CASE REPORT

An unusual cause of abdominal pain in an HIV-positive man

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SUMMARY

We report a case of an HIV-positive man on antiretroviral therapy (ART) who developed abdominal pain due to acute-on-chronic intestinal ischaemia secondary to superior mesenteric vein thrombosis (SMVT) requiring emergency surgery. He was found to have persistently low levels of protein C on thrombophilia screening. To the best of our knowledge, the association linking SMVT to protein C deficiency in an HIV-infected patient has never been reported in the literature.

BACKGROUND

Superior mesenteric vein thrombosis (SMVT) is a rare disorder that can develop rapidly with intestinal infarction or subacutely with abdominal pain due to intestinal ischaemia. A hypercoagulable state and especially thromboses are emerging as clinical issues in patients with HIV infection. A variety of coagulation abnormalities have been identified in patients with HIV infection. Patients with advanced HIV infection are more likely to develop thromboembolism. Risk factors include low CD4 counts, the presence of anticardiolipin antibodies and lupus anticoagulant, low levels of proteins C and S, heparin cofactor II and antithrombin. The presence of anticardiolipin antibodies is linked with arterial and venous thrombosis whereas deficiencies of proteins C and S are associated with venous thrombosis.^{1 2} There have been a few reports of SMVT developing in patients with HIV infection.³

CASE PRESENTATION

A 68-year-old heterosexual Caucasian man with HIV infection was started on antiretroviral therapy (ART) consisting of stavudine, lamivudine and efavirenz in 2004. In 2005, his ART was switched to tenofovir, emtricitabine and efavirenz and he maintained good ART adherence. In March 2010, his CD4 count was 239 cells/mm³, and HIV RNA level was undetectable. There was no personal or family history of thromboembolism or thrombophilic disorders. There were no other risk factors for venous thrombosis such as malignancy, opportunistic infections or recent surgery.

In July 2010, he was admitted under the general surgeons for worsening abdominal pain over a 2-week period. A clinical diagnosis of small bowel obstruction was made. He underwent emergency laparotomy revealing a perforated ileum in the right iliac fossa. Resection of a 40 cm segment of the perforated gangrenous small bowel was performed. Pathological findings were consistent with acute-on-chronic mesenteric ischaemia and infarction.

Preoperative CT scan of the abdomen (figure 1) confirmed the presence of a partially occlusive thrombus in the superior mesenteric vein extending into the portal vein. The patient's preoperative blood tests showed low protein C (60.8%; normal range 75–160%) and low free protein S (44%; normal range 73–163%). Other coagulation parameters such as prothrombin time, activated partial thromboplastin time, fibrinogen, activated protein C ratio, antithrombin, thrombin clotting time, Kaolin clotting time test ratio, dilute Russell viper venom time (dRVVT) ratio, IgG and IgM cardiolipin antibodies, and full blood counts were all within normal ranges. Prothrombin and JAK 2 mutation studies were negative.

OUTCOME AND FOLLOW-UP

The patient was started on low-molecular-weight heparin followed by long-term warfarin after haematology review. He made a good recovery and was discharged from hospital after 11 days. Repeat blood tests 3 months later (with heparin bridging) revealed normal free protein S level (82.3%); however, protein C level was persistently low (64.5%). He remained well until April 2011, when he developed oesophageal carcinoma; he died of aspiration pneumonia in November 2011, at the age of 75.

DISCUSSION

Mesenteric venous thrombosis causing small-bowel infarction is an extremely rare cause of acute abdomen. Protein C deficiency is a well-documented cause of thrombophilia and venous thrombosis,

Figure 1 A contrast-enhanced CT of the abdomen showing (white arrows) a partially occlusive thrombus inside the superior mesenteric vein extending into the portal vein (red arrow). Small bowel dilation with highly abnormal loop in right iliac fossa can also be seen.

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Learning points

- ▶ Patients with advanced HIV infection are more prone to thromboembolism. Risk factors include low CD4 counts, the presence of anticardiolipin antibodies and lupus anticoagulant, deficiencies of proteins C and S, heparin cofactor II and antithrombin.
- ▶ The presence of anticardiolipin antibodies is linked with arterial and venous thrombosis whereas deficiencies of proteins C and S are associated with venous thrombosis.
- ▶ A high index of clinical suspicion is crucial for timely diagnosis and management of rarer disorders such as superior mesenteric vein thrombosis in acutely ill patients with HIV infection.
- ▶ A low threshold for thrombophilia screening in an acutely ill HIV-positive patient could allow detection of an underlying thrombophilic condition and early institution of appropriate antithrombotic therapy.

often at unusual sites including the superior mesenteric vein.⁴

The prevalence of acquired protein C deficiency has been documented to be higher in patients with HIV infection as compared to HIV-negative controls.⁵ It is more pronounced in sick HIV patients, particularly in the presence of opportunistic infections and malignancies.⁶ Chronic inflammatory states, endothelial injury/activation and autoimmune processes associated with chronic HIV infection have been postulated as underlying mechanisms for acquired protein C and S deficiencies, and other thrombophilic abnormalities.^{2 5 7}

A high index of clinical suspicion is crucial for timely diagnosis and management of SMVT because patients usually present with non-specific abdominal symptoms, as described in our case. A contrast-enhanced CT scan allows SMVT to be detected by a non-invasive method.

In many cases of mesenteric venous thrombosis, prompt anticoagulation can preserve bowel viability. Thrombectomy and thrombolytic therapy can be performed in selected patients with recent and limited thrombosis. In the context of massive mesenteric venous thrombosis, intravenous protein C concentrate has been used successfully.⁸

Competing interests None.

Provenance and peer review Not commissioned; externally peer reviewed.

REFERENCES

- 1 Yoganathan K, Benton A. Haemorrhagic transformation of cerebral infarction in an AIDS patient—thrombophilia screen essential. *Int J STD AIDS* 2009;20:801–2.
- 2 Yu-Min P, Frankel EP. Thrombosis and a hypercoagulable state in HIV-infected patients. *Clin Appl Thromb Haemost* 2004;10:277–80.
- 3 Hsiao CB, Piotrowski ES, Yoon S. Superior mesenteric vein thrombosis—a potential complication for HIV/HCV co-infected patients receiving protease inhibitor-containing antiretroviral therapy. *Antiviral Ther* 2000;5(Suppl 5):46(abstr no.P38).
- 4 Rharrit D, Harmouche H, Baroudi S, et al. Protein C deficiency and mesenteric venous thrombosis. *Can J Surg* 2009;2:E35–7.
- 5 Erbe M, Rickerts V, Bauersachs RM, et al. Acquired protein C and protein S deficiency in HIV-infected patients. *Clin Appl Thromb Haemost* 2003;9:325–31.
- 6 Feffer SE, Fox RL, Orsen MM, et al. Thrombotic tendencies and correlation with clinical status in patients infected with HIV. *South Med J* 1995;88:1126.
- 7 Majluf-Cruz A, Silva-Estrada M, Sanchez-Barboza R, et al. Venous thrombosis among patients with AIDS. *Clin Appl Thromb Haemost* 2004;10:19–25.
- 8 Mainwaring CJ, Makris M, Thomas WE, et al. Mesenteric infarction due to combined protein C deficiency and prothrombin 20210 defects. *Postgrad Med J* 1999;75:742–3.

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