

An Uncommon Right Groin Endometriosis Mass in a Young Male Patient: A Challenge of Differential Diagnosis of Inguinal Hernia

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Abstract: *We are dealing with a case of a 24-year-old male patient, who came to our Department presenting a painful mass in the right inguinal region. His past-medical history revealed that, he was operated during his infant age for undescended homolateral testis. Our Clinical evaluation found out that, the patient was stable, oriented, with a regular and firm mass in the right groin region. The ultrasound described a non-specific cystic mass, with regular surface. The blood test results were in normal ranges. The patient was shifted to operating theater via an incision similar to inguinal hernia repair, an mass of 5,5 cm, with old blood, was removed, as well as some small tubules. The microscopic analysis defined a cystic mass with thick smooth muscle surrounding a central canaliculi bordered by endometrium. Immunostains correlated with increased estrogen, decreased testosterone as well as Immunoglobulin type CD10 (+), ER(+), PR(+), AE1(+), AE3(+), OCT(-).*

Keywords: Inguinal hernia, inguinal mass, endometriosis, male gender

1. Introduction

Endometriosis is an ectopic endometrium (1, 2). In the medical literature reported cases of endometriosis in males following surgery are negligible (5, 6, 7, and 8). This case is one of the rarest, in which a uterine-like mass endometriosis raised in the right inguinal region closed to the ductus deferens in a young man, with past history of undescended testis surgery, by being confused clinically with a groin hernia.

2. Case Report

A 24-year-old man with a past history of orchidopexy for undescended right testis, presented to our Department of Surgery with a well-circumscribed mass in the right inguinal region. His clinical examination noticed normal external genital organs. A right groin region Ultrasound was performed and revealed a cystic mass with regular surface. Full blood count in normal ranges. The patient was shifted to operating theater, in which a mass was noticed adjacent to spermatic cord, then excised, with a lumen containing a well-defined mucosa, as well as filled by old blood. At histological view, the macroscopic diameters of the mass was 5,5x3,8x3 cm. The dissection found out an inguinal duct's wall with internal cystic transformation, which is compatible via immunophenotypes with cystic endometriosis. Immunostains were positive for hyperestrogenemia as well as decreased testosterone. This endometrial cyst was associated with immunophenotypes CD10 (+), ER(+), PR(+), AE1(+), AE3(+). OCT(-). The Patient was discharged from the Clinic in a very good general state, with a recommendation to assess blood hormonal level (progesterone/estrogen).

3. Discussion

The definition of endometriosis is histological and it requires the identification of the presence of endometrial gland and stroma-like tissue outside (ectopic) the uterus (1, 2, 3, 4). These ectopic lesions are commonly located on the pelvic organs and peritoneum (6, 8, 11, 12). Occasionally, ectopic endometriotic lesions can be found in other parts of the body such as kidney, bladder, lungs, and even in the brain (9, 10, 11, 15). Very and very uncommon, it can occur in male like in our case dealing with a young man with a cystic endometrial mass in the inguinal region mimicking an inguinal hernia. The clinical presentation of endometriosis is varied and conclusive diagnosis requires surgery followed by pathologic analysis of the excised smear (7, 8, 10, 12 and 16).

The historical perspective of ectopic endometrial tissue is very complex. In fact, during the mid-part of the 19th century, Rokitsky had a great intuition: endometrial glands and stroma can be present in ovarian and uterine neoplasias. However, using histological parameters of endometrial structures and activities, the first scientist to delineate peritoneal endometriosis under the name 'adenomyoma' was Cullen. On the other hand, Rokitsky was the first to describe a form of adenomyosis (an adenomatous polyp) (17, 18). Early descriptions of ovarian endometrioma as 'haematomas of the ovary' or 'chocolate cysts' date back to the end of the 19th century. The first mention of an 'ovary containing uterine mucosa' was published in 1899 by Russel, but Sampson was the first to demonstrate specific endometrial activities, such as desquamation at the time of menstruation and decidualization in pregnancy; subsequently, he presented a theory on its pathogenesis (13). The cause of this condition is not entirely clear. Risk factors include having a family

history of the condition. The areas of endometriosis bleed each month, resulting in inflammation and scarring. Regarding its pathophysiology, some literatures suggest that stem cells, dysfunctional immune response, genetic predisposition, and aberrant peritoneal environment may all be involved in the establishment and propagation of endometriotic lesions (1, 2, 3, 4). However, numerous authors suggest that estrogen's level is a potential risk factor of endometriosis in males (5). The majority of male endometriosis cases are thought to be a consequence of prolonged hormone therapy (6, 7, 9, 13, 14). For example, two cases of endometriosis in men who had undergone prostate cancer treatment were published: one in 1979 and another in 2012. Prostate cancer treatments contain estrogen. Other cases may be associated with increased estrogen levels caused by liver cirrhosis, or by liver failure. The body may start converting more androgens — or male sex hormones — into estrogen as a consequence of liver damage. One example of endometriosis in a 52-year-old man with liver cirrhosis was published in the *Avicenna Journal of Medicine*. Another study, published in the *International Journal of Surgical Pathology*, detailed the case of a man taking spironolactone for liver cirrhosis, which could have caused further hormonal imbalance. Obesity can also be a risk factor for endometriosis in men, as it could lead to increased estrogen levels. A study, published in *Case Reports in Obstetrics and Gynecology* in 2018, addressed a man with endometriosis who had not received hormone therapy or been diagnosed with cirrhosis. The only potential factor identified by its researchers was “hormonal alterations secondary to obesity (14).”

Inflammation following surgery can, in very rare cases, cause endometriosis. One such case, published in the journal *Gut and Liver*, describes a male patient who was diagnosed with endometriosis following surgery, despite being given medications to reduce estrogen levels. Other causes of similar symptoms include pelvic inflammatory disease, irritable bowel syndrome, interstitial cystitis, and fibromyalgia (13).

In sum, endometriosis attached to groin region in male patients is a very rare occurrence, and represent a challenge of inguinal hernia differential diagnosis. This patients are prone to infertility, thus the necessity of andrology consultation for testosterone supplementation.

Ethical Consideration: Prior, a written informed consent was receive from our patient

Author Declaration: There is no conflict of interest

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