CASE REPORT

Suburothelial hemorrhage and intestinal mural hemorrhage secondary to Coumadin use

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ABSTRACT

Both suburothelial hemorrhage and intestinal mural hemorrhage are very rare causes of abdominal pain and gross hematuria. Computed tomography (CT) is very valuable in both diagnoses. We present left suburothelial hemorrhage and intestinal mural hemorrhage with CT findings, in a case of Coumadin use for mitral valve replacement.

Keywords: Computed tomography; intestinal mural hemorrhage; suburothelial hemorrhage.

INTRODUCTION

Anticoagulant therapy is the basis for the prevention and treatment of thromboembolic diseases. Anticoagulant-related hemorrhage is seen in 4%.[1] Hemorrhage can occur even if the international normalized rate (INR) values are kept within the therapeutic or normal range. However, the risk of hemorrhage increases if the INR increases.[2] Anticoagulant-related abdominal hemorrhage is seen most commonly at the rectus muscle sheath and gastrointestinal system.[3] We report a case of suburothelial hemorrhage, intestinal mural hematoma, and presacral hematoma secondary to Coumadin use.

CASE REPORT

A 44-year-old male patient was admitted to the emergency department with abdominal pain and red urine who was taking Coumadin for mitral valve replacement. Urine analysis shown gross hematuria. There were no fever and urinary stone history. There were no findings suggesting primary renal disease (increased serum creatinine, proteinuria, or dysmorphic red blood cell). The patient's Hb was 8.5 mg/dl, white blood cell count 8500/μL, and INR value 13.2. On the first CT scan, the left renal pelvis and ureter were dilated with high-density content (Fig. 1). High density wall thickening was observed in the 8 cm segment of ileal loops (Fig. 2). The constellation of imaging findings was consistent with the left suburothelial hemorrhage and intestinal mural hematoma secondary to coagulopathy. Vitamin K and fresh frozen plasma were given to the patient after cessation of the Coumadin. Three days later, the pain was relieved. Patient's Hb level was 7.5 mg /dl and INR value 2.1. High density wall thickening of the ileal loops disappeared on contrast-enhanced abdominal CT for control, but wall thickening in the left renal pelvis and ureter wall persisted. Furthermore, newly onset presacral hemorrhage and right lower quadrant hematoma were seen (Fig. 3). The patient was discharged on follow-up with no complaints. Abdominal CT scan after 3 months showed no abnormal findings.

DISCUSSION

Suburothelial hemorrhage is very rare and often accompanied by abdominal pain.[4] It often occurs secondary to anticoagulant therapy.[5–7] Rarely reported in patients with hemophilia,

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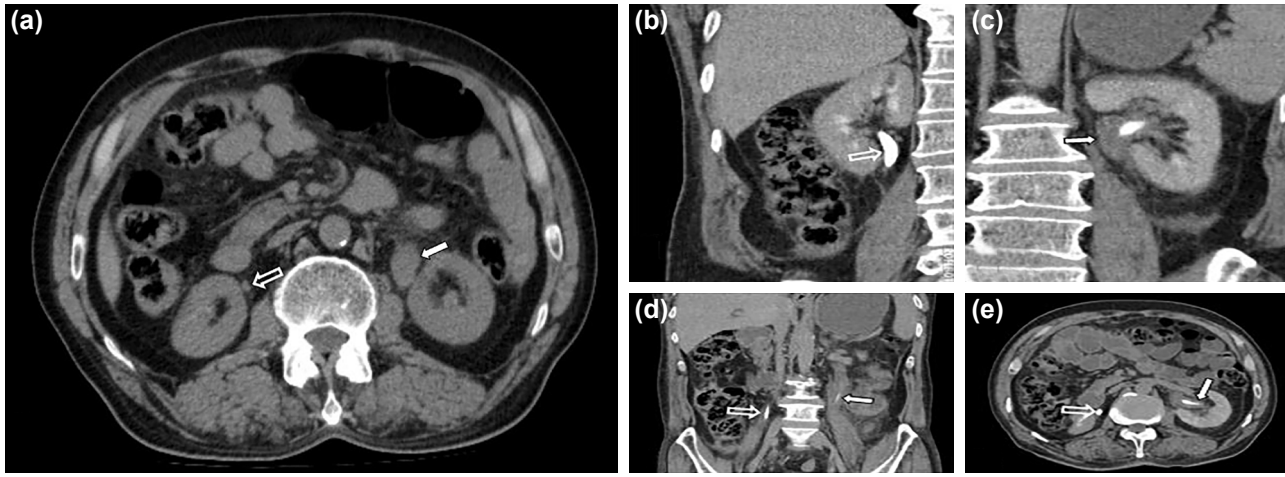

Figure 1. (a) The first non-contrast abdomen computed tomography (CT) showed asymmetric thick and high-density left ureter (arrow) and right ureter in normal appearance (hollow arrow). **(b-e)**. Three days later in the pyelogram phase, contrast-enhanced coronal reformat abdomen CT showed thickening of the left renal pelvis and ureter (arrows) and normal appearance of the right renal pelvis and ureter (hollow arrows).

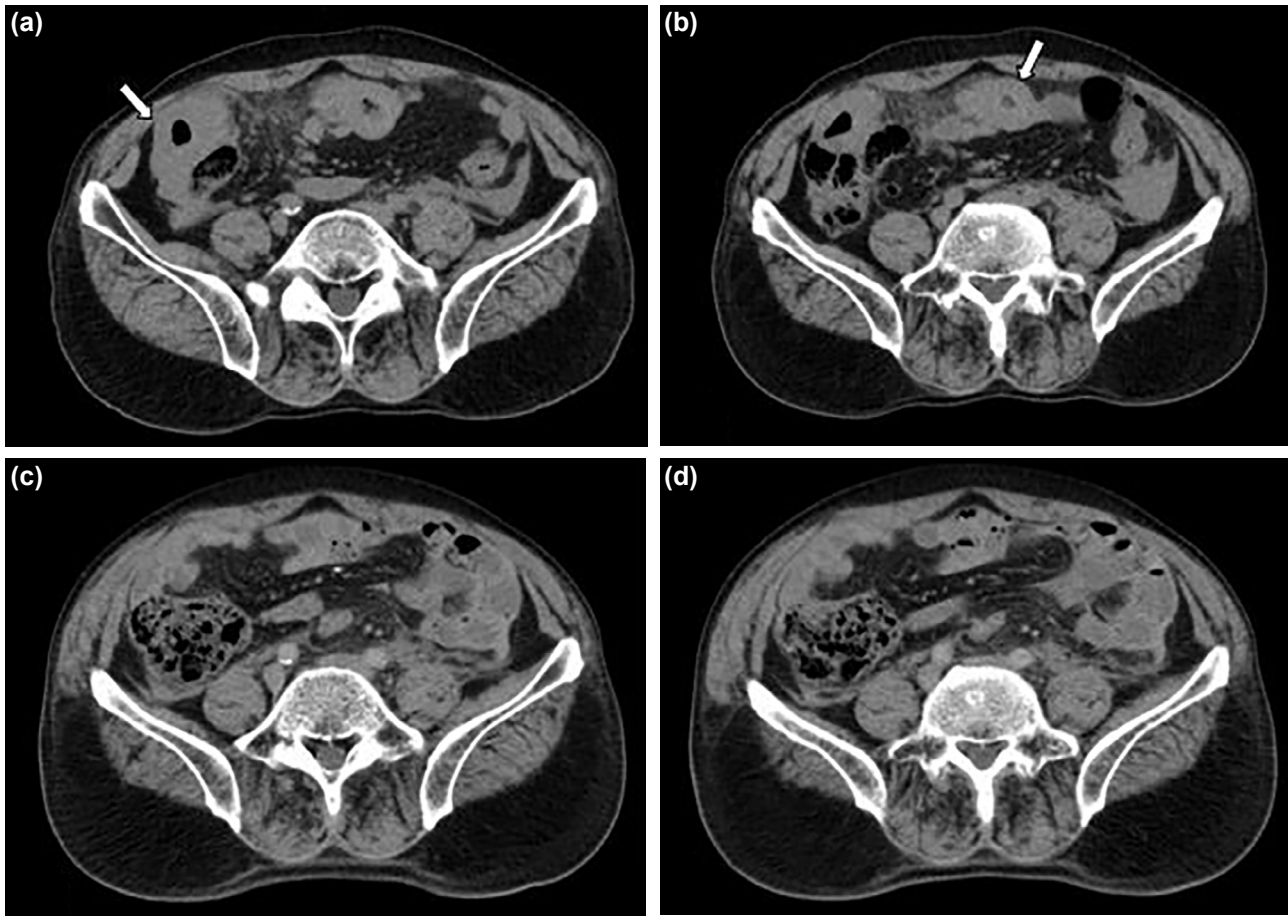

Figure 2. Intestinal mural hemorrhage. **(a)** and **(b)** Segmented and high-density small intestine wall thickening (arrows) on the initial unenhanced abdominal computed tomography (CT) and **(c)** and **(d)** small intestines with normal wall thickness on contrast-enhanced abdominal CT taken 3 days after.

immune thrombocytopenic purpura, factor V Leiden thrombophilia, and iatrogenic cases.[8–11] There is no renal or gender dominance in the reported cases. Suburothelial hemorrhage is rarely considered as a clinical diagnosis before imaging and computed tomography (CT) can safely diagnose it. When a diagnosis made, especially bleeding diathesis should be investigated. It is seen as high-density wall thickening in non-contrast CT.[12] Despite wall thickening, hydronephrosis is not a

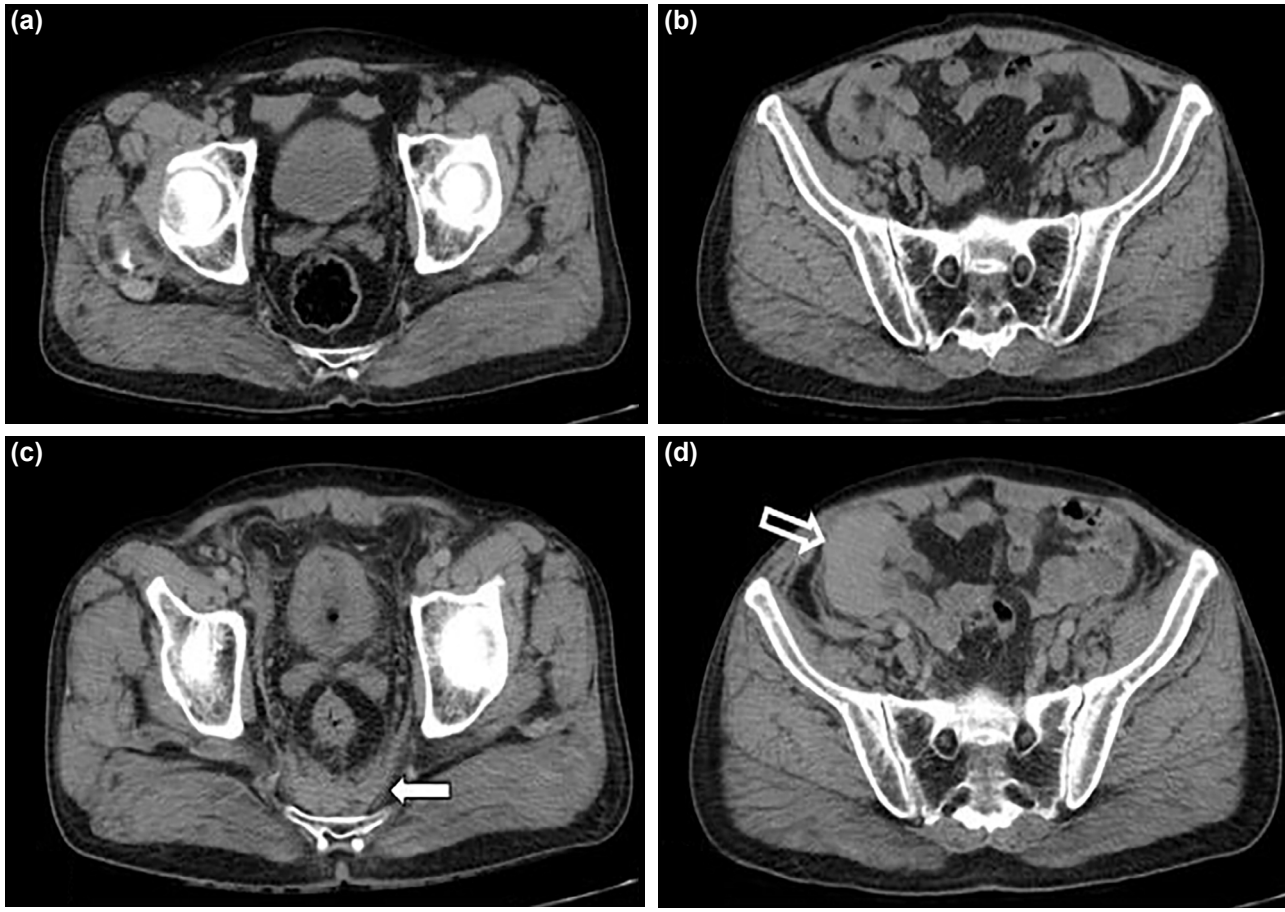

Figure 3. Presacral hemorrhage and intra-abdominal hematoma. **(a, b)**. Normal appearance on the initial unenhanced abdominal computed tomography (CT). **(c)** and **(d)**. On the 3rd day, contrast-enhanced abdominal CT revealed presacral hemorrhage (arrow) and a free fluid (hollow arrow) that may be compatible with intraabdominal high-density hematoma.

common finding and mild, if any. Abdominal CT in the pyelogram phase may show more prominent wall thickening in the ureter and narrowing of the lumen. CT also provides differential diagnosis of conditions such as tumor and external compression-related hydronephrosis. The resolution of the wall thickening in the ureter is expected in 2–4 weeks.[12] In our case, abdominal CT taken 3 months later showed resolution. Accompanying bleeding in other organs is rare. Our case had intestinal mural hemorrhage and presacral hemorrhage.

Another complication of anticoagulant therapy is intestinal mural hemorrhage. Spontaneous intramural hemorrhage is seen in the jejunum, ileum, and duodenum in descending order.[13] It is rarely seen in the colon and esophagus. In our case, it was observed in ileal loops. The incidence is 1:2500.[14] Intestinal mural hemorrhage most often occurs secondary to anticoagulant therapy. Abdominal CT findings include high-density intestinal wall thickening, luminal narrowing, and obstruction.[15] The first symptom is abdominal pain, usually accompanied by nausea and vomiting.[15] Intestinal mural hemorrhage should be kept in mind in patients using anticoagulants. In these cases, gastrointestinal bleeding, intra-abdominal bleeding, necrosis, and perforation may develop as a complication.[13] For treatment anticoagulants should be discontinued, oral intake is stopped and decompression is performed with nasogastric tube. Furthermore, fresh frozen plasma and Vitamin K should be given. The treatment is primarily conservative but surgery may be necessary if complications develop.

Conclusion

Suburothelial hemorrhage and intestinal mural hemorrhage are difficult to diagnose clinically. Non-contrast CT can help diagnose, differential diagnosis, and complications. Contrast-enhanced abdominal CT in the portal phase may contribute to the assessment of intestinal ischemia and abdominal CT in the pyelogram phase to evaluate ureteral wall thickness and lumen.

Informed Consent: Written informed consent was obtained from the patient for the publication of the case report and the accompanying images.

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Conflict of Interest: None declared.

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OLGU SUNUMU - *ÖZ*

Kumadin kullanımına sekonder gelişen subürotelyal kanama ve intestinal mural hemoraji

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Hem subürotelyal kanama hemde intestinal mural hemoraji oldukça nadir karşılaşılan karın ağrısı ve gros hematüri nedenleridir. Her iki tanıda da bilgisayarlı tomografi (BT) oldukça değerlidir. Biz mitral kapak replasmanı nedeniyle kumadin kullanan olguda sol subürotelyal kanama ve intestinal mural hemoraji olgusunu BT görüntüleri eşliğinde sunuyoruz.

Anahtar sözcükler: Bilgisayarlı tomografi; intestinal mural hemoraji; subürotelyal kanama.

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