Rectus sheath haematoma due to drug–drug interaction

Nikita Theophilus, Ghassan Bachuwa

Internal Medicine, Hurley Medical Center, Flint, Michigan, USA

Correspondence to
Dr Ghassan Bachuwa;
gbachuw2@hurleymc.com

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DESCRIPTION

A 68-year-old man presented with complaints of abdominal pain. A week earlier, he had influenza-like symptoms with fever as high as 40°C, chills and persistent cough. He was prescribed azithromycin 250 mg daily for 5 days. Two days after being started on azithromycin, he experienced abdominal pain. He described it as a shearing pain. It was initially restricted towards the right mid-abdomen, non-radiating and exacerbated on coughing. The pain gradually increased in intensity over the next 2 days and involved bilateral lower quadrants. Due to worsening abdominal pain, he sought medical attention. He was a known case of hypertension, coronary artery disease and atrial fibrillation on aspirin 81 mg and apixaban 5 mg two times a day. On examination, he was haemodynamically stable. Overlying skin changes were absent, but multiple swellings were palpable over the abdominal wall. Ultrasound of the abdomen showed a rectus sheath haematoma approximately 9.0 mm×45.6 mm in size (figure 1). Apixaban dose was lowered to half for 1 week, after which he resumed his original dose. Over the next 4 weeks, the pain and swelling gradually subsided.

Apixaban which is a novel oral anticoagulant is a direct factor Xa inhibitor (figure 2). Out of several indications, the one pertinent to this case is stroke prevention in non-valvular atrial fibrillation. Apixaban is primarily metabolised by cytochrome p450(CYP)3A4. A reduction to 50% of the prescribed dose of apixaban is recommended in patients receiving a strong cytochrome p450(CYP)3A4 inhibitor.¹ Although azithromycin is considered a mild inhibitor and the present literature does not recommend a dose adjustment, it poses as a risk factor for

Figure 2 Apixaban acts as a substrate for permeability glycoprotein (P-gp) and cytochrome 450 enzymes. Cytochrome 3A4 (CYP3A4) is the predominant cytochrome (CYP) enzyme that metabolises apixaban. Inducers and inhibitors of P-gp and cytochrome P450 enzymes can in turn decrease or increase the level of apixaban in circulation. Xa, activated factor X; II, factor II; IIa, activated factor II. ¹—Apixaban inhibits free and clot-bound factor Xa. ²—Cytochrome P450 enzyme inhibitors decrease the rate of metabolism and can increase apixaban levels in circulation. ¹ (This picture has been created and edited by Nikita Theophilus, MD, and Brandon Flues, PharmD.)

the development of a rectus sheath haematoma (RSH) in our case.²

RSH should be suspected in patients on anti-coagulants who present with abdominal pain and abdominal swellings in the setting of severe cough. A diagnosis can be made based on abdominopelvic CT or ultrasound. Management depends on the patient's clinical status. Most of the patients respond to supportive medical care, which includes volume resuscitation and symptomatic management. Refractory cases may require angiographic

Figure 1 Transverse plane ultrasound of the left lower abdominal wall showing a cystic mass with internal septation, measuring approximately 9.0 mm×45.6 mm, suggestive of rectus sheath haematoma.

Learning points

- ▶ Rectal sheath haematoma (RSH) should be suspected in patients on anticoagulants who present with abdominal pain following persistent cough.
- ▶ A diagnosis of RSH can be made by ultrasound or CT.
- ▶ Concomitant administration of factor Xa inhibitors and cytochrome p450(CYP)3A4 inhibitors increases the risk of bleeding.

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embolisation or surgical intervention.³ Oral anticoagulation can be restarted after stabilisation of haemoglobin and evidence of a stable or resolving haematoma. Resuming oral anticoagulation after 4 days was found to be safe in most of the patients, with thrombotic complications outnumbering bleeding episodes in patients where anticoagulation was withheld for too long after being diagnosed with RSH.⁴ The possibility of drug interactions should always be assessed when prescribing medications to patients on anticoagulants as bleeding episodes may prove to be fatal.

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Disclaimer Case reports provide a valuable learning resource for the scientific community and can indicate areas of interest for future research. They should not be used in isolation to guide treatment choices or public health policy.

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ORCID iD

Ghassan Bachuwa <http://orcid.org/0000-0001-8414-0067>

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