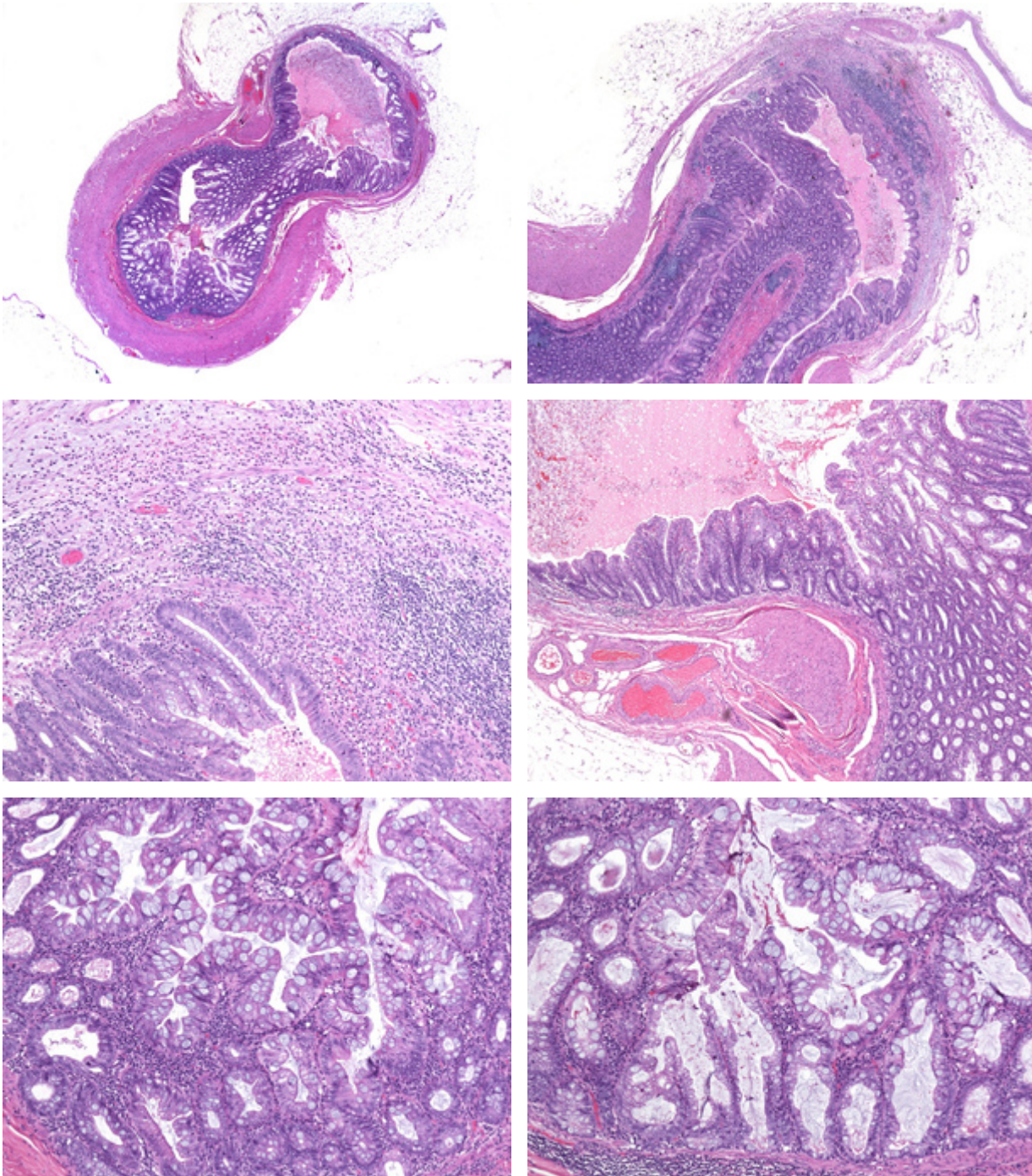


October 2015

Appendectomy specimen of a 74-year old female (operated upon for other reasons).

What is your diagnosis?



Diagnosis:

Diverticular disease of the appendix with sessile serrated adenoma (also inside the diverticulum).

Comment:

A 74-year old female presented with acute, severe hematochezia. A vascular malformation of the caecum was identified as underlying cause. Because endoscopic therapy was not successful, right hemicolectomy (including appendectomy) was ultimately performed.

The appendix measured 5 x 0.6 cm. There were two (pseudo-)diverticula (Panel A). One was located near to the tip and showed mild active inflammation (Panels B-C). The second was located in the middle of the appendix. Herein, the mucosa harboured a typical sessile serrated adenoma/polyp (SSA/P) with T- (anchor) and L- (boot) shaped glands without cytological dysplasia (Panels D-F).

Appendectomy is one of the most frequently performed surgical procedures worldwide, major due to acute appendicitis. In approximately 2% the appendectomy specimen may show unusual histopathologic findings, such as primary or secondary neoplasia (adenocarcinoma, adenomatous polyp, neuroendocrine tumour, or malignant lymphoma), specific infectious agents (*Enterobius vermicularis*, *Ascaris lumbricoides*, *Taenia* spp.), endometriosis, fibrous obliteration, mucocele, or appendiceal (pseudo-)diverticula.

Appendiceal diverticulosis is rare. The majority are acquired with an incidence range between 0.004% and 2.1% from appendectomy specimens, and an incidence range between 0.2% and 0.66% from autopsy studies. Patients are usually asymptomatic but may present with mild chronic and intermittent abdominal pain.

Appendiceal diverticulitis is a rare complication. The diverticula are most commonly found in the distal third of the appendix (60%). They are often multiple, the wall consisting of mucosa and muscularis mucosae only (pseudodiverticula). They are usually small in size (2-5mm), but less frequently larger cystic spaces can occur (1 to 3cm, even up to 8cm). The lumen can be empty or contain mucous or fecalith. Of note, mucosal schwann cell proliferation is common.

The commonest pre-malignant lesion of the appendix is the sessile serrated adenoma/polyp (SSA/P), probably reported in the past as hyperplastic polyp or diffuse mucosal hyperplasia. This lesion has irregularly branched crypts with dilatation at the base, the diagnostic criteria being the same as elsewhere in the large intestine. Uncomplicated SSA/P are "non-dysplastic", but they may acquire cytological dysplasia during neoplastic progression, often in conjunction with loss of MLH1 (and PMS2) expression due to epigenetic silencing, that is promotor methylation of the MLH1 gene (compare ENGIP Case 2/2013). However, in contrast to the situation in the large bowel, KRAS mutations are also common, and the available evidence suggests that appendiceal adenocarcinomas rarely develop via the microsatellite-instability pathway.

For further reading:

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- › Yantiss RK, Panczykowski A, Misdraji J, Odze RD, Rennert H, and Chen YT. A Comprehensive Study of Nondysplastic and Dysplastic Serrated Polyps of the Vermiform Appendix. *Am J Surg Pathol.* 2007; 31: 1742-1753.
- › Stockl T, Ross JS, Walter O, Dresser K, Lee H. Appendiceal mucosal Schwann cell proliferation: a putative histologic marker of appendiceal diverticular disease. *Int J Surg Pathol.* 2013; 21: 603-9.

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