Unintentional Removal of a Peritoneal Dialysis Catheter: A Case Report

KEY WORDS: Continuous ambulatory peritoneal dialysis; swan neck catheter; unroofing surgery.

Editor:

An 80-year-old woman began undergoing continuous ambulatory peritoneal dialysis 18 months ago. A swan neck catheter (BCS6A; Fuji systems, Fukushima, Japan) was implanted. Bag exchanges were performed by her daughter because of the patient's old age and dementia. After 16 months, she developed a tunnel infection, and unroofing was performed. Consequently, a superficial cuff protruded from the belly as shown in Figure 1A. One day, the patient was moving around while the connective tube was connected to the effluent bag. When the patient's daughter was away from the patient for a few minutes, she returned to find that the catheter had been unintentionally removed. The patient did not have abdominal pain or tenderness, and her exit site was already closed as shown in Figure 1B.

The effluent dialysate was clear. Although there was a superficial cuff on the removed catheter, the deep cuff was not seen (Figure 1C).

The echocardiograph showed that the deep cuff remained at the peritoneal level as shown in Figure 1D (a) and (b).

There were no signs of infection detected after the incident.

Mechanical complications associated with peritoneal catheters such as catheter tip migration or kinking, omental wrapping, peritoneal dialysate leakage (1), or catheter fracture (2) have been reported. However, there has been no report regarding detachment of cuffs from catheters. This is the first case report regarding the unintentional, accidental removal of a swan neck catheter in a nonsurgical manner.

The swan neck catheter designed by Twardowski improved exit-site infection rates and lowered migration rates (3). Unroofing surgery is a common procedure for treating

Figure 1 — A) The superficial cuff was observed on the peritoneal catheter after the unroofing surgery. B) Closed exit site a few hours later after unintentional removal of the catheter. C) Deep cuff should normally be attached at the indicated position between the arrows, but it was not seen after the unintentional removal of peritoneal catheter. D) An echocardiograph showed the deep cuff remaining in the peritoneum. A cross section (a) and a longitudinal section (b).

superficial cuff infection (4). However, unroofing may have the following disadvantage. Originally, the cuff plays an important role not only as a barrier to periluminal movement of organisms into a peritoneal cavity but also as a stabilizer by adhering to subcutaneous tissue. Therefore, removing the superficial cuff could weaken the stability of the catheter and anchorage with the surrounding tissue. We suggest 2 potential reasons as the cause of this present case. First, the adhesive agent may not have had sufficient strength to adhere between the catheter and cuff. Second, the superficial

cuff had not been functioning in terms of anchoring to the subcutaneous tissue.

In conclusion, we should be aware of unintentional removal of catheters in cases where the superficial cuff is already nonfunctional after the unroofing technique, particularly in patients with dementia.

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DISCLOSURE

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