Appendicular Diverticulitis, Is It Appendicitis Or Pre-malignant Signs?

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Background:

- Appendicular diverticulitis was first described in 1893 by pathologist Theophilus Kelynack.
- Initially thought of as rare, appendicular diverticulitis (AD) has been found in as many as 10% of appendectomy specimens.
- Appendiceal diverticulitis is acute inflammation of diverticuli in the vermiform appendix and comes in two forms congenital and acquired.
- The congenital form involves all 3 layers of bowel wall representing a true diverticulum, whereas, the acquired form is a “pseudo-diverticulum” with only mucosa and submucosa involved.
- It mimics acute appendicitis however, it carries four times the risk of perforation, thirty times the risk of mortality, and is frequently associated with mucinous neoplasms and tumors.
- Due to its atypical clinical course and high rate of complications, prompt diagnosis and proper management of appendicular diverticulitis is essential.
- The incidence of appendiceal neoplasms is increasing and age at presentation decreasing according to recent literature.

Methods

- We present 13 cases of AD encountered in our hospital.
- Patients presented to our ED with abdominal pain and subsequently had an appendectomy with specimens submitted for pathology review. Chart review was completed each patient for completeness.

Results

- The most common presenting symptoms were right lower quadrant abdominal pain (11/13), nausea (5/13), periumbilical abdominal pain (5/13), leukocytosis (4/13).
- Results characterizing our initial findings are in table 1. Neoplasms found include mucocele, mucinous adenoma, Low-grade-appendiceal-mucinous neoplasm, and goblet cell adenocarcinoma.
- Perforation was highest among those exhibiting type 2 appendicular diverticulitis.

Table 1	Type 1 (acutely inflamed diverticulum with a normal appendix) (N=2)	Type 2 (acutely inflamed diverticulum with surrounding appendicitis) (N=7)	Type 3 (appendicitis with an uninvolved diverticulum) (N=2)	Type 4 (incidental, appendiceal diverticulum with no appendicitis) (N=2)
Mean age (range)	39.5 (30-49)	53.3 (25-86)	36.5 (36-37)	42 (31-53)
Female sex (%)	2 (100%)	5 (71%)	2(100%)	0 (0%)
Fever	0	2	1	0
Leukocytosis	0	3	1	0
Mean Appendix dilation on CT imaging	10mm	11.4mm	12mm	13mm
Perforation	0	6	0	0
Neoplasia found	0	3	0	1
Periappendicitis	1	5	1	1
Mucocele present	0	4	0	2
Abscess formation	0	3	0	0

Conclusions:

- While milder in presentation, AD is often missed and can result in perforation or have worse underlying disease.
- We recommend considering AD in cases of right lower quadrant pain with dilated appendix on imaging, a prompt appendectomy following diagnosis, and reviewing histopathology to rule out possible associated neoplastic malignancies given the higher incidence with AD

Discussion

- Appendicular diverticulitis is a separate entity from acute appendicitis and can be differentiated by CT; findings suggestive include the absence of a fluid collection in the appendix, absence of an appendicolith
- More research is needed to quantify the presence of appendicular diverticular disease due to the paucity of such epidemiology studies and risks for underlying appendiceal neoplasms.
- On further review there has been 382 cases in our 23-hospital system.
- Appendiceal neoplasms are important to identify early given risks of advanced disease needing hemicolectomy, chemotherapy or newer cytoreductive surgery with hyperthermic intraperitoneal chemotherapy.

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