

Mesothelial cyst of the round ligament

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SUMMARY: Mesothelial cyst of the round ligament.

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Mesothelial cyst of the round ligament is a rare finding in females, with only a few cases reported so far. A case of a 25 year old female patient presenting with a palpable mass in her right inguinal region is

presented. The preoperative investigation through ultrasound (U/S), computed tomography (CT) and magnetic resonance imaging (MRI) revealed the presence of an intraabdominal cystic lobular mass in the inguinal canal, in contact with the femoral vessels. The mass was excised and the diagnosis of a benign mesothelial cyst was made through pathological examination. Even though it is a rare condition, it is advisable that clinicians consider in the differential diagnosis when evaluating a non-reducible mass in the inguinal region of a female patient.

KEY WORDS: Groin - Hernia - Mesothelial cyst - Palpable mass.

Introduction

Palpable masses in the inguinal region represent a diagnostic challenge, particularly in the female population (1). Differential diagnosis of such groin masses in females include inguinal hernias, round ligament cysts, varicosities of the round ligament, inguinal herniation of the ovary, cystic lymphangiomas, epidermal inclusion cysts, abscesses, pseudoaneurysms, peritoneal cysts, hydrocele of the canal of Nuck and dermoid cyst of the round ligament (2).

A case of a young female patient, who presented with a tender, palpable mass in her right inguinal region is presented.

Case presentation

A 25 year old female patient presented in the outpatient clinic with a palpable mass in her right inguinal region. The patient reported intermittent pain for the previous two months. Her medical history was unremarkable. The patient was stable (blood pressure= 130/75 mmHg, Spo2= 100%, heart rate= 75 beats per min) and afebrile (36.6 C), while her laboratory investigation was within normal limits. The clinical examination revealed an irreducible mass that was painful on palpation. The patient had undergone investigation through ultrasound (U/S), computed tomography (CT) and magnetic resonance imaging (MRI) revealing the presence of a lobular cystic mass in the inguinal canal, which was in contact with the femoral vessels (Figure 1).

Surgical excision of this mass was decided. Under general anesthesia, the right groin was explored. After incision of the external oblique aponeurosis, the round ligament was found. Then, an elongated cystic mass about 5 cm in diameter across the round ligament of the uterus was revealed, passing through the inner inguinal ring (Figure 2). Following the to-

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Figure 1 - CT scan demonstrating a lobular cystic mass in the inguinal canal.

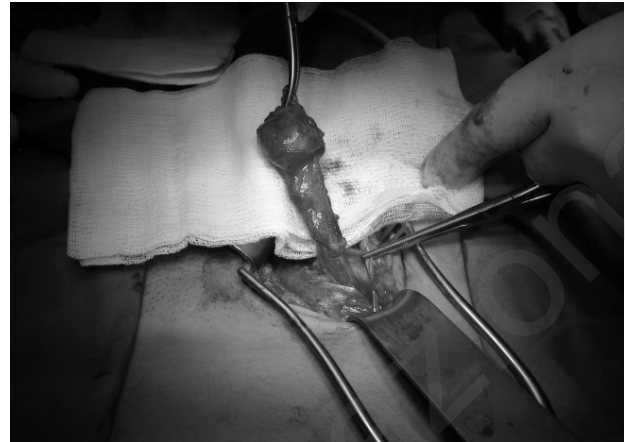


Figure 2 - Intraoperative image demonstrating an elongated cystic mass located at the round ligament of the uterus.

tal excision of the mass and of the round ligament, a tension-free mesh repair of the inguinal canal was performed, according to the Lichtenstein method. The recovery of the patient was uneventful and was dismissed on the following day of the operation.

Histopathological examination of the surgical specimen reported the presence of a white-grey cystic, in part, tissue measuring 5x4x3cm, comprised of simple cysts of mesothelial origin without evidence of malignancy. The patient is followed up in the outpatient clinic 6 years now without recurrence and she continues her every day activities without limitations.

Discussion

Mesothelial cysts of the round ligament of the uterus are a rare condition with only 10 cases reported in the available literature between 1980-2013 (3-5). In agreement with the present case, most authors report that the presentation of round ligament mesothelial cysts resembles that of inguinal hernias. The signs and symptoms associated with an inguinal hernia include the presence of a lump often associated with various radiating pain in the lower abdomen and upper part of the thigh (1, 6, 7). Spangen et al. reported that in some patients there is absence of palpable swelling, but only persistent groin and dull lower abdominal pain, often aggravated by physical exertion and always associated with a distinct point of tenderness over the internal ring during the Valsalva maneuver (8). It is also of note that a right side preponderance has been reported, similar to the

present case (7, 9, 10).

During embryological development at the 7th week of gestation, the fetal inguinal fold differentiates. The gubernaculum develops and descends from the lower pole of the gonads to the labioscrotal swelling. At the 12th week, the ovary descends to the pelvic rim and the cephalad half of the gubernaculum fuses to the uterus at the position of the uterine tubes. The caudal half forms the round ligament. During this descend along with a portion of the peritoneum called processus vaginalis or Nuck's canal in women, elements of layers of the abdominal wall are incorporated in the round ligament. Therefore, the fully developed round ligament consists mainly of smooth muscle fibers looped together in bundles, separated by fibrous tissue septa and containing blood vessels and nerve fibers, within a mesothelial investment (3, 10). Two main theories exist regarding the pathogenesis of mesothelial cysts (3-5, 7, 10). The first one supports a flawed obliteration of Nuck's canal. Depending on the level of the flaw, cysts may form at any level of the round ligament and can be pedunculated or wide-based. According to this theory a mesothelial cyst is the same pathology as a cyst of the Nuck canal (3, 10, 11). The second one is based on cyst formation to the inclusion of embryonic, mesenchymal, and mesothelial elements or remnants, during the development of the round ligament (3, 10). Furthermore, an association of these cysts with endometriosis, previous surgeries and pelvic inflammations, as well as the potential malignant transformation has been proposed (3, 12, 13).

In agreement with the mesodermal origins of the

round ligament, histologically, mesothelial cysts are lined, at least focally, by markedly atypical mesothelial cells. The imaging investigation of a groin lump in females with U/S, CT scan and MRI may help in the definition of nature and origin of the mass, as well as reveal the exact location which typically is medial to that of the usual inguinal hernia. However, the definite diagnosis is established intraoperatively (macroscopically) and finally, through the subsequent histologic examination (microscopically) (3, 14).

The surgical procedure involves total resection of the mass with or without round ligament resection and tension-free mesh repair of the inguinal canal. While in men the sac can be easily dissected away from the cord, in women it is often more difficult to separate the sac from the round ligament, as the former projects around the ligament until they almost meet posteriorly (3, 14).

Regarding follow-up of these patients, no protocol exists. Since the cyst is considered benign we follow-up the patient regularly (the first 2 years per 6 months and then annually) with clinical examination and imaging with U/S.

Conclusions

The mesothelial cyst of the round ligament is a rare entity that complicates the differential diagnosis of a palpable mass of the inguinal region in females.

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