best revealed the extent of ischemic damage and in turn determined the extent of resection.

Both of our patients fared well, presumably because the pancolonic nature of the ischemia was recognized at their respective second laparotomy and the entire colon removed.

Conclusions

Ischemic pancolitis should be considered in the differential diagnosis of ischemic colitis, particularly in patients with a hypotensive prodrome. Although indications for surgery do not differ from those of segmental ischemia, vigilant examination of the entire colon at laparotomy as well as cautious pre- or intraoperative colonoscopy are necessary in order to recognize the diffuse nature of the disease and to initiate appropriate management.

Competing interests: None declared.

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Chylous ascites secondary to small-bowel angiosarcoma

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A 57-year-old man arrived at hospital after 10 weeks of progressive abdominal distention and shortness of breath. His medical history included multiple hereditary osteochondromatosis and development 8 years before of a secondary chondrosarcoma of his right hemipelvis, for which he underwent a right internal hemipelvectomy and subsequent postoperative radiotherapy. There was no evidence of recurrent chondrosarcoma.

Upon physical examination, his abdomen was distended and a fluid wave could be elicited. There was no evidence of hepatosplenomegaly or lymphadenopathy.

Paracentesis drained 9.5 L of milky fluid with total protein content 38 g/L, glucose 6.2 mmol/L, cholesterol 2.68 mmol/L and triglycerides 8.45 mmol/L; cytological examination found no cells.

Abdominal CT, repeated paracentesis, hepatitis B and C serology, 1-step tuberculosis test, radionucleotide lymphangiography, abdominal MRI, colonoscopy and upper gastrointestinal endoscopy all failed to yield any etiology for the ascites.

Laparotomy to search for an underlying malignancy found multiple fluctuant, 0.3–1.4 cm cream-coloured cysts studding the surface of the patient's small bowel. They drained chylous fluid when incised. A segment 75–90 cm long of convoluted, indurated small bowel was resected and a small-bowel anastomosis performed. The right-hemipelvis transection line felt clean.

Histopathological analysis revealed multiple foci of high-grade angiosarcoma in the small bowel and mesentery with associated lymphatic obstruction corresponding to the cystic lesions identified grossly. Tumour was identified microscopically at both proximal and distal resection margins.

After surgery the patient refused further treatment. He was managed with palliative care and died 4 months after surgery.

In the Western world, chylous ascites results most often from malignancy. The proposed pathophysiological mechanism[1] is obstruction of lymphatic flow between the bowel and cisterna chyli by a tumour, with resultant serosal lymphatic dilatation and leakage of lymph into the peritoneal cavity. Radiation therapy to the abdomen can cause chylous ascites from radiation-induced fibrosis and obstruction of lymphatic vessels in the small bowel and mesentery; it occurs, on average, a year after radiation therapy,[2] and was therefore an unlikely cause in this case. Other causes of chylous ascites, including congenital abnormalities, filiarial parasites, tuberculosis, liver cirrhosis, trauma and nephrotic syndrome, were ruled out by clinical history, biochemical and imaging studies.

After exploratory laparotomy, small-bowel angiosarcoma was deemed to be the likely cause of the ascites. Angiosarcomas, as a group, are uncommon. Primary small-bowel angiosarcomas are even rarer.[3] In this case, we suspect that the

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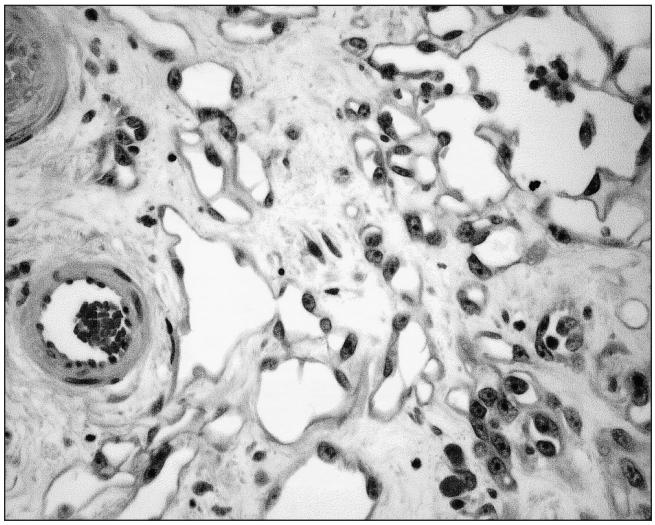

FIG. 1. Well-differentiated area of angiosarcoma with numerous ecstatic, irregular blood vessels lined by enlarged endothelial cells with prominent nucleoli. The small normal arteriole offers comparison.

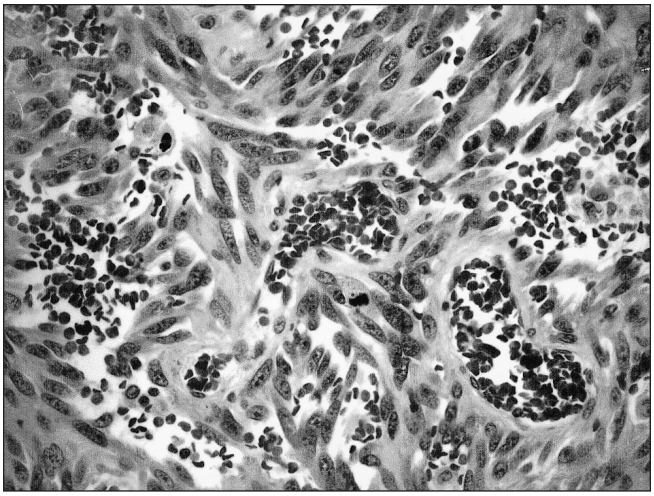

FIG. 2. Poorly differentiated area of angiosarcoma composed of solid sheets of spindled cells with enlarged nuclei containing coarse chromatin, prominent nucleoli and mitotic figures. Numerous extravagated red blood cells are present; blood-vessel formation is rudimentary.

angiosarcoma resulted from radiation to the small bowel. Long-term follow-up of patients who have had radiation therapy has shown an overall risk for postirradiation sarcoma development of between 0.03% and 0.8%, of which one-third are angiosarcomas.[4] Criteria for diagnosing postirradiation sarcoma proposed in 1948 by Cahan and colleagues[5] include no evidence either clinically or microscopically of the antecedent malignant lesion, development of the malignancy in the radiation field, a sufficiently long latency between irradiation and the second malignancy, and histological confirmation of the sarcoma. This patient fulfilled these criteria.

This case presented a challenge in finding an etiology. It serves as a reminder that malignancy is the most common cause of chylous ascites in the western world and should be suspected even when no radiologic or clinical evidence of an underlying malignancy is obvious. In this situation, exploratory laparotomy can be a useful diagnostic tool.

Competing interests: None declared.

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