**Letters to the Editor**

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**Gastrointestinal symptoms and granulomatous vasculitis involving the liver in giant cell arteritis: a case report and review of the literature**

_Sir, We report a woman with GCA presenting with gastrointestinal symptoms. Liver biopsy demonstrated the rare finding of granulomatous arteritis. A 65-year-old woman was admitted as an emergency to the gastroenterology ward with a 10-day history of nausea, loss of appetite and weight loss. Apart from hypertension and a hiatus hernia, she was normally fit and well. On examination she was febrile, with a tender right upper quadrant of the abdomen. Cardiovascular, respiratory and neurological examinations were unremarkable.

Blood tests showed raised liver enzymes [alkaline phosphatase (ALP) 298, γ-glutamyl transpeptidase (GGT) 224 and alanine aminotransferase (ALT) 37 U/l], low albumin (29 g/l), raised inflammatory markers (CRP 257 mg/l) and a normal amylase (28 U/l). Haemoglobin was 11.9 g/dl. Abdominal US and CT of the abdomen and pelvis were normal. An oesophagogastroduodenoscopy (OGD) showed Barrett’s oesophagus. She was started on co-amoxiclav for presumed cholecystitis and discharged after 6 days.

Nineteen days later she was readmitted with progressively worsening nausea, loss of appetite, malaise and fever. She had lost 6.3 kg in weight since the last admission. Liver biochemistry had further deteriorated (ALP 1038 and ALT 141 U/l). CRP remained raised (211.5 mg/l), and haemoglobin had dropped (Hb 10.0 g/dl). Magnetic resonance cholangiopancreatography (MRCP) showed no evidence of cholecystitis.

Screening tests for autoantibodies (including ANCA), hepatitis serology (B and C) and coeliac disease were negative. Mantoux test was normal. Inflammatory markers remained significantly raised (ESR 114 mm/h). Apart from right upper quadrant pain, the patient had no other localized symptoms or signs of vasculitis or CTD. There was no peripheral eosinophilia, neutrophilia or leucocytosis.

Biopsies were taken of the liver and temporal arteries. A liver biopsy demonstrated non-caseating epithelioid cell granulomatous inflammation of medium-sized arterioles within the portal tracts (Fig. 1). The inflammation was largely adventitial, but there was associated subintimal fibrosis and disruption of the elastic laminae. There was no fibrinoid necrosis, acute inflammation or eosinophil infiltrate. Bile ducts were unremarkable and the granulomatous change was not related to bile duct destruction. The overall appearance was that of a granulomatous arteritis.

High-dose prednisolone was commenced. Dramatic improvement was seen after 3 days of treatment. The fever, inflammatory markers (ESR 54 mm/h and CRP 34 mg/l) and liver enzymes (ALP 186, ALT 54 and GGT 163 U/l) stabilized. Follow-up after 1 month of steroid therapy demonstrated normal liver function and inflammatory markers.

Before discharge, a temporal artery biopsy was performed for definitive diagnosis, which showed florid transmural lymphohistiocytic infiltrate with many giant cells, in keeping with active GCA. There was associated fibrointimal hyperplasia and fragmentation of the internal elastic lamina.

GCA is a granulomatous vasculitis. Biochemical abnormalities of liver function, most commonly ALP, occur in one-third to one-half of patients with GCA [1]. Transaminases ALT and AST can also be mildly raised in 10–40% of patients [1]. The aetiology of abnormal liver enzymes remains unclear. It has been postulated that elevation of ALP results from cholestasis secondary to ischaemic injury and cytokines. Cholangiocytes lining the bile ducts depend on blood supply from the hepatic artery, in contrast to liver parenchyma, which receives a dual supply from the hepatic artery and portal vein. Cholangiocytes are, therefore, relatively susceptible to ischaemia, leading to duct atrophy and ductopenia [2]. However, this was not found in our case. Cholangiocytes also secrete inflammatory cytokines such as IL-1β and TNF-α, which have been shown to down-regulate hepatic bile salts transporters sodium taurocholate co-transporting polypeptide (NTCP) and bile salt export pump (BSEP) [3]. In addition, ultrastructural damage to bile canaliculi on electron microscopy has also been demonstrated in GCA [4].

In contrast to the relatively common finding of asymptomatic raised liver function tests in patients with GCA, symptomatic liver involvement is extremely rare. However, it was reported in the 1970s, and more recently by Heneghan [5] and Goulding [6]. Prognostically, liver involvement seems not to be important [7]. Our patient’s presentation of GCA is unusual, as the only localizing symptom was abdominal pain. A previous case has been reported in a 48-year-old man who underwent a cholecystectomy before GCA was diagnosed [8].
another case, a 69-year-old woman presented with right-sided abdominal pain and hepatomegaly—a laparotomy was performed before the diagnosis of GCA was made [9]. There are few reports of liver biopsy in GCA. These are mostly normal, or show non-specific changes including cholestasis, steatosis, perisinusoidal lipocyte hyperplasia and hepatocellular necrosis [10].

Our case demonstrates that GCA can present in unusual ways. Presentation with gastrointestinal symptoms can lead to diagnostic delay, unnecessary investigations and occasionally surgery. Timely treatment is the most important factor in preventing serious complications, including blindness, aortic aneurysm and dissection, myocardial infarction and cerebral vascular accident. Furthermore, since GCA is a condition of the elderly, its prevalence in an ageing population is expected to increase. We therefore recommend that GCA should be considered in a setting of fever, gastrointestinal symptoms and raised ESR in those >50 years.

Rheumatology key message

- GCA can present with gastrointestinal symptoms in the absence of other localizing symptoms.

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