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Preperitoneal Dermoid Cyst Simulating a Direct Inguinal Hernia: Case Report

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Abstract

Dermoid cysts of the inguinal region are rare events that can mimic hernias. More frequently located on the floor of the inguinal canal and often arising from the spermatic cord/round ligament, they mostly interest children and young people. Hereby we describe a case of a 63 year old man presenting a history of slowly progressive swelling with cough impulse in the left inguinal region. The patient underwent inguinal exploration with preoperative diagnosis of inguinal hernia. A cystic mass measuring 7 × 5 × 5 cm was found under the floor of the inguinal canal, deeply to the transversalis fascia. The mass was completely enucleated. The microscopic examination confirmed the intraoperative suspicion of dermoid cyst. The peculiarity of our case is based on three characteristics: site of the dermoid cyst, age of the patient and clinical symptoms. Particularly, in our detailed analysis of the literature, we have found rare cases of dermoid cysts of the inguinal region, but none of them were preperitoneal.

Keywords: Dermoid cyst; Inguinal canal; Hernia; Preperitoneal space

Introduction

Hernias are the most common causes of swelling of the inguinal region [1,2]. However, other pathologic conditions may mimic hernias, such as preperitoneal lipoma, supernumerary pectineus bursa, internal oblique muscle hematoma, angioma of the round ligament, pedunculated uterine fibroid, inguinal endometriosis, thrombophlebitis of the long saphenous vein, hydrocele, spermatocele, undescended testes, spermatic cord cyst, lymphangioma, lymphadenopathy, abscess and dermoid/epidermoid cysts [1-4]. With regard to dermoid cysts simulating inguinal hernias, they are rare [2], arise from the spermatic cord/round ligament and mostly interest children and young people [1,2,5]. Hereby, we describe a case of a preperitoneal dermoid cyst in a 63 year old man who presented clinical manifestations of a partially reducible inguinal hernia. To our best knowledge, this is probably the first case reported of preperitoneal dermoid cyst of the inguinal region.

Case Presentation

In December 2014, a 63 year old man was admitted to our ambulatory with a 24 months history of a slowly progressive swelling in the left inguinal region. The physical examination of the inguinal canal revealed a partially reducible non-tender swelling with cough impulse. We proceeded to an inguinal exploration with the suspected diagnosis of inguinal hernia. Surgery was performed through the left inguinal incision. A cystic mass measuring 7 × 5 × 5 cm was found lying within Hesselbach's triangle under the floor of the inguinal canal, deeply to the transversalis fascia in the preperitoneal space (Figure 1). The transversalis fascia was opened and the mass was carefully enucleated without opening of the peritoneum. The posterior wall of the inguinal canal was closed with an absorbable suture. A small indirect hernia was repaired using Trabucco tension free technique. The patient had an uneventful clinical course and he was discharged on the first post-operative day.

The cystic mass presented a smooth surface and, at the opening, contained a soft amorphous yellow material admixed with hairs. The microscopic examination confirmed the macroscopic diagnosis of dermoid cyst, with a thin wall composed of squamous epithelial cells and underlying pilosebaceous units, apocrine and eccrine glands (Figures 2 and 3). No other tissue elements were found.

Discussion

Dermoid cysts are congenital cutaneous inclusion cysts. Histologically, their wall is composed by skin with all of its appendages (i.e., hair follicles, sweat, apocrine and sebaceous glands) and is characterized by a well-differentiated stratified squamous-cell epithelium. The presence of skin appendages differentiates dermoid cysts from epidermoid and sebaceous cysts, whereas the

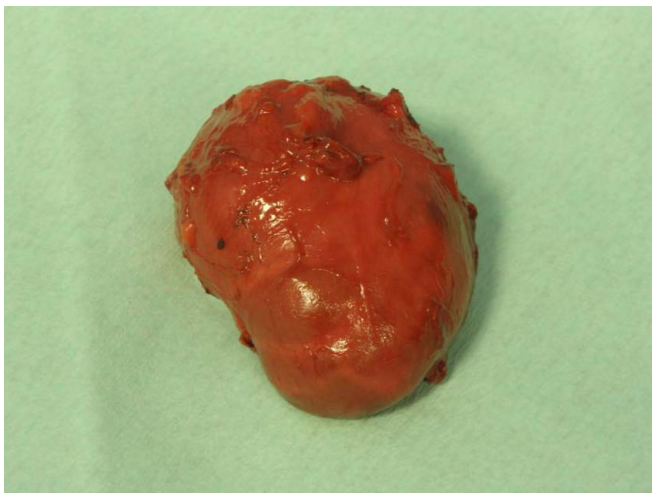

Figure 1: Postoperative photo of the cyst (size: 7 × 5 × 5 cm) showing smooth external surface.

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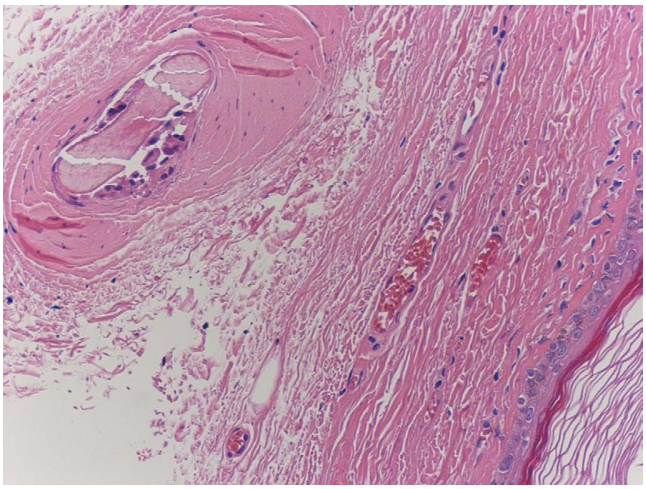

Figure 2: Microscopic examination showing the cyst wall composed of stratified squamous epithelium along with a pilosebaceous unit (H&E stain; original magnification x20).

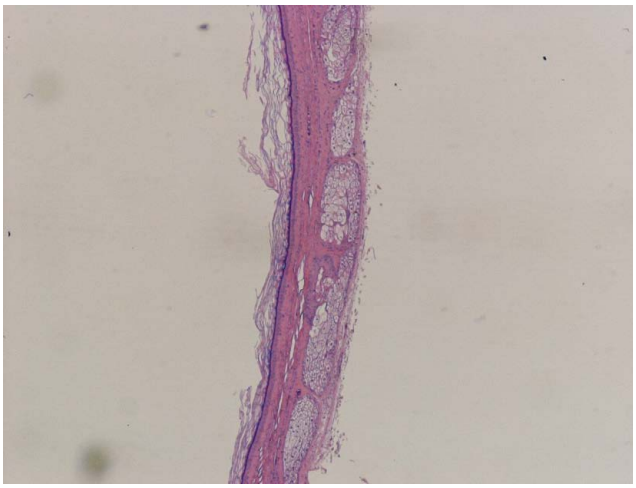

Figure 3: Microscopic examination showing the cyst wall with slightly dilated apocrine glands (H&E stain; original magnification x20).

absence of structures foreign to the skin (i.e., cartilage, respiratory, or gastrointestinal lining cells) differentiates them from benign cystic teratomas found in the ovarian, testicular, retroperitoneal, and sacrococcygeal region [1,2].

Although dermoid cysts are associated with a potentially malignant clinical degeneration, no cases of late recurrences or metastases have been reported. Surgical excision remains the treatment of choice [1,2]. The peculiarity of our case is based on three characteristics. First and most important, unique in our opinion, the site of the dermoid cyst. It was the preperitoneal space deeply to posterior wall of the inguinal canal. No cases of dermoid cysts located in this area were previously described. More frequently, abdominal dermoid cysts are found in pre-sacral space [6-8], pancreas [9,10], ovary [11-14], whereas their localization into the rectum is very rare [15,16]. Many cases of retroperitoneal benign cyst teratomas (wrongly indicated as dermoid cysts) are described, but they differ from dermoid cysts because contain tissue from all three germinal layers, as previously indicated. The only report regarding a preperitoneal mass of the lower anterior wall uses the two terms “dermoid cyst” and “cystic teratoma” as synonyms, so it probably cannot be considered [17]. With regard to cystic swellings during inguinal dissection, case reports are about dermoid cysts found on the floor of the inguinal canal and originated from the spermatic cord/round ligament or separate from it [1-5,18-21].

The second particularity of our case was the age of the patient. In fact, the patient was adult (63 year old), whereas most of dermoid cysts localized in the inguinal region are reported in children and young people [1,2,5,19,20]. We have found very rare case reports in the current literature describing a dermoid cyst of the inguinal canal masquerading as irreducible or complicated inguinal hernia in adult patients [21-23].

Finally, the third characteristic was the symptomatology of the patient. The clinical history (slowly progressive swelling in the left inguinal region) and the physical examination (partially reducible non-tender swelling with cough impulse) suggested an inguinal hernia. Inguinal dermoid cyst mimicking irreducible hernia is rare but possible entity. Diagnosis is often mistaken clinically. Hesselbach’s triangle is a well-known site of a visceral direct herniation in adult and it’s not so strange that a mass located there could herniate. But furthermore, in our case, the mass was located unusually in the pre-peritoneal space.

The clinical history and the physical examination of our patient were exhaustive for the diagnosis of inguinal hernia, so no further preoperative investigation was performed. However, an increased level of suspicion is advisable whenever clinical manifestations are not specific, in order to avoid intraoperative surprises. In this circumstance, preoperative imaging techniques (ultrasonography, computed tomography or magnetic resonance) are mandatory. Complete surgical excision of the dermoid cyst was the treatment of choice and the patient is disease-free at follow up.

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