Hepatic giant cell arteritis and polymyalgia rheumatica

DONALD R DUERKSEN MD, LAURENCE D JEWELL MD, VINCENT G BAIN MD

DR DUERKSEN, LD JEWELL, VG BAIN. Hepatic giant cell arteritis and polymyalgia rheumatica. *Can J Gastroenterol* 1994;8(1):36-38. Polymyalgia rheumatica (PMR) is a clinical syndrome of the elderly characterized by malaise, proximal muscle aching and stiffness, low grade fever, elevated erythrocyte sedimentation rate and the frequent association with temporal giant cell arteritis. The authors describe a case of PMR associated with hepatic giant cell arteritis. This lesion has been described in two other clinical reports. The distribution of the arteritis may be patchy; in this report, diagnosis was made with a wedge biopsy performed after an initial nonspecific percutaneous liver biopsy. The authors review the spectrum of liver involvement in PMR and giant cell arteritis. Hepatic abnormalities respond to systemic corticosteroids, and patients with hepatic arteritis have a good prognosis.

Key Words: Giant cell, Hepatic arteritis, Polymyalgia rheumatica

Artérite hépatique à cellules géantes et polymyalgie rhumatismale

RÉSUMÉ : La polymyalgie rhumatismale est un syndrome clinique de la personne âgée caractérisée par malaise général, douleurs et raideurs musculaires proximales, faible fièvre, vitesse élevée de sédimentation des érythrocytes et association fréquente avec une artérite temporale à cellules géantes. Les auteurs décrivent ici le cas d'une polymyalgie rhumatismale associée à une artérite hépatique à cellules géantes. Cette lésion a été décrite dans deux autres rapports cliniques. La distribution de l'artérite est disséminée et, selon les rapports des auteurs, le diagnostic a été établi à l'aide d'une biopsie cunéiforme effectuée après une biopsie hépatique percutanée non spécifique. Les auteurs passent en revue l'étendue de l'atteinte hépatique dans la polymyalgie rhumatismale et l'artérite à cellules géantes. Les anomalies hépatiques répondent à l'administration de corticostéroïdes par voie systémique et les patients atteints d'artérite hépatique ont un pronostic favorable.

Departments of Medicine and Pathology, University of Alberta, Edmonton, Alberta

Correspondence: Dr VG Bain, Department of Medicine, 2E3 27 Walter Mackenzie Centre, 8440-112 Street, Edmonton, Alberta T6G 2R7. Telephone (403) 492-7238

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POLYMYALGIA RHEUMATICA (PMR) is a clinical syndrome characterized by malaise, proximal muscle aching and stiffness, weight loss and low grade fever. It commonly occurs in the elderly and is associated with an elevated sedimentation rate. Giant cell arteritis is frequently associated with PMR (1). While involvement of the temporal artery with a granulomatous panarthritis is most common, other sites – including the aorta and branches of the aortic arch, arteries of the head and neck, and coronary arteries – may be involved (2,3). We report a case of PMR-associated with granulomatous arteritis of the liver and review the spectrum of liver involvement in PMR.

CASE PRESENTATION

A 64-year-old Caucasian female was admitted to hospital with a six-month history of malaise, intermittent fever, a 13.6 kg weight loss and back ache. The patient described pain in her hips, thighs and lumbosacral area which had not improved with acetylsalicylic acid. She had not noted muscle weakness or headache.

Prior to this illness, the patient had been well, with previous hospitalizations for an appendectomy, elective gynecological surgery and for the birth

of five children. She was a nonsmoker and nondrinker, and her current medication included lorazepam and conjugated estrogens. There was no past history of liver disease.

On admission to hospital, the patient was afebrile. Fundoscopic examination was normal and there was no temporal artery tenderness. There were no cervical or supraclavicular lymphadenopathies. Abdominal examination revealed a palpable, nontender liver 2 cm below the right costal margin with no associated splenomegaly. Direct palpation of her lumbosacral area demonstrated tenderness over both sacroiliac joints. The remainder of her physical examination was within normal limits. There was no stigmata of chronic liver disease.

Laboratory investigations showed: hemoglobin, 13.6 g/dL; white blood cell count, $8.8 \times 10^6/L$ with 7% eosinophils; erythrocyte sedimentation rate (ESR), 51 mm/h (normal 0 to 15); aspartate transaminase, 20 IU/L (normal 10 to 50); alkaline phosphatase, 192 IU/L (normal 40 to 110); 5' nucleotidase, 19 IU/L (normal 5 to 15); prothrombin time, 10.4 s (control 11.0). The remainder of the Sequential Multiple Analysis - 12-channel biochemical profile (SMA-12) was normal. Urinalysis, thyroid function tests and serum protein electrophoresis with quantitative immunoglobulins were normal. Fluorescent antinuclear antibody, anti-DNA antibody, rheumatoid factor, anti-mitochondrial antibody and antismooth muscle antibody were negative. Radiological investigations including chest x-ray, abdominal ultrasound, intravenous pyelogram, liver spleen scan and bone scan were all normal. No abnormalities of the sacroiliac joints were identified. Bone marrow aspiration and biopsies were negative for mycobacteria on stain and culture, and there was no evidence of infiltrative disease. A lower limb lymphangiogram demonstrated bilateral enlargement of inguinal lymph nodes, and enlarged nodes of the iliac and para-aortic chain.

A percutaneous liver biopsy showed only a mild lymphocytic infiltrate confined to the portal triads. There was

Figure 1 Section through the surgical liver biopsy demonstrates a portal triad with a portal vein (PV), hepatic arteriole (HA) and bile ducts (BD). The triad is infiltrated with a chronic lymphocytic infiltrate and a granuloma (G) invading the wall of the hepatic arteriole (hematoxylin and eosin, original magnification $\times 60$)

minimal steatosis and mild Kupffer cell hyperplasia. There were no fibrosis, cholestasis or granuloma formations.

Because of the patient's persistent fever and abnormal lymphangiogram, a laparotomy was performed to exclude a possible intra-abdominal lymphoma. A wedge biopsy of a normal-appearing liver was taken. Enlarged celiac, common bile duct and sigmoid mesenteric lymph nodes were also biopsied.

The surgical liver biopsy showed a portal lymphocytic infiltrate. In addition, granulomatous inflammation of hepatic arterioles was present (Figure 1). The vessel walls were thickened and the adventitia infiltrated with multinucleated giant cells. Two of the lymph node biopsies showed reactive lymphoid hyperplasia while the third showed a granulomatous arteritis in an adjacent medium-sized artery.

On the basis of the patient's clinical presentation and biopsy findings, a diagnosis of PMR with hepatic giant cell arteritis was made. She was started on prednisone 40 mg/day, which induced a prompt clinical response. Follow-up ESR and alkaline phosphatase levels returned to normal. The prednisone was gradually tapered and eventually dis-

continued without clinical or biochemical relapse.

DISCUSSION

Numerous nonspecific hepatic histological abnormalities have been described in PMR, including granuloma formation (4-6), portal lymphocytic infiltration (6,7), hyperplasia of Ito cells (7), fatty change (8), parenchymal inflammations (6,7) and cholestasis (9). In a review of reported cases of patients with PMR and/or temporal arteritis who underwent liver biopsy, Sonnenblick et al (10) found an abnormal biopsy in 19 of 26 patients (73%).

Hepatic arteritis, first described in 1954 in a postmortem examination by Heptinstall and colleagues (11), has been infrequently reported. In the 1970s, Lie et al (12) and Soelberg-Sorenson et al (13) reported a similar postmortem hepatic histology. Since then, two cases of clinical PMR and biopsy-proven temporal and intrahepatic arteritis have been published (14,15). The diagnosis of hepatic arteritis was made by wedge biopsy in one case (14) and by percutaneous biopsy in the second (15). In the case we describe, the initial percutaneous liver bi-

opsy showed only nonspecific portal inflammation. The diagnosis of arteritis was made after a wedge biopsy was performed at laparotomy. In patients with PMR and temporal arteritis, skip lesions are frequent (16). Intrahepatic involvement may also be patchy – thus, the greater sampling area afforded by a wedge biopsy is more sensitive in the detection of hepatic arteritis. The vast majority of liver biopsies in patients with PMR have been percutaneous, which may account for the infrequent reporting of intrahepatic arteritis.

Liver function tests are frequently abnormal in PMR (17,18). While mild transaminase elevations may occasionally occur, alkaline phosphatase of hepatic origin is frequently elevated

(19,20). This elevation occurs in both biopsy-proven temporal arteritis (49%) and in PMR alone (30%) (9). Possible explanations for this abnormality include bile duct inflammation from adjacent arteritis, granulomatous inflammation of the bile duct and nonspecific portal tract inflammation. As in the case we have described, systemic corticosteroid therapy has always been associated with a prompt normalization of liver enzymes (9). Liver dysfunction as measured by impaired bromsulphophthalein (BSP) excretion has also been frequently reported in both patients with temporal arteritis and PMR (21).

Liver scans are frequently abnormal in patients with PMR. A recent uncontrolled report by Kyle *et al* (22) de-

scribes abnormal patchy liver scans in seven of 29 patients (24%) with PMR/giant cell arteritis. Repeat scanning after therapy and clinical response showed no resolution of these abnormalities, suggesting that some permanent structural damage may occur in some patients. However, there have been no reports of chronic liver disease attributable to PMR.

The hepatic involvement in PMR is believed to be part of a generalized systemic process that responds well to steroid therapy. Patients with intrahepatic arteritis do not appear to have a different prognosis and all three reported cases have resolved clinically and biochemically with corticosteroid therapy.

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