UNIVERSITY of
ROCHESTER
MEDICAL CENTER

UNIVERSITY OF ROCHESER MEDICAL CENTER

DEPARTMENT OF IMAGING SCIENCES

Imaging Sciences Interesting Cases

CASE 10

Trushar Sarang, MD

CLINICAL PRESENTATION: A 41-year-old female status post bone marrow transplant for ALL now presenting with abdominal pain, diarrhea, and fever.

IMAGING FINDINGS: Diffuse thickening of the small bowel, colon, rectum, and anus.

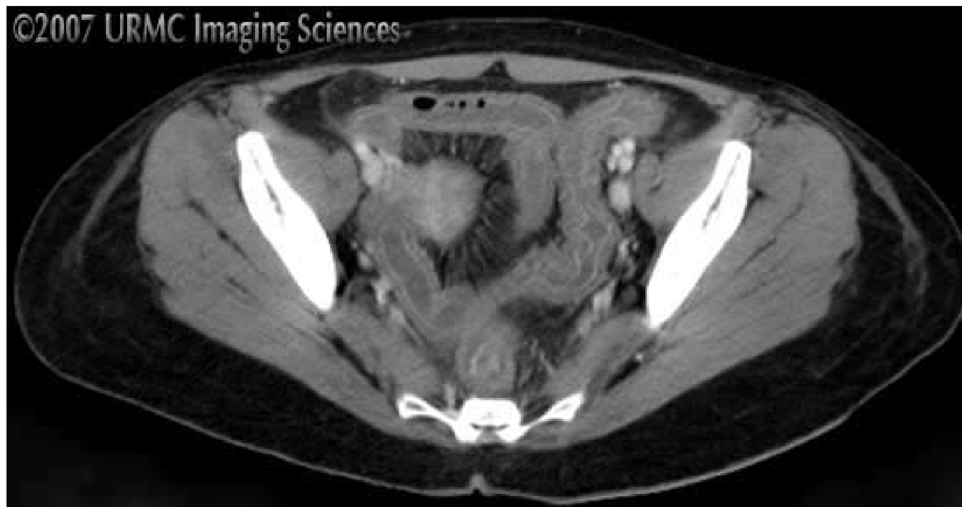

Figure 1: Diffuse bowel wall thickening of the anus, rectum, and sigmoid colons.

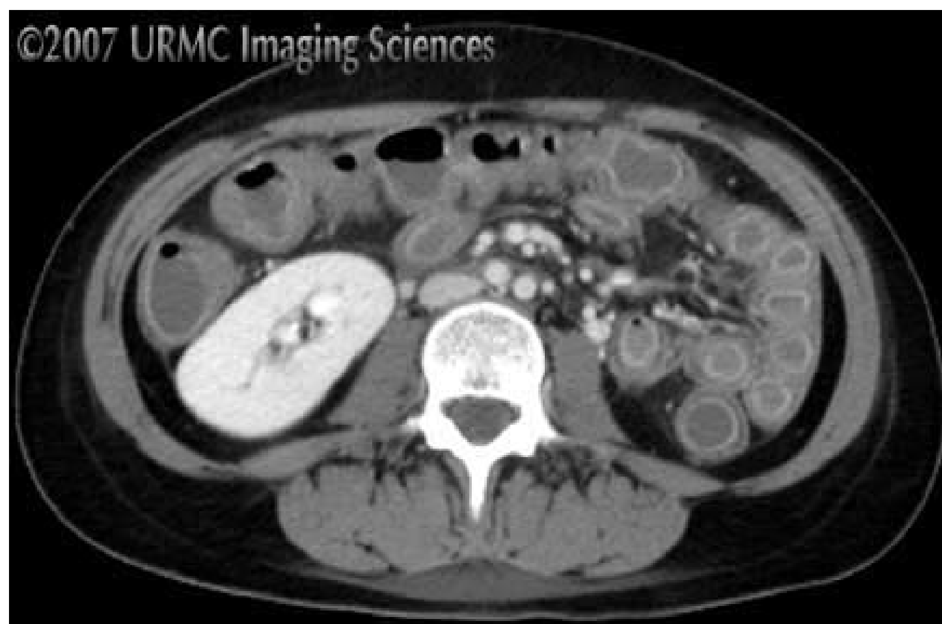

Figure 2: Diffuse thickening of the small bowel and colon.

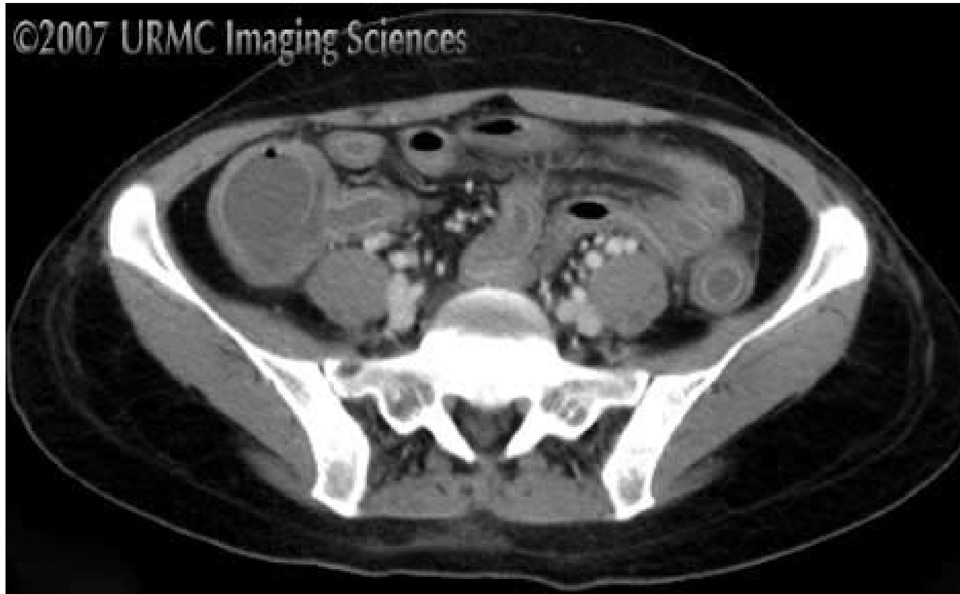

Figure 3: Diffuse thickening of the small bowel and colon.

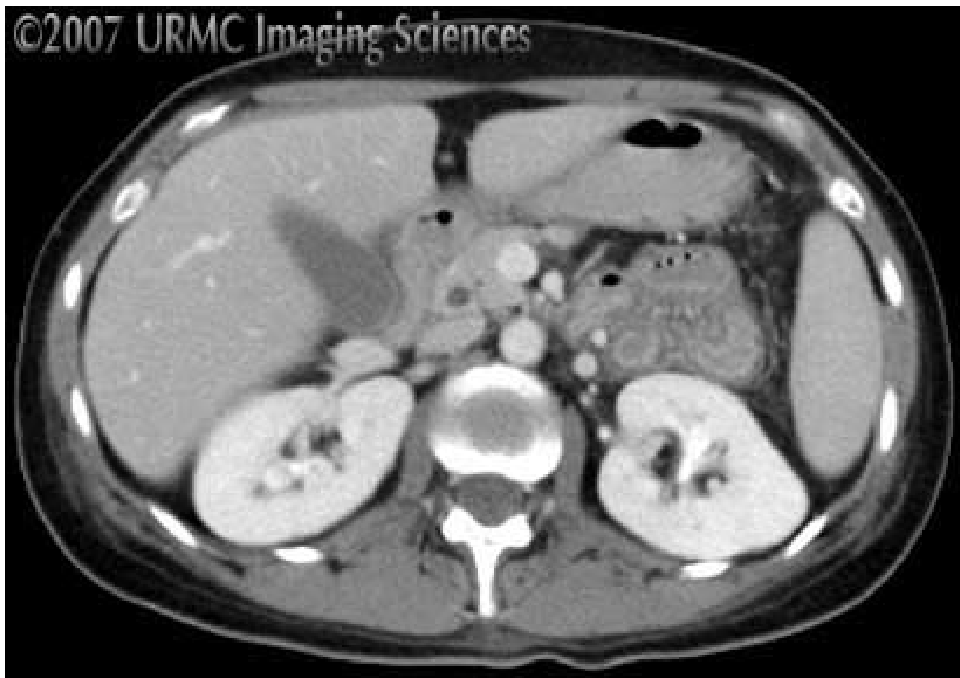

Figure 4: Diffuse thickening of the small bowel and colon. The stomach is relatively spared.

DIAGNOSIS: Acute Graft versus Host Disease of the Gastrointestinal Tract

DISCUSSION: Graft versus host disease most commonly occurs after bone marrow transplantation when there is a significant immunologic mismatch between a host and transfused/donated cells. This incompatibility results in recognition of the host's tissues as foreign to the donated cells creating in an induced inflammatory response. Death of the host tissue results in multi-organ damage/failure and significant morbidity and mortality.

The incidence of acute GVHD is 40% in recipients with identical major HLA types as the donor cells, including autologous transfer. The incidence is 60% in patients with 1 mismatch. Mortality is directly related to severity of the disease and overwhelming sepsis is the primary cause of death.

There is hyperacute, acute and chronic disease, very similar to the acute and chronic rejection of organ transplantation, only reversed in concept. Hyperacute is rare but is associated with desquamation of the

skin and GI mucosa and has a high mortality. Acute disease, as seen here, occurs within 100 days of transfusion (by definition), and has the typical triad of:

1. Dermatitis
2. Hepatitis
3. Enteritis

The dermatitis is usually the first sign of GVHD when the disease is mild. As the disease severity progresses, there is increased enteritis and hepatic involvement. Systemic involvement is rare, but is associated with high mortality. Clinically, patients with acute disease present with rash, abdominal pain, and diarrhea. Hepatorenal syndrome and hyperbilirubinemia may also result. Enteritis, as visualized in this case, presents as diffuse continuous wall thickening of the small bowel, colon, and anus. Intestinal bleeding and ileus may develop in severe cases. Exfoliation of the gastrointestinal mucosal may result in green/mucoid diarrhea.

The diagnosis of GVHD is complicated by the similar appearance of drug reactions, infection and ischemia. The main differentiating factors include the diffuse extent of the disease. Infection is less likely to involve the entirety of the colon and small bowel. Ischemia is usually seen in vascular distributions. Cardiac induced ischemia would have other signs of end organ injury and hypotension. Usually, the patient history is sufficient to distinguish this disease.

Other complications of the enteritis-associated GVHD include electrolyte disturbances secondary to the diarrhea.

Treatment includes immunosuppression, usually with prednisone or cyclosporine.

REFERENCES:

1. Scheinfeld NS, Kuechle MK. Graft verus host diseasae .e-medicine. May 21, 2007. http://www.emedicine.com/derm/topic478.htm
2. Mandanas RA. Graft versus host disease. e-medicine. April 4, 2006. http://www.emedicine.com/med/topic926.htm
3. Webb WR, Brant WE, Major NA. Fundamentals of Body CT. 3rd ed., Saunders, 2006.