A Particular Shape of the Appendix

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Abstract

The appendix mucocele is a rare disease. Sometimes it is discovered accidentally and sometimes resembles acute appendicitis. The correct diagnosis before surgery is important for the selection of adequate surgical treatment to avoid intraoperative and postoperative complications. Ultrasonography, and particularly computed tomography (CT), should be widely used for this purpose. If the mucocele is treated incorrectly, the peritoneal pseudomyxoma may develop. We report a case of appendicular mucocele in a 60-year-old male patient who was admitted to the emergency department of the Military Hospital Mohamed V in Rabat with signs of acute appendicitis. Because it is an elderly patient, in whom the literature insists on the performance of CT, this technique evidenced the diagnosis. Right hemicolectomy was performed through open emergency surgery and a termino-lateral anastomosis because the base of the appendix was involved in the process. No free fluid was found in the peritoneal cavity. The histopathological diagnosis was the mucocele of the appendix with simple mucosal cyst. The patient has been in regular follow up since 2006.

Keywords

Appendix; Appendicitis; Mucocele

Introduction

The appendix mucocele (MA) was first described in 1842 by Rokitansky [1]. Mucocele Appendix is a rare entity that can present a variety of clinical symptoms or occurs as an accidental surgical finding. The incidence is 0.2% -0.4% of all appendectomized specimens [1-3]. It affects women from 50 to 60 years of age [1]. AM is a progressive enlargement of the appendix from the intra-luminal accumulation of the mucoid substance [3-6]. It can be a benign or malignant process that can come as a consequence of obstructive or inflammatory processes, cystadenomas or cystadenocarcinomas [7]. In addition to these causes, other tumor lesions in the appendix or cecum may present as mucocele [8]. Its main complication is the pseudomixoma peritonei.

There are four histological types, which lead to individualized surgical treatment and stroke in each case [7]:

Simple mucocele (inflammatory, obstructive or retention cyst) is characterized by degenerative epithelial changes and results in obstruction and distension of the appendix. There is no evidence of hyperplasia or mucosal atypia.

Hyperplastic mucocele, enlargement of the appendix occurs due to hyperplastic growth of the appendix or cecal mucosa, as well as hyperplastic polyps in the colon.

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The simple and hyperplastic mucoceles correspond to 5 to 25% of the cases, and mucus is generally acellular.

The mucinous cystadenoma is an appendix neoplasm with dysplastic epithelium similar to the adenomatous polyps of the colon and corresponds to 63 to 84% of the cases.

Mucinous cystadenocarcinoma presents high-grade cellular dysplasia and stromal invasion, in addition to muscularis mucosae, and represents 11 to 20% of the cases.

The treatment is always surgical and determined by the integrity of the organ, the dimensions of the base and histological type of the lesion.

The preoperative diagnosis that distinguishes MA from acute appendicitis (AA) like others such as mesenteric cysts, digestive duplications, complicated appendicitis, ovarian cysts and hydrosalpinx [8] is essential for the best choice of surgical approach (Open versus laparoscopic) to prevent peritoneal dissemination and perform appropriate surgery [8, 9].

**Case Report**

A 60-year-old man, with no significant pathological history, consulted in the emergency room for pains in the right iliac fossa, which had been progressing for 15 days. The patient was with a sensitivity of the right iliac fossa, the biological evaluation showed hyperleukocytosis without inflammatory syndrome. Abdominal-pelvic spiral computed tomography (CT) was performed before and after the injection of contrast agent, axial section (Figure 1), with frontal reconstruction (Figure 2), which showed the presence of cystic mass of the iliac fossa Right juxta cecal, oblong, whose wall is enlarged after contrast agent injection, the diagnosis of appendicular mucocele was highlighted and the patient underwent right hemicolectomy and anastomosis of the lateral ilio-junction crossing collar (Figure 3). The sequences were simple without any sign of recurrence.

**Discussion**

The appendix Mucocele was first described by Rokitansky. This disease is characterized by lumen dilation as a result of an accumulation of a large amount of mucus. The appendix is lined by epithelium containing more chalice cells than the colon. As a result, most of the appendix epithelial tumors are mucinous and begin as mucoceles. It falls under the category of rare diseases. Its incidence ranges from 0.2% to 0.4% of all excised appendages [10]. This condition can have benign and malignant processes. According to the modern classification, there are 4 histological types: retention cyst, mucosal hyperplasia, mucinous cystadenoma and mucinous cystadenocarcinoma [10, 11].

**Figure 1:** Abdominal CT showing the cystic formation of the right iliac fossa

**Figure 2:** Frontal section showing the oblong nature of cystic juxta cystic formation.
The clinical course of the disease does not have a specific evolution. Usually, it runs asymptptomatically. In about 50% of cases, it is discovered accidentally during radiological and endoscopic examinations or in surgery. Clinical symptoms of a patient may include pain in the lower right quadrant of the abdomen, palpable abdominal mass, nausea, vomiting, weight loss, gastrointestinal bleeding and signs of intussusception of the intestines [11, 12].

Preoperative diagnosis of appendicular mucocele is very important for the selection of a suitable surgical method to prevent peritoneal dissemination, prevent intraoperative and postoperative complications and repeated surgery [13]. USG, computed tomography (CT) and colonoscopy are used for diagnosis. USG is the first-line diagnostic method for patients with acute abdominal pain. USG can be used to differentiate between mucocele and acute appendicitis. In case of acute appendicitis, the external diameter threshold of the appendix is 6 mm and 15 mm and more indicates the presence of a mucocele, with 83% sensitivity and 92% specificity [14].

CT is considered the most accurate diagnostic method. CT can be used to detect specific mucocele signals with high accuracy: appendix light above 1.3 cm, cystic dilatation and wall calcification [15]. By colonoscopy, an elevation of the appendix orifice is observed and a yellowish mucosal discharge would be visible from this orifice. In addition, synchronous and metachronous tumors of the colon can be identified [16]. In our USG patient did not provide the correct information, so in this case especially in older patients in whom AM should be considered, we decided to perform CT that brought the diagnosis.

One of the cardinal principles of surgical treatment of this disease is that intact mucoceles pose no threat to the patient. Therefore, selecting a suitable surgical method is very important. Some surgeons think that open surgery should be favored against laparoscopy. If the surgery is launched using a laparoscopic method and there appears to be an appendiceal mucocele, it should be converted into open surgery. This has two goals; 1) to perform surgery with care so that the cyst is not ruptured and contents are not poured into the peritoneal cavity and 2) with open surgery compared to the laparoscopic method, it is possible to perform a more complete inspection, palpation and direct inspection n Of spots in the abdomen where mucinous tumors are more common [17, 18]. Some surgeons consider that the operation can be performed using a laparoscopic method, adhering to safety rules, especially when removing the mucocele from the abdomen using a small removal bag [19, 20].

An algorithm for the selection of type of surgery was provided by Dhage, Ivatury and Sugarbaker [20]. It provides several factors: 1) Whether the mucocele is perforated or not. 2) Whether the base of the appendix (resection margins) is involved in the process; E 3) if there are meso-appendix positive lymph nodes and ileo-colics. As a result, patients may require different operations: appendectomy for right colectomy, including cytoreductive surgery, intraoperative intraperitoneal heated chemotherapy, intraperitoneal preoperative chemotherapy [20].

In our patient, there was no rupture of mucocele, but the base of the appendix was involved by the process and there was no regional lymph node enlargement. Therefore, a right hemicolecction was performed, which is adequate surgery in this case. (Figure 3)
Conclusion

The appendix Mucocele is a rare disease and has a clinical picture that resembles acute appendicitis. A correct diagnosis before surgery is very important for the selection of the surgical technique to avoid serious intraoperative and postoperative complications. The USG, in particular the CT, should be widely used for this purpose. In our opinion, all patients over 50 years old who arrive at the emergency department with clinical symptoms of acute appendicitis should undergo CT and it would be prudent to always think about the diagnosis of MA.

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References


