bilateral renal dysplasia. Declining renal function necessitated the commencement of renal replacement therapy, leading to the surgical insertion of a double-cuff non-swan-neck Tenckhoff catheter with a straight intra-abdominal portion. Automated peritoneal dialysis (fill volume 10 mL/kg) proceeded uneventfully on the first post-operative day. On the fifth post-operative day, a tube-like mass was palpable in the left scrotum. Plain abdominal radiograph confirmed the abnormal position of the catheter tip in the left scrotum (Figure 1). No inguinal hernias were found at previous pre-operative assessment. The catheter tip, located within the hernial pouch, was repositioned surgically in the pelvis while performing a herniorrhaphy to prevent recurrence. Our patient has been successfully undergoing peritoneal dialysis since, without further catheter tip migration despite developing a right-sided inguinal hernia 3 weeks after recommencement of peritoneal dialysis requiring a subsequent herniorrhaphy.

The double-cuff Tenckhoff catheter originally described by Tenckhoff 4 decades ago has been widely used for peritoneal dialysis (1,2). Various techniques to insert a double-cuff Tenckhoff catheter rely upon placing the catheter tip pointing downwards into the pelvis for maximal drainage (3). A recognized complication is catheter tip migration out of the pelvis. Straight catheters are associated with higher incidences of catheter tip migration, compared with swan-neck permanent-bend catheters (4). Our center currently uses the double-cuff non-swan-neck Tenckhoff catheter with a straight intra-abdominal portion as a surgical choice.

Abdominal hernias commonly complicate peritoneal dialysis due to increased intra-abdominal pressure during dialysate dwells and occur in up to 25% of patients within 2 years of starting peritoneal dialysis (5). Pre-operative detection of hernias can be difficult, as they often develop only secondary to the increased intra-abdominal pressure during peritoneal dialysis. Garcia-Urena *et al.* suggested that abdominal wall

hernias develop in 17.2% of patients who receive peritoneal dialysis, and 73% are found prior to PD—inguinal hernias account for 26.9% of these (6).

Our case highlights the importance of thorough pre- and post-operative assessment for inguinal hernias. Despite recognizing the risk of a contralateral hernia at the time of initial hernia repair, we were unable to detect any sign of contralateral hernia prior to the recommencement of peritoneal dialysis. Several authors suggest that laparoscopic insertion techniques are associated with lower rates of catheter-tip migration and mechanical complications (7,8,9), as well as having the added advantage of intra-operative diagnosis and treatment of abdominal hernias, and closure of patent processus vaginalis (10). The laparoscopic method offers excellent views of the abdomen and allows optimal placement of the catheter tip within the pelvic cavity.

Figure 1 — A plain abdominal radiograph showing the abnormal position of the Tenckhoff catheter tip in the left scrotum.

As depicted in Figure 1, the catheter was situated quite far down into the scrotum. With the use of straight catheters, an excessively long intra-abdominal portion of the catheter can lead to increased tension with the potential to increase the risk of catheter migration. Some authors address the issue of preventing catheter tip migration by suture fixation to the pelvis (11,12). In our experience suture fixation is associated with a significant increase in catheter-associated pain post operatively.

A previous report described the inadvertent placement of a Tenckhoff catheter into an occult inguinal hernia in an adult patient (13). To our knowledge, our case represents the first pediatric case of catheter tip migration into an occult inguinal hernia. In both cases, the peritoneal dialysis catheter was successfully repositioned at the time of the hernia repair—without the necessity of Tenckhoff catheter revision.

DISCLOSURES

The authors have no financial conflicts of interest to declare.

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