Metastatic gastrointestinal stromal tumor and hypercalcemia in a patient with ulcerative colitis

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ABSTRACT

A 45-year-old man suffering from intermittent rectal bleeding was diagnosed with ulcerative colitis involving the descending colon and rectum. After 2 years on ulcerative colitis treatment, he presented with metastatic gastrointestinal tumor, liver and peritoneal symptomatic and clinical response.

Case Report. A 45-year-old gentleman presented intermittent bleeding per rectum. Colonoscopic examination and biopsies revealed extensive colitis involving the rectum, and the left side of colon, and features of ulcerative colitis (Figure 1). He was started on prednisolone and salazopyrin; however, his illness was complicated with fissure in ano, perianal abscess, and pelvic abscess requiring surgical intervention. Two years after the initial diagnosis, he was referred to our service due to marked deterioration in his general condition over a period of 2 months, with frequent intermittent generalized abdominal pain, recurrent vomiting, loss of appetite, and of abdominal masses. On clinical examination, he
were palpable. A CT scan of the abdomen and pelvis (Figure 2) showed multiple extensive hypodense lesions in both lobes of the liver; suggestive of liver metastases. There were extensive omental and peritoneal thickening associated with a large pelvic mass. A CT-guided liver biopsy and laparoscopic biopsy of peritoneal, and omental deposits, showed metastatic spindle cell tumor suggestive of malignant GIST (Figure 3). Immunohistochemically, the lesions were strongly positive for CD34 and CD117, and negative for cytokeratin with interspersed lesions with positivity for S100. His upper and lower gastrointestinal endoscopies showed normal mucosal surfaces. The other investigations showed g/L, hypercalcemia with albumin corrected calcium of 3.02 mmol/l, and hypochromic microcytic anemia. His whole body $^{99}$Tc methyl diphosphonate bone scintigraphy was normal.

In view of the metastatic GIST, he was started on Imatinib mesylate, 400 mg daily single dose. A gradual symptomatic and objective improvement was noted over the period of 12 weeks with and softening, and shrinking of abdominal masses clinically. A follow up CT scan performed 24 weeks after the initiation of therapy showed a good radiological response (Figure 2). His hypercalcemia was treated with zoledronic acid (4 mg intravenous infusion over 15 minutes), and did not reoccur on follow up. His ulcerative colitis remained in
of recurrent rectal bleeding. The inflammatory process involving the rectum and left side of the colon reoccurrence of ulcerative colitis.

**Discussion.** The current case demonstrates the following observations: 1. The association between GIST and ulcerative colitis that has been described previously by a single case report with localized GIST, but not with such extensive metastases; 4, 2. The concomitant occurrence of hypercalcemia; 3.

effects on the natural course of his ulcerative colitis. Our patient presented with extensive liver and peritoneal cavity associated with a pelvic mass. Thus, he falls into the 10-30% of the malignant GIST category that behaves either with local invasion or distant metastasis, or both. 3, 5 Usually, metastasis tends to occur in the liver, and within the peritoneal cavity, although, bony metastasis and metastasis to other visceral organs are also recognized. 3, 5

The biopsy proven ulcerative colitis involving the rectum and descending colon, preceded the diagnosis of metastatic GIST. The link between the GIST and ulcerative colitis is unclear; however, implicated. The immunophenotypic (CD117 positive), and ultrastructural resemblance of GISTs pacemaker cells, which control gut motility, suggests a histogenesis from the latter cells. It bowel disease that may result in a malignant change.

ascertain where the GIST has risen, due to the extensive metastasis and the normal colonoscopy at presentation. The presence of a large pelvic mass closely related to the rectal area, suggests that the tumor may have risen from the outer colorectal wall. This is particularly interesting, as several tumors, including adenocarcinoma and Kaposi sarcoma, bowel disease. 4 It remains a postulate, whether the disease besides the long-term exposure to steroids, and sulfasalazine may have favored the ground for an acquired c-Kit mutation. 4 hypercalcemia without bony metastasis suggests an ectopic mechanism. Unfortunately, at the time of due to unavailability of the parathyroid-hormone-related peptide assay in Oman. The prompt response and maintained remission to zoledronic acid, and Imatinib is particularly interesting.

In general, inoperable GISTs have demonstrated chemo and radio resistance. It has been demonstrated respond to targeted therapy using Imatinib, a synthetic tyrosine kinase inhibitor, which now has an established role in the management of chronic myeloid leukemia. 2 Chronic myeloid leukemia is characterized by a translocation between chromosomes 9 and 22, which produces a chimeric protein (BCR-ABL) with tyrosine kinase activity. Imatinib acts by occupying the kinase pocket of the BCR-ABL oncoprotein, preventing phosphorylation of its substrate. Imatinib is also effective against a number of other tyrosine kinases including c-kit and platelet derived growth factor. 2 Hence, irrespective of the underlying cause for such concomitant association between GIST and ulcerative colitis, he has responded remarkably well in treatment with bowel disease remained unaltered by the treatment with Imatinib.

**References**

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