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## CASE REPORT

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# Abdominal Pain Without a Cause?

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## ABSTRACT

*This report is of an unusual case of chronic abdominal pain in a 36-year-old man without past medical history. He complained of abdominal pain and weight loss of 30 kg over one year. Magnetic resonance imaging of the abdomen and pelvis and colonoscopy revealed no abnormality. Human immunodeficiency virus antibody serology was subsequently found to be positive. Despite three months of investigations, including abdominal and pelvic computed tomography, oesophagogastric duodenoscopy, and whole-body positron emission tomography / computed tomography study, no cause for his abdominal pain was identified. The patient then underwent computed tomographic aortography followed by mesenteric angiography, which demonstrated multiple areas of beading and stricturing within the jejunal branches of the superior mesenteric artery, consistent with human immunodeficiency virus-associated mesenteric vasculitis. The coeliac axis and renal arteries had normal appearances. Corticosteroid treatment resulted in symptomatic improvement. Mesenteric vasculitis in the context of human immunodeficiency virus infection is a rare clinical presentation, and is difficult to diagnose. However, this condition should be considered and investigated for in patients with human immunodeficiency virus presenting with abdominal pain, as it responds well to corticosteroid treatment.*

**Key Words:** AIDS-related opportunistic infections; Angiography; HIV infections; Mesenteric arteries; Vasculitis

## 中文摘要

# 沒有原因的腹痛？

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本文報告一名36歲男性出現慢性腹痛的罕見病例。病人一向健康良好，但腹痛已達一年，體重亦減輕了30公斤。腹部和盆腔的磁共振成像以及結腸鏡檢查並未發現異常。其後發現其人類免疫缺陷病毒（HIV）抗體血清結果呈陽性。歷時三個月的檢查包括腹部和盆腔CT、食道胃十二指腸鏡和全身正子攝影電腦斷層攝影，都未能找出病人腹痛的原因。病人後來進行CT主動脈造影及腸系膜血管造影，顯示腸系膜上動脈的空腸分支多個位置呈珠狀及收窄的表現，與HIV相關的腸繫膜血管炎症狀吻合。病人的腹腔動脈和腎動脈正常。類固醇治療令病情有改善。與感染HIV相關的腸繫膜血管炎很罕見，且難以診斷。如果HIV患者出現腹痛的症狀，為病人檢查時應考慮腸繫膜血管炎的可能性，其類固醇治療效果良好。

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## INTRODUCTION

Human immunodeficiency virus (HIV)-associated vasculitis affecting the mesenteric vessels is a rare diagnosis. The prevalence of this condition is likely to be underestimated and it may not always be considered in the investigation of abdominal pain. Additionally, its diagnosis is often delayed. HIV-associated mesenteric vasculitis is, however, an important diagnosis that physicians and radiologists should be aware of, as it responds readily to corticosteroid treatment. This report presents the challenging case of a young man, newly diagnosed with HIV, who was extensively investigated for chronic abdominal pain. A diagnosis of HIV-associated mesenteric vasculitis was eventually made based on the findings of mesenteric angiography.

## CASE REPORT

A 36-year-old man presented to the emergency department in February 2010 with a history of generalised abdominal pain and weight loss of 30 kg over one year. He had no relevant past medical or surgical history and there was no family history of note. He was admitted to hospital in the care of a general medical team. Magnetic resonance imaging (MRI) of the abdomen and pelvis and colonoscopy were performed, but revealed no abnormality. Brain and whole-body positron emission tomography (PET)/computed tomography (CT) was unremarkable, with no evidence of malignancy or underlying infection. During this admission he was newly diagnosed with HIV following a positive antibody serology test. One week following his initial presentation he underwent CT of the abdomen and pelvis, owing to ongoing severe abdominal pain and elevated blood inflammatory markers, alanine transaminase (317 U/L [reference range, 10-40 U/L]) and  $\gamma$ -glutamyltransferase (221 U/L [reference range, 0-30 U/L]). CT demonstrated fluid in the gallbladder fossa and a diagnosis of cholecystitis was suggested. Oesophagogastroduodenoscopy (OGD) and barium meal and follow-through were also performed, as his presentation was thought to be atypical for cholecystitis. OGD was normal and barium meal and follow-through revealed no small bowel thickening, stricture, or other mucosal abnormality.

The patient was discharged, but he re-presented several days later with persistent abdominal pain and was admitted for further investigation. He had a generalised tonic-clonic seizure and was transferred to the intensive care unit. MRI of the brain subsequently revealed several parieto-occipital lesions of unknown

aetiology. Fluorodeoxyglucose (FDG) PET of the brain was subsequently performed, which showed bilateral areas of asymmetric reduced FDG uptake in both occipital lobes, extending into the posterior parietal lobes. These areas of hypometabolism were reported as being in keeping with an underlying vasculitis or other inflammatory disorder. This result was surprising given that the brain and whole-body PET/CT performed as part of the patient's initial investigation had been unremarkable.

In view of the FDG PET brain findings, which suggested possible vasculitis, CT aortogram was performed in order to diagnose possible mesenteric vasculitis as a cause of the patient's abdominal pain. Coronal maximum intensity projection CT images demonstrated a beaded appearance in the jejunal branches of the superior mesenteric artery (Figure 1). Mesenteric angiogram was done, with employment of selective superior mesenteric artery (SMA) catheterization. Digital subtraction angiography showed several areas of irregularity and stricturing within the proximal jejunal branches of the SMA, in keeping with



**Figure 1.** Coronal maximum intensity projection computed tomography image of the aortogram demonstrates microaneurysms, beading, and stricturing (arrow) in the jejunal branches of the superior mesenteric artery in keeping with vasculitis.



**Figure 2.** Digital subtraction angiography image of selective superior mesenteric artery catheter angiography reveals multiple areas of irregularity and stricturing (arrows) in the proximal jejunal arteries consistent with HIV-associated vasculitis.

HIV-associated vasculitis (Figure 2). Further selective catheterization of the coeliac axis and renal arteries failed to demonstrate evidence of micro-aneurysms. The patient was commenced on oral corticosteroids, which resulted in definite symptomatic improvement.

## DISCUSSION

Vasculitis in the context of HIV infection is rare, with a reported incidence of only 1%.<sup>1</sup> Many types of vasculitis may be seen in the context of HIV, affecting small, medium, and large vessels. The skin, skeletal muscles, and peripheral nerves are most often affected,

and gastrointestinal involvement is rare.<sup>2</sup> As a result of underlying immunodeficiency, a large proportion of patients will be co-infected with opportunistic pathogens such as cytomegalovirus, herpes simplex virus, and toxoplasma, resulting in infective vasculitis, and these pathogens should be sought when trying to elucidate the underlying aetiology. However, HIV-associated vasculitis can occur in the absence of such secondary pathogens, and no such pathogen was identified in this patient, whose CD4 count was greater than 300.

Polyarteritis nodosa (PAN)-like vasculitis can also be seen in HIV, in which gastrointestinal involvement occurs more often; however, mesenteric involvement is still relatively uncommon when compared with classical PAN. In 2009, Gajera and Kais<sup>3</sup> presented the case of a young HIV-infected woman with chronic abdominal pain, the cause of which remained undiagnosed despite extensive investigation. She eventually underwent mesenteric angiography, which revealed multiple small microaneurysms consistent with PAN-like vasculitis. This entity is distinct from classical PAN, in that hepatitis B serology is negative, there is lack of multisystem involvement, and smaller vessels are usually affected.

Mesenteric vasculitis in the context of HIV infection is a rare clinical presentation, and is difficult to diagnose. However it should be considered and investigated for in patients with HIV presenting with abdominal pain, as it responds well to corticosteroid treatment.

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