Massive Hemorrhagic Necrosis of Small Intestine due to Mesenteric Vein Thrombosis: An Unusual Complication of Nephrotic Syndrome

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Dear Sir,

Thromboembolism remains one of the serious complications in patients with nephrotic syndrome [1]. We describe herein a case of massive small bowel infarction in a nephrotic patient with mesenteric venous thrombosis (MVT). To our knowledge, this severe thrombotic complication has not been reported in nephrotic patients [2].

A 25-year-old man, a case of relapsing nephrotic syndrome due to minimal change, was admitted to the hospital because of severe diarrhea with bloody stool. Eight days before his admission, severe watery diarrhea (sometimes more than 10 times/day) had occurred, and bloody stool and abdomen distension developed 6 days later. Physical examination on admission revealed a pulse of 120/min, blood pressure of 170/80 mm Hg, temperature of 37.8°C, tachypnea, dry tongue, right side chest breathing sound diminished, distended abdomen with diffuse tenderness and rebounding pain, silent bowel sound, shifting dullness of abdomen, severe leg pitting edema, and bloody stool by digital examination. Laboratory investigation data showed: white cell count $29.6 \times 10^9/l$ (segment count 89%, band count 5%); serum bicarbonate 19.8 mmol/l; serum calcium 1.28 mmol/l (5.1 mg/dl); serum creatinine 124.2 $\mu\text{mol/l}$ (1.4 mg/dl), blood urea 6 mmol/l (36 mg/dl), albumin 15 g/l. Abdominal tapping showed unclotted bloody ascites. Chest X-ray also revealed right massive pleural effusion. Emergency laparotomy was done immediately. At operation, massive small bowel infarction was found, the pulsation of mesentery arteries was intact, but the superior mesenter-

ic vein presented thrombosis formation. Massive resection of small bowel with primary anastomosis of intestine was done later. Only a 55-cm length of distal-side small bowel was residual. Pathological reports revealed trans-mural hemorrhage necrosis of the small intestine (fig. 1). The mesenteric arteries were patent, but the mesenteric venous channels were occluded by fresh thrombi (fig. 2). The post-operational course was smooth. He also received TPN therapy due to short bowel syndrome and anticoagulant therapy to prevent relapsing of MVT.

Unfortunately, he developed sepsis with DIC 3 weeks later and expired on hospital day 25. MVT is an unusual event [3]. Common disorders associated with it include surgery, trauma, heart failure, portal hypertension, inflammatory bowel disease, peritonitis, neo-plasma and antithrombin deficiency [4]. MVT may be a primary event, or it may occur secondary to abdomen trauma, stasis, inflammation or hypercoagulable state. Except for the latter, none of the other causes was apparent in our patient. The most important factors that probably contributed to

the severe MVT in this case were the nephrotic syndrome and severe dehydration due to diarrhea. A hypercoagulable state and thromboembolic complications are well-known features of nephrotic syndrome in adults. Pathogenetic factors include: (1) urinary loss of clotting inhibitor; (2) increased hepatic synthesis of fibrinogen, cofactors and lipoprotein; (3) hemo-concentration due to egress of fluid from vascular space; (4) increased platelet aggregation; (5) steroid and diuretic therapy [5].

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0028-2766/92/

0612-0230\$2.75/0

Fig. 1. Hemorrhagic necrosis with venous thrombosis of small intestine.

Fig. 2. Mesenteric vein with

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