http://dx.doi.org/10.35630/2199-885X/2022/12/2.22

RARE INTRAOPERATIVE FIND — ADENOCARCINOMA OF THE APPENDIX: CLINICAL CASE

Received 13 February 2022;
Received in revised form 17 March 2022;
Accepted 21 March 2022

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ABSTRACT — Relevance: Neoplasms of the large bowel are one of the most common diseases among all malignant neoplasms of the gastrointestinal tract. The predominant localization is the rectosigmoid junction. The rarest disease is a neoplasm of the appendix.
Purpose: Diagnosis of the neoplasm of the appendix with extension into cecum cupula and into the anterior abdominal wall and description of the results on the example of a clinical case.
Materials: We present a case of patient I., male, 34 years old. He is a hypersthenic overweight person, essential hypertension stage I, rate III, risk 3.
Results: Patient I. was first admitted in a private clinic (Tver, Russia) in September 2020 after the 1 day of onset. A clinical presentation complies with appendicitis. He was sent to the emergency surgery department after the examination by the surgeon. There he underwent a diagnostic laparoscopy, conversion, laparotomy with preservation of the appendix, and draining of the abdominal cavity. The second visit to a private clinic was in May 2021. The CT scan of the abdominal organs was performed and an infiltrate was detected in the cecum cupula with a small area of suppurative complication. Then the patient was hospitalized in the surgery department, where he was prescribed antibiotic therapy for periappendiceal mass and recommended a planned appendectomy. In September 2021, the patient turned to the surgery department at the place of residence due to the deterioration. He underwent a laparotomy in the right iliac region, viscerolysis, median laparotomy, right-sided hemicolectomy for adenocarcinoma of the appendix, ileotransverse anastomosis by the side-to-side method, drainage of the abdominal cavity.
Conclusion: Acute appendicitis remains a challenge for practicing surgeons despite being common and well-studied. Acute appendicitis is characterized by pronounced clinical symptoms. But it also has many hidden forms that mimicked other diseases. That's why the establishment of this diagnosis is difficult even for experienced clinicians. This clinical case demonstrates certain difficulties in the timely diagnosis of the appendix neoplasm. This is because the development of most appendix tumors is asymptomatic or resembles the clinic of acute appendicitis. The tumors are detected by chance, or during visualization, or during appendectomy. Only early diagnosis of the disease, knowledge of the treatment strategy and timely initiation of appropriate therapy can improve the prognosis of patients, reduce the risk of disability and death. It is undoubtedly important in clinical practice.

KEYWORDS — appendicitis, neoplasm, appendix, adenocarcinoma.

RELEVANCE

Despite the fact that all over the world there is a significant increase in the indicators of the level and quality of population's life, and also an improving access to modern medical support, the problem of timely diagnosis of oncological diseases still remains. Malignant neoplasms constitute one of the nosological groups. They account for a significant part in the structure of morbidity, disability and mortality. Neoplasms of the large bowel are one of the most common diseases among all malignant neoplasms of the gastrointestinal tract. The predominant localization is the rectosigmoid junction. The rarest disease is a neoplasm of the appendix. It is found in 0.4% of all types of malignant neoplasms of the gastrointestinal tract [1].

The annual incidence of appendix cancer is 0.12 cases per 1 million people, according to the United States National Cancer Institute, Surveillance, Epidemiology and End Results (SEER) program. It should be noted that appendicular epithelial tumors are diagnosed in 0.9-1.4% during appendectomy with a histological assessment of a surgical tissue sample. The development of the appendix neoplasm in most cases proceeds without pronounced clinical symptoms or has a clinic of acute appendicitis due to blockage of the appendix lumen [2].

The appendix is most commonly the site of neuroendocrine tumors, called carcinoids. A carcinoid tumor can cause carcinoid syndrome. There are other histological types of tumors associated with the appendix. They are mainly tumors with epithelial structure. Some of them can cause pseudomyxoma of the peritoneum. The classification of these tumors in the literature is rather heterogeneous and based on many factors. The treatment options differ depending on the histological type and stage of the disease (from simple appendectomy with celioscopy to full cytoreduction with intraperitoneal hyperthermic chemotherapy and/or systemic chemotherapy). It requires a specialized

examination and consultation of a surgeon specializing in the treatment of rare tumors of the peritoneal cavity for the right treatment strategy suitable for each patient. It is necessary to know that in the case of the development of an oncological neoplasm, the decision on treatment is discussed at an interdisciplinary consultation meeting. It ensures the most optimal and adequate treatment with the help of the recommendations of several experts. The early detection is critical. Delayed diagnosis can result in worse outcomes, including death [3, 4].

Purpose of the study:
to diagnose a neoplasm of the appendix with extension into cecum cupula and into the anterior abdominal wall and describe the otcomes on the example of a clinical case.

MATERIALS AND METHODS

We present a case of a 34 years old patient I., male, with the hypersthenic body type and overweight, essential hypertension stage I, rate III, risk 3.

RESULTS AND DISCUSSIONS

Patient I. was first admitted a private clinic (the city of Tver, Russia) in September 2020 after the 1st day of onset. A clinical presentation complies with appendicitis. The main complaints were pain in the right side of the abdomen and a temperature increase up to 37.5° C. The patient was sent to the emergency surgery department after the examination by the surgeon. According to the results of the abdominal ultrasound, an infiltrative mass was revealed in the right iliac region. Based on the data of the anamnesis, examination and physical examinations surgery was indicated. It was carried out with the consent of the patient. The operation was carried out with endotracheal anesthesia. After surgical d-bridement, a laparoscope was inserted through the incision. The caecum cupula was determined above the entrance to the small pelvis. Additionally, 5 mm and 12 mm trocars were placed in the right hypochondrium and suprapubic region. A periappendicular mass was determined in the right iliac region. It included the caecum cupula, a loop of the small intestine, a section of the parietal peritoneum, and a scanty serous exudate with fibrin. It was not possible to separate the mass. A responsible surgeon on duty was invited for a consultation during the operation. It was decided to perform the conversion. After surgical d-bridement, the abdominal cavity was opened on the right by the Volkovich-Dyakonov access. A dense infiltrate was determined, consisting of the caecum cupula, parietal peritoneum, and a section of the ileum. Probably, the appendix went retroperitoneally through the lateral canal into the small pelvis. During the separation of the infiltrate in a blunt way, about 5 ml of purulent discharge was released. The caecum cupula was brought into the wound. After this the appendix cut out on the base. The caecum caecum was infiltrated. The base of the appendix was obturated with a fecal stone. There was no discharge from the intestine. The appendix remained in the mass. The organ left retroperitoneally into the small pelvis. The surgeon on duty was re-invited to the consultation. It was decided to drain the abdominal cavity with glove drains. The small pelvis was drained with tupfers, glove drains were installed. This was followed by layer-by-layer suturing of the wound and the application of an aseptic dressing. In this connection combined antibiotic therapy was prescribed. After the end of the therapy, the patient was discharged in a satisfactory condition under supervision of a local surgeon.

The second visit to the private clinic was in May 2021. The patient had complaints of minor pain in the right iliac region and subfebrile temperature for 3 days. We made the CT scan of the abdominal organs and detected an infiltrate in the cecum cupula with a small area of suppurative complication. Then the patient was hospitalized in the surgery department, where he was prescribed antibiotic therapy for periappendiceal mass. based on physical examination and laboratory tests there were no indications for emergency surgery. The patient was discharged after the end of antibiotic therapy in a satisfactory condition under supervision of a local surgeon with a recommendation for a planned appendectomy.

In September 2021, the patient began to notice aching pains in the right iliac region, an increase in the volume of the abdomen after eating, predominant on the right side and an increase in body temperature up to 38° C. This condition lasted for 2 weeks. The patient turned to the emergency department of the hospital at the place of residence in connection with the deterioration of his condition. He was hospitalized in the surgical department after examining by the surgeons. Status localis: the tongue is dry, covered with a whitish coating. The abdomen is not swollen, symmetrical, and participates in the act of breathing. In the right iliac region there is a hypertrophic scar up to 5 cm. During palpation, the abdomen is soft, painful, tense in the right iliac region, where a dense infiltrate up to 7–8 cm in size is palpated. Blumberg's sign is doubtful. According to the ultrasound results, an infiltrate of 52×42 mm is visualized in the right iliac region, the appendix is thickened to 34 mm. Laboratory data: general urine analysis: color — yellow, transparent, acid reaction, specific gravity — 1010 g/l, protein — 0.1 g/l, sugar — absent, according to microscopy: squamous epithelium 1–3, leukocytes 4–6–8; erythrocytes 1–2; mucus

11. Blood test: Hb — 130 g/l; leukocytes — 8.9 · 10^9/l; erythrocytes 4.4 · 10^{12}/l; platelets - 156 · 10^9/l; Ht — 41.4%. A diagnosis of acute appendicitis, periappendiceal mass with abscess was established on the basis of clinical and anamnestic data and US-results. Surgery was offered. It was carried out with the consent of the patient. The operation was with general anesthesia. A laparotomy was performed in the right iliac region with excision of the old scar, a dense infiltrate was detected. The part of the adhesions was divided, the caecum cupula with a dense, thickened appendix was isolated. When the appendix was isolated, its lumen was visible, filled with cartilaginous tissue of a dull gray color. Further revision revealed a dense tumor infiltrate consisting of the appendix and the caecum cupula with invasion into the anterior abdominal wall. It was performed the right-sided hemicolectomy with the imposition of anastomosis by the side-to-side method with a single-row polypropylene suture. There was a control for hemostasis, it was dry. Drainage was installed into the small pelvis through a separate puncture. The sutures were placed on the aponeurosis and skin. The wound area was treated with an antiseptic preparation. An aseptic dressing was applied. Macroscopic data: the right half of the colon had a tumor; there were fragments of the appendix tumor. The main final clinical diagnosis was formulated: Neoplasm of the appendix with germination in the caecum cupula and in the anterior abdominal wall. The patient was transferred to the intensive care unit due to the severity of the surgical intervention. All appointments were also agreed. After stabilization of the patient's condition, the patient was transferred to the surgical ward in a state of moderate severity. The macro- and microscopic examination of the biopsy material enabled to identify an adenocarcinoma of the appendix,

CONCLUSION

Acute appendicitis remains a challenge for practicing surgeons despite being a common and well-studied disease. Acute appendicitis is characterized by pronounced clinical symptoms. But it also has many hidden forms that mimicked other diseases. That is why the establishment of this diagnosis is difficult even for experienced clinicians. Our clinical case demonstrates certain difficulties in the timely diagnosis of the appendix neoplasm. This is attributed to the fact that development of most appendix tumors is asymptomatic or resembles the clinic of acute appendicitis. The tumors are detected by chance, or during visualization, or during appendectomy. Although appendicular tumors are rare, only their early diagnosis, knowledge of the treatment strategy and timely initiation of appropriate therapy can improve prognosis of the patients and reduce the risk of disability and death. It is undoubtedly important in clinical practice.

REFERENCES

1. **Stein S, Raymond D O B.** Appendiceal Adenocarcinoma Presenting As Perforated Appendicitis. Cureus. 2021 Feb 26;13(2):e13578. doi: 10.7759/cureus.13578
2. **Hatch QM, Gilbert EW.** Appendiceal Neoplasms. Clin Colon Rectal Surg. 2018 Sep;31(5):278–287. doi: 10.1055/s-0038-1642051, Epub 2018 Sep 4
3. **Van de Moortele M, De Hertogh G, Sagaert X, Van Cutsem E.** Appendiceal cancer: a review of the literature. Acta Gastroenterol Belg. 2020 Jul-Sep;83(3):441–448. PMID: 33094592
4. **Valasek MA, Pai RK.** An Update on the Diagnosis, Grading, and Staging of Appendiceal Mucinous Neoplasms. Adv Anat Pathol. 2018 Jan;25(1):38–60. doi: 10.1097/PAP.0000000000000178