Mucocele of the appendix

Clinical History:

82-year-old female patient with a 6-week history of abdominal discomfort, constipation, and occasional sensation of abdominal mass in the right lower quadrant.
The clinical examination revealed non-tender abdomen and a palpable soft mass in the ileocecal region. Routine laboratory tests were normal.

Imaging Findings:

Transabdominal ultrasonography is the first-line diagnostic procedure for patients with abdominal pain or mass. The ultrasound examination shows a well-defined, 8 x 6 cm, predominantly anechoic lesion, with internal echogenic debris, in the right iliac fossa.
Contrast enhanced spiral CT confirmed the fluid lesion and detected a cecal mass compression.
Appendectomy was performed. Pathological examination revealed a mucinous cystadenoma with mucocele.

Discussion:

The definition of appendicular mucocele is a non specific term that macroscopically describes a chronic cystic dilatation of the appendix lumen, caused by an abnormal accumulation and stagnation of mucin that may be caused by both inflammatory diseases and cancer.
It was first described by Rokitansky in 1842. It is a rare condition appearing in 0.2 - 0.3% of surgical appendectomy specimens.
The male:female ratio is 1:4 and the mean age of patients is around 55 years.
Initially it was assumed that the main cause of mucoceles was post inflammatory obstruction, caused by an appendicolith, postoperative scarring following appendicitis, appendiceal carcinoma, carcinoma of cecum, or appendiceal volvulus, but recent evidence suggests that neoplasia is the cause of most of these cases.
The understanding of the neoplastic nature of appendiceal mucocele has greatly altered his terminology, which can be histologically divided into three groups: focal or diffuse mucosal hyperplasia without epithelial atypia, mucinous cystadenoma with some degree of epithelial atypia and mucinous cystadenocarcinoma.
Clinical symptomatology is not specific. The most common clinical manifestation is a palpable mass in the lower right quadrant of the abdomen. Abdominal pain is present in about half of the patients and it can range from mild pain to a frame work of peritonitis indistinguishable from acute appendicitis.
Many patients are asymptomatic even when they have large tumours; in these cases, mucoceles are found incidentally.
Case reports of bleeding, intestinal occlusion by intussusception, and local invasion into surrounding structures have been described.
The differential diagnosis is extensive and includes primary adenocarcinoma, carcinoid tumour, mucinous cystadenoma, mucinous cystadenocarcinoma, lymphoid hyperplasia, lymphoma, peri-appendiceal abscess, cysts, mesentric and omental cysts, and in females, hydrosalpinx, ovarian cysts and tumours.
Complications which may arise from the formation of an appendix mucocele are: intussusception with intestinal
occlusion and pseudomyxoma peritonei which occurs when the mucocele ruptures into the peritoneum, releasing the mucinous contents into the abdominal cavity with resultant implants of mucinous epithelium on the peritoneal surfaces and mucus accumulation within the peritoneal cavity.

Pseudomyxoma peritonei occurs more frequently in cystadenocarcinoma.

Over the past decades, the diagnosis of mucocele of the appendix has been made with laparotomy for suspected appendicitis; and pre-operative diagnosis has rarely been made. More recently, modern non-invasive imaging modalities, especially ultrasound and CT, have shown to be extremely useful in the pre-operative diagnosis of appendix mucocele.

Ultrasound examination may reveal a heterogeneous cystic mass extrinsic to parenchymal abdominal viscera in the right iliac fossa.

CT is an effective diagnostic tool which can help to confirm the diagnosis, and it can also readily demonstrate relationships between the lesion and the neighbouring organs.

CT features include a hypoattenuated, well-encapsulated, right lower quadrant mass with smooth margins with or without calcification or septation.

The density of the mucocele depends on the mucin content within, ranging from near water density to soft tissue density. There may be mass effect with displacement of the adjacent bowel loops, but no significant peri-appendiceal inflammatory changes or abscess formation, features which help to differentiate it from acute appendicitis.

Surgical treatment is mandatory because of the potential for malignant transformation and prevention of pseudomyxoma peritonei.

**Differential Diagnosis List:** Appendiceal mucinous cystadenoma

**Final Diagnosis:** Appendiceal mucinous cystadenoma

**References:**


Description: Transabdominal ultrasonography shows fluid-filled mass with internal echogenic debris in the right lower abdomen. No free fluid or lymphadenopathy. Origin:
Description: Axial image CT shows the appendix, which contains homogeneous high-attenuation fluid. The lesion displaces and compresses the lumen of the cecum. There is no peripheral fat infiltration. Origin:
Description: Coronal image from a multiplanar CT examination illustrates the tubular shape of the mucocele. Origin: