**Gastrointestinal radiology**

**MRI and colour-Doppler in sclerosing mesenteritis**

M. F. Bellin¹, L. E. Thi Huong Du², G. Sarfaty¹, H. Mayaudon², J. M. Hardin³, P. Godeau², and J. Grellet¹

Departments of ¹ Radiology and ² Internal Medicine, Hôpital La Pitié, 83 Bld. de l'Hôpital, 75651 Paris CEDEX 13, France
³ Department of Internal Medicine, Hôpital de Soissons, France

**Abstract.** We present a case of sclerosing mesenteritis with fibrofatty thickening of the mesentery. Ultrasonography showed an echodense mesenteric mass and colour-Doppler displayed patent mesenteric vessels with high vascular resistance. On CT, low-density areas suggesting fatty infiltration were seen in the mesentery. MRI showed low-signal areas suggesting a fibrous component of the mesenteric mass and GRASS imaging confirmed normal patency of the mesenteric vessels.

**Key words:** Mesentery inflammation - Colour Doppler - Computed tomography - MRI studies

**Introduction**

Sclerosing mesenteritis is a rare disease of unknown aetiology characterised by recurrent episodes of moderate to severe abdominal pain, diarrhoea and weight loss [1, 2]. Pathological features include fibrofatty thickening of the mesentery with various degrees of fat necrosis, chronic inflammation and fibrosis [1, 2]. Radiological features have been previously described [2-4]. The first description of MRI in sclerosing mesenteritis has recently been published [5]. MRI has proved helpful in evaluating the nature of the lesion and delineating vascular involvement. We present a case in which CT findings were correlated to both MRI and colour-Doppler findings. MRI and colour-Doppler allowed assessment of vascular disease.

**Case report**

A 31-year-old Caucasian woman was first admitted for acute abdominal pain and diarrhoea. Physical examination revealed periumbilical tenderness. Her temperature was 38°C. Laboratory data included a white-blood-cell count of 29000/mm³, an erythrocyte sedimentation rate of 94 mm/h and normal urinary profile. Other laboratory tests were unremarkable. On colioscopy the uterus and the ovaries were normal. Exploratory laparotomy revealed displacement of small-bowel loops with irregular fold thickening. Adhesions were noted between the ileal loops which were distorted and appeared congested. The mesentery in the area of the jejunum and ileum was thickened and indurated with a lobulated appearance. A few regional lymph nodes appeared enlarged. The right colon and the appendix had a normal appearance. Biopsy of the mesentery showed fibrous tissue proliferation and areas of fat necrosis with associated lipophagic reaction and presence of lipid-laden macrophages. Subacute inflammatory changes and localised areas of increased vascularity were noted. Biopsy of an enlarged lymph node showed non-specific inflammation. The patient was treated conservatively. Four months later, after several episodes of recurrent abdominal pain, CT was performed and showed a 60 mm mesenteric mass (Fig. 1a), with spontaneous soft tissue density and heterogeneous enhancement. It contained multiple low-density areas suggesting fatty infiltration. The patient was treated symptomatically but experienced recurrent abdominal pain. She was readmitted, 1 year after the initial episode. She complained of abdominal pain and a 15 kg weight loss over the previous 10 months. Her temperature was 39°C. Physical examination revealed tenderness of the left lower quadrant with a palpable, firm, mass. Laboratory data included a white-blood-cell count of 19220/mm³ with 88% neutrophils, haemoglobin of 12.8 g/dl, erythrocyte sedimentation rate of 70 mm/h, and serum fibrinogen of 7.8 g/dl. Other laboratory tests were noncontributory. Immunological tests were negative. CT (Fig. 1b) showed a decrease in size of the mesenteric mass which appeared lobulated.

Colour-Doppler (Acuson 128, Mountain View, Cal., USA) showed an echodense mesenteric mass with 1 cm hypo-echoic areas (Fig. 2). Mesenteric vessels were clearly visible within the mass; the resistive index was 0.81 in
jejunal and ileal arterial branches, indicating high vascular resistances. MRI (Signa, General Electric, Milwaukee, WI, USA) operating at 1.5 T was performed to better assess vascular involvement and the degree of fibrous reaction. On T1-weighted images, the mass was of intermediate signal intensity (Fig. 3a) with a decrease in signal intensity on fat-suppressed T1-weighted images (Fig. 3b). On T2-weighted images, the mass was of intermediate signal intensity (Fig. 4). GRASS imaging (33/13, flip angle = 30°) showed numerous patent vessels within the mass (Fig. 5). Association of recurrent abdominal pain, leucocytosis, mesenteric mass and histological changes suggested sclerosing mesenteritis. Abdominal pain was controlled with corticosteroids [(Prednisone (30 mg/day) and Colchicine (1 mg/day)]. The patient's symptoms rapidly improved and there was no recurrence of abdominal pain over a 12-month follow up.

**Discussion**

Sclerosing mesenteritis affects twice as many males as females. It has been described in patients aged 8 to 80 years, with a peak of frequency between the third and sixth decades in males and the second and fourth decades of life in women [6] as in our case. The aetiology is uncertain although ischaemia and an auto-immune process have been proposed as causative factors [2]. Sclerosing mesenteritis characteristically involves the mesentery of the small bowel, but cases of colonic mesenteritis have been reported [2, 5, 7, 8]. The lesions consist of inflammation, fatty degeneration and subsequent fibrosis with scarring and retraction. According to the predominant pathological process the disease has also been called mesenteric panniculitis, Weber-Christian disease, primary liposclerosis, mesenteric lipofibromatosis, and retractile mesen-