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Case Report

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Intramuscular Myxoma, Mimicking a Psoas Abscess

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ABSTRACT We report a clinical observation of intramuscular myxoma, mimicking a psoas abscess. Surgical minimally invasive treatment of the disease has been suggested. This clinical observation shows an example of the effective use of minimally invasive treatment methods in surgical practice, as an alternative to open surgery.

Keywords: myxoma, abscess, puncture

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CT – computed tomography
IMM – intramuscular myxoma

The report presents a clinical observation of intramuscular myxoma (IMM) of the iliopsoas muscle, occurring under the mask of a psoas abscess.

Myxoma (from the Greek *myxa* – mucus) is a benign tumor of connective tissue origin, consisting of undifferentiated stellate cells located in a loose mucinous stroma with basophilic fibers. The mucus-like mass is hyaluronic acid, as it is dissolved by hyaluronidase and reacts with mucoids. It is believed that the first to use the term "myxoma" was *R. Virchow* in 1871, describing a mucous tumor of the umbilical region. Diagnosis criteria were suggested by *A. Stout* in 1948 [1]. These tumors are more often found in the heart, subcutaneous and aponeurotic tissue, organs of the genitourinary system, skin and other formations. Myxomas that develop in skeletal muscles are called intramuscular. They were described as a separate subtype of myxoma in 1965 *by F. Enzinger* and account for only 17% of soft tissue myxoma cases [2]. The incidence of IMM is 1/1,000,000 of the population per year, more common in women (ratio 14:3) [3]. IMMs most often develop in the muscles of the shoulder, buttock, thigh, leg, and trunk [2]. Rarely, the localization of IMM is the head and neck. There are only a few descriptions of the retroperitoneal location of these

neoplasms in the literature [4, 5]. Most IMMs are solitary neoplasms. However, a small proportion of multiple IMMs may be associated with fibrous dysplasia syndrome— *Mazabraud* syndrome [6].

The clinical picture depends on the primary location. Manifestations of the disease are associated with compression syndrome of surrounding organs and tissues. IMMs are usually painless upon palpation. IMMs do not have specific radiological or ultrasound signs. As a rule, a cystic neoplasm with a solid component located in close proximity to the muscle is visualized [7]. Tumors are visualized by ultrasound and/or computed tomography (CT). CT reveals a hypodense formation with a density of about +20 HU. The same characteristics can also be found in other formations, such as hygroma, lipoma and others.

The "gold standard" for myxoma treatment is surgical removal of the tumor within healthy tissue without opening the tumor capsule. IMM is a slow-growing tumor with a favorable prognosis [8]. Relapses of the disease are possible and described [9]. The carbohydrate antigen CA 19-9 can be used as a biochemical control for relapse of the disease. In the blood of patients with IMM against the background of tumor relapse, an increase in its concentration is detected [10].

Clinical case

A 64-year-old female patient L. came to the emergency department of the on-duty surgical clinic with a report from a radiologist at a private clinic: "abscess of the iliac muscle on the right."

Upon admission, she complained of pain in the lumbar region on the right, which intensified with walking and physical activity. There were no complaints of dysuric disorders. There was no increase in body temperature.

She considered herself sick for about 4 months, was under the supervision of a general practitioner, and was treated with non-steroidal anti-inflammatory drugs without effect. Performed a CT scan independently. Conclusion: mass formation of the right iliac muscle (abscess?), urolithiasis, left kidney cyst. Sent to the on-duty surgical clinic. Hospitalized in the department of purulent surgery.

History: urolithiasis on the right side, extracorporeal lithotripsy in 2016.

The condition was satisfactory, fully consciousness. The skin was physiologically colored and clean. Breathing in the lungs was vesicular, there were no wheezes. Pulmonary percussion sound. Respiratory rate 16/min. Heart sounds are rhythmic and clear. Blood pressure is 120/80 mmHg, heart rate is 72 beats/min. The abdomen is symmetrical and not distended. On palpation it is soft, painless in all parts. The liver does not protrude from under the edge of the costal arch and is painless. Symptoms of peritoneal irritation are negative. Peristalsis is heard. The concussion symptom is negative on both sides. There is no swelling.

A series of multislice computed tomography of the abdominal organs and retroperitoneal space in the pelvic cavity reveals an encapsulated liquid formation in the thickness of the right iliac muscle with dimensions of 57×47×60 mm, volume 80–90 cm^3 , content density +13 HU, capsule thickness within the limits of visualization up to 3 mm. The volume of the right iliacus muscle is increased (Fig. 1–3). Conclusion. Massive formation of the right iliac muscle (abscess?), urolithiasis, cyst of the left kidney.

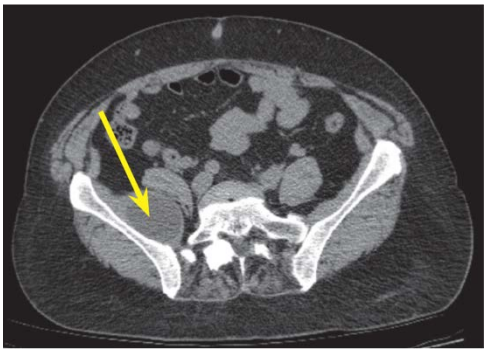

Fig. 1. Multislice computed tomography. The mass in m. psoas, axial plane

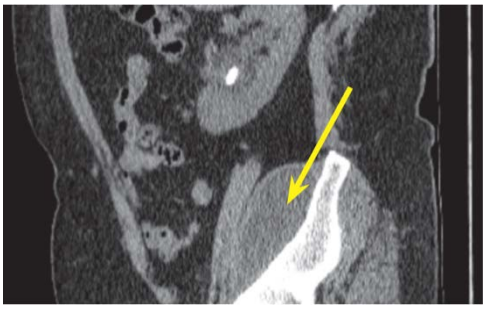

Fig. 2. Multislice computed tomography. The mass in m. psoas, sagittal plane

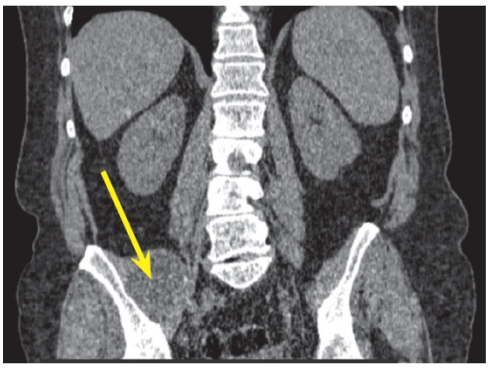

Fig. 3. Multislice computed tomography. The mass in m. psoas, coronal plane

Complete blood count within reference values.

C-reactive protein in blood serum 2.08 mg/l (normal 0.00–5.00 mg/l)

Preliminary diagnosis upon admission: Abscess of the iliac muscle on the right.

Treatment plan: the patient was offered puncture drainage of the abscess.

Operation protocol: under local anesthesia (0.5% novocaine solution 10 ml in an ultrasound operating room, under ultrasound guidance, at the level of the anterior superior spine on the right, 2 cm medial to it, a puncture needle with a string was inserted into the abscess cavity, along the string nephrostomy drainage 8 Fr was performed, yellow, slightly turbid contents were obtained, taken for culture and cytological examination. The drainage was fixed to the skin.

The next day after the operation, she noted an improvement, the pain in the lumbar region improved, she noted moderate pain in the wound, at the site of fixation of the drainage tube.

The abdomen was symmetrical and not distended. On palpation it is soft, slightly painful in the area of the drainage tube. Symptoms of peritoneal irritation were negative. The peristalsis was active. The concussion symptom was negative on both sides. Sufficient diuresis.

The drainage tube contained transparent mucus-like contents, which made it possible to suspect an intramuscular myxoma of the iliopsoas muscle, which was confirmed by instrumental, laboratory, cytological and microbiological studies.

Cytological conclusion: mucus, single macrophages. Epithelial cells and inflammatory elements were absent.

Subsequently, the cavity was washed with an aquazan solution. The repeated CT scan on the 3rd day after surgery revealed drainage and traces of air on the right under the iliacus muscle at the level of the iliac wing. The abscess cavity was not visualized. The thickness of the muscle was almost symmetrical, its contours were slightly indistinct. Concretions of the pyelocaliceal system of the right kidney with signs of pyelitis. Type I left kidney cyst. Uterine fibroids. After this, the drainage was removed.

Apparently, the pain syndrome was caused by pressure (compression) of the tumor on the surrounding tissue and discontiued after it was emptied.

The patient was discharged for outpatient treatment in satisfactory condition. The pain in the lumbar region has stopped.

CONCLUSIONS

1. Intramuscular myxoma is a rare neoplasm, and the primary location in the retroperitoneal space mimicking a psoas abscess is casuistic.

2. In the diagnosis of the disease, instrumental examination methods play the main role. Intramuscular myxoma is visualized by ultrasound and (or) computed tomography, but does not have specific radiological and ultrasound signs.

3. Performing puncture and drainage under ultrasound guidance allows you to obtain and evaluate the contents of the tumor formation, conduct cytological and microbiological examination. Cytological examination and analysis of the tumor contents for mucoids makes it possible to verify the diagnosis with a high probability.

4. The main treatment method for myxoma is surgery. Minimally invasive puncture-drainage therapy for myxoma is an alternative to open surgical treatment with subsequent monitoring.

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