Question 26 – January 27

A 44-year-old woman is referred to you for a second opinion. She was diagnosed 20 years ago with vascular Ehler's Danlos syndrome type IV or VED. She has a family history of VED and had the disease genetically confirmed during a visit to the NIH. She has always had the typical symptoms of skin elasticity, joint mobility and tissue fragility. However she now presents to you for your opinion regarding severe abdominal pain that mostly occurs with oral intake and has been associated with some hematochezia. This is been going on for about 4 weeks. She has had difficulties with constipation in the past and this continues. A prior colonoscopy was unremarkable including unremarkable biopsies and she was told that she had constipation predominant irritable bowel syndrome. However, she has failed all therapies aimed at controlling these symptoms including lubiprostone, PEG, and pelvic floor physical therapies. In your office the physical exam reveals expected skin changes. Her abdomen is soft and nontender without any organomegaly. Bowel sounds are normal and there is no distention. Rectal exam our reveals significant pain on examination, hard stool in the vault and some blood on the examining finger. Pelvic floor descent seems appropriate as does sphincter tone which may be actually slightly elevated by your exam.

You believe it's likely she has an anal fissure and choose to treat her appear to leak with a topical 0.4% nitroglycerin ointment applied twice daily.

On a follow-up phone call 2 days later she states that she has noticed some significant improvement in her rectal pain and a slight diminishment in the bleeding. However one day later she calls with acute onset of excruciating lower abdominal pain, nausea, followed by vomiting and fever. You advised that she come to the emergency room immediately. Urgent chest x-ray shows free air under the diaphragm.

The most likely cause for this change in symptoms and radiographic appearance is:

A. Acute peptic ulcer perforation
B. Boerhaave's syndrome
C. Spontaneous jejeunal perforation
D. Peritonitis secondary to Clostridium perfringens
E. Spontaneous perforation of the sigmoid colon.

Answer: E

Patients with Type Iv Ehlers-Danlos or VED are uniquely susceptible to perforation of the gastrointestinal tract. Constipation appears to be a predisposing factor and this is a common symptom in this disorder. Most perforations occur in the fourth and fifth decades as in this patient. Perforations in the colon can occur at any point but will often occur in the sigmoid colon and occur more often in women. Patients with type IV Ehler's Danlos have abnormalities in type III collagen which is the major collagen constituent of the bowel therefore this is subtype of

Ehler's Danlos is highly susceptible to perforation of the gastrointestinal tract which may be spontaneous but is more often induced by severe constipation and instrumentation of the GI tract such as endoscopy. Therefore endoscopy is to be approached with significant trepidation in patients with this subtype of Ehler's Danlos. Constipation and endoscopic manipulation of the colon have been associated with the development of intramural hematomas which may progress along the bowel and lead to perforation. Additionally intramural diverticula have been demonstrated in patients with type for Ehler's Danlos. These may also predispose to spontaneous rupture. Because of the fragility of the colonic wall in these patients total colectomy is the recommended surgical intervention in patients who suffered a perforation of any sort in the colon.

Although this patient may be at risk for Boerhaave's syndrome the abdominal pain is in the lower abdomen and preceded the onset of vomiting. Spontaneous jejeunal perforation can also occur but colonic perforations are more likely particularly given her history of constipation. She has no particular risk factors for peritonitis secondary to Clostridium perfringens as the initiating source for the air under the diaphragms noted on the chest x-ray although this could certainly be a dictating factor from fecal contamination from the initial perforation. She has no history of peptic ulcer disease and patients with Ehler's Danlos are not at higher risk for perforations secondary to this disorder. If peptic ulcer disease is suspected in Ehler's Danlos type for patient is is advisable to treat empirically and avoid upper endoscopy if at all possible do to tissue fragility and the risk of rupture.

References:

1. Solomon, J. etal. *GI Manifestations of the Ehlers_Danlos Syndrome*. Amer J Gastro. 91 (11), 2282-88, 1996.