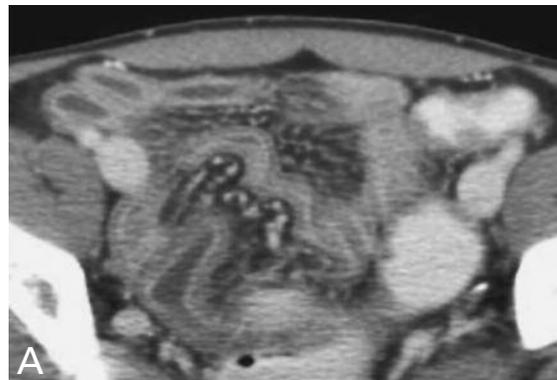


## INTESTINAL ACUTE GRAFT VERSUS HOST DISEASE

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**Key-word: Grafts**

**Background:** We present a case of a 23-year-old man having drug addiction. He is managed by the department of hematology for an idiopathic medullar aplasia. Two months before his admission, he was treated with bone marrow transplantation. During follow-up, we noted a non-specific recent cutaneous lesion. He was admitted for acute digestive symptoms including anorexia, nausea, vomiting and abdominal pain.



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## Work-up

Contrast-enhanced CT scan view of the upper abdomen (Fig. 1) shows on section at the level of the upper abdomen enhancement of the mucosal layer of the jejunal loops and wall thickening of the left colon.

CT scan, sections at the level of the pelvis (Fig. 2), demonstrates mild thickening of the small bowel loops with increased enhancement of the mucosal layer of the intestine.

Abnormal visualization of the small vessels of the mesenteric root, so-called an engorgement of the vasa-recta giving the "the comb sign", is also observed.

## Radiological diagnosis

Based on the radiological findings and the clinical story, the diagnosis of *acute graft versus host disease* of the bowel was suggested and was furtherly confirmed with endoscopic and histologic data.

## Discussion

The acute graft versus host disease (GVH) is a disease due to reaction of T-lymphocytes of the graft against the host. The mature lymphocytes of the graft are presenting a cytotoxic action on target organs of the receiver, including skin, liver and intestine. Concerning the intestine, the basic lesions are glandular necrosis of the cryptic epithelium and lymphocytic infiltration. This condition is mainly reported in the follow-up of bone marrow transplantation (within the 100 first days), more frequently in allogenic transplantations. It has a mortality of 15%. The usual clinical findings are abdominal cramps, diarrhea, fever, nausea and vomiting. The differential diagnoses to consider are gastro-intestinal infections, neutropenic colitis and pseudomembranous colitis. Other conditions are the intestinal consequences of chemotherapy and/or radiotherapy.

The prognosis of this condition is depending of its early diagnosis. The treatment is based on immunosuppressive medications and diet, with a resolution in 75% of the cases. The imaging findings can be visible along the entire intestinal tract. The most frequently affected sites are the oesophagus, small bowel (ileum) and the colon. Imaging changes include thickening of the bowel wall, dilatation, abnormal enhancement of the mucosa

and/or serosa, and engorgement of the vasa recta. On CT, the thickening is usually mild (5 mm), with small bowel thickening noted in 100%, colonic wall thickening in 59%, gastric or oesophagal thickening in 9%. The increased enhancement of the intestinal layers is noted on the mucosal layer in 54% and the serosal enhancement in 31%. A bowel distension is noted in 23%. The engorgement of the vasa recta ("comb sign") is visible in 91% and the stranding of mesenteric fat is present in 73%.

The list of CT abnormalities observed in the larger group of neutropenic patients with intestinal complications is large. Neutropenic enterocolitis is the first complication observed on CT in 70% of these patients. Colic wall changes are combined with small bowel abnormalities. Pneumatosis can be noted in the inflamed intestinal wall.

The second intestinal complication is a *Clostridium Difficile* colitis, noted in 18% of the cases, with an increased wall thickening of the colon (12 mm) combined with wall nodularity, ascitis and mesenteric stranding. GVH is the third intestinal complication, noted in 9% of the case. The location of the bowel disorder is more frequently the small bowel followed by the colon. The imaging findings include mucosal enhancement, wall thickening (~ 5 mm), and small bowel dilatation. Other intestinal disorders in neutropenic patients are cytomegalovirus colitis and ischemic bowel changes.

As a take home message, when CT is required in neutropenic patients having acute abdominal pain, CT can help to suggest GVH intestinal disease in a compatible clinical condition (bone marrow transplantation), by showing enhancement of the mucosa and engorgement of the vasa recta.

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