CORRESPONDENCE

Hemodialysis Switch Improved Colonic Angiodysplasia in a Peritoneal Dialysis Patient

KEY WORDS: Peritoneal dialysis; colonic angiodysplasia; peritoneal dialysis indication.

Editor:

In recent years, *Peritoneal Dialysis International* has published several case reports of patients undergoing renal replacement therapies with severe gastrointestinal angiodysplasia (AD)-related anemia. Two reports described a clinical improvement of anemia after patient shift from hemodialysis (HD) to peritoneal dialysis (PD). However, those cases referred to AD due to gastric antral vascular ectasia (GAVE) (1,2), a direct result of antro-pyloric motility dysfunction.

Here we present a continuous ambulatory PD (CAPD)-to-HD switch for AD-related anemia in a 63-year-old patient. Peritoneal dialysis was considered the best choice for treatment as it limits additional anticoagulant use needed in this patient, who had atrial fibrillation. However, several attempts at reducing gastrointestinal bleeding, including oral anticoagulant therapy discontinuation post-left atrial appendage closure, endoscopic

argon plasma treatment, and colonic angiography with lesion embolization, were ultimately unsuccessful. The patient was switched to HD, with a right colonic resection being anticipated for an eventual bleeding episode. No major bleeding events were detected, including with the administration of unfractionated heparin to prevent dialyzer clotting. Three years after drop-out from PD, the patient underwent a successful kidney transplant. A similar case was described by Moreiras in 1998 (3).

The following pathogenic hypothesis may clarify this case further. Colonic AD is the consequence of chronic intermittent venous obstruction that leads to the dilatation of the arterioles, especially the ones piercing the smooth muscle layers. The main cause of venous obstruction is the increase of bowel wall tension, explained by the Laplace law, where cylinder wall tension and luminal size are directly correlated: colonic wall tension is equal to the pressure difference across the colonic wall multiplied by the radius of the cylinder, which is greater in the right colon. Hence, the pressure across the wall is the result of the difference in pressure between the bowel lumen and the peritoneal cavity. Therefore the probable cause for AD was the PD solution load, which increased peritoneal pressure, subsequently increasing wall pressure and favoring bleeding.

The presence of colonic AD should be considered a relative contra-indication to PD due to its uncertain effects on bleeding and to PD-related risks after AD treatment, especially peritonitis (4). However, HD treatment, due to the need for systemic anticoagulation, may also be problematic in AD patients.

The nephrologist must be aware of the possible worsening causes of gastrointestinal bleeding to minimize the iatrogenic complications and tailor the best diagnostic and therapeutic program for best outcomes.

DISCLOSURE

The authors have no financial conflicts of interest to declare.

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REFERENCES

1. Yorioka N, Hamaguchi N, Taniguchi Y, Asakimori Y, Nishiki T, Oda H, Yamakido M. Gastric antralectasia in a patient on hemodialysis improved with CAPD. *Perit Dial Int* 1996; 16:177–8.
2. Chang II, Chen TW, Ng YY, Yang WC. Recurrent intestinal angiodysplastic bleeding in a patient on hemodialysis ceasing spontaneously with CAPD. *Perit Dial Int* 1998; 18(3):342–3.
3. Moreiras PM. Gastrointestinal angiodysplastic bleeding also occurs in CAPD. *Perit Dial Int* 1998; 18(6):655.
4. Gumpenberger C, Kirchgatterer A, Wallner M, Kramar R, Prischl FC. Peritonitis following argon plasma coagulation of colonic angiodysplasia in a CAPD patient—an avoidable complication? *Perit Dial Int* 2005; 25(5):500–2.

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