

ENDOMETRIOSIS OF THE GROIN: THE ADDITIONAL VALUE OF MAGNETIC RESONANCE IMAGING (MRI)

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We report a rare case of endometriosis of the groin in a young woman. This case shows how difficult the diagnosis of unusual manifestations of endometriosis can be. The diagnosis was suspected by a careful history and physical examination. Diagnosis was supported by timely performed Magnetic Resonance Imaging, which illustrates its additional value. It can be argued that MRI could be the first choice of imaging technique for the assessment of young women with nonspecific or unexplained complaints of the groin. Even more important is the familiarity of physicians other than gynaecologists with rare manifestations of this common disease.

Key-word: Endometriosis.

Endometriosis is a common disease defined as the presence of endometrial glands and stroma outside the uterus. An uncommon and often unknown localisation for endometriosis is the groin. Diagnosis of this rare manifestation is difficult for many reasons (1).

We report a case of a 28-year old woman with nonspecific symptoms for more than one year based on unrecognized endometriosis of the groin. The diagnosis was suspected by a careful history and physical examination. The diagnosis was supported by timely performed Magnetic Resonance Imaging, which illustrates its additional value.

Case report

A 28-year old woman without a significant medical history was seen in the outpatient clinic of the surgical department. She complained of chronic pain of her right groin for more than one year. Initially, a tentative diagnosis of an inguinal hernia was made because she noted recurrent swelling of her groin. However, the surgeon was triggered by the fact that her complaints had a cyclical pattern coincidental with her menstrual cycle. The patient had noticed the cyclical pattern since she had stopped taking oral contraceptives because of the wish to get pregnant. Based on the history and the physical examination endometriosis of the groin was suspected. The sur-

geon consulted a gynaecologist of a tertiary care centre. The gynaecologist advised to proceed by performing an additional MRI. The initial evaluation of the MRI suggested an inguinal mass, interpreted as an inguinal hernia. However, on careful re-evaluation of the MRI-scan by a dedicated abdominal radiologist, the tentative diagnosis of an inguinal localisation of endometriosis was supported by the results of the MRI. MRI findings are displayed in figure 1 and 2.

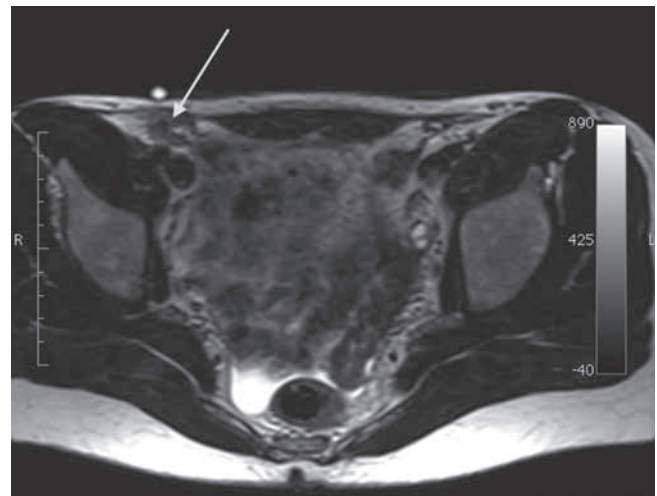


Fig. 1. — Axial T2-weighted Fast Spin Echo (TR/TE 5460/110) image of the pelvis. In the right groin (arrow), a hypo-intense lesion with spiculated border can be seen corresponding to a fibrotic reaction surrounding the endometriotic foci.

Based on the history, the physical examination and the MRI the patient was scheduled for surgery. Before surgery the patient was seen by a gynaecologist to rule out pelvic manifestations of endometriosis. At gynaecological examination and transvaginal sonography no other signs of endometriosis were present.

The groin was explored under general anesthesia and the mass was completely excised. Histological examination of the removed tissue confirmed the diagnosis of endometriosis. After this procedure she was free of symptoms.

Discussion

Endometriosis is one of the most common benign gynaecological conditions with an estimated prevalence of about 10% (Eskenazi and Warner 1997). It is a debilitating disease with detrimental effects on social, occupational and psychological

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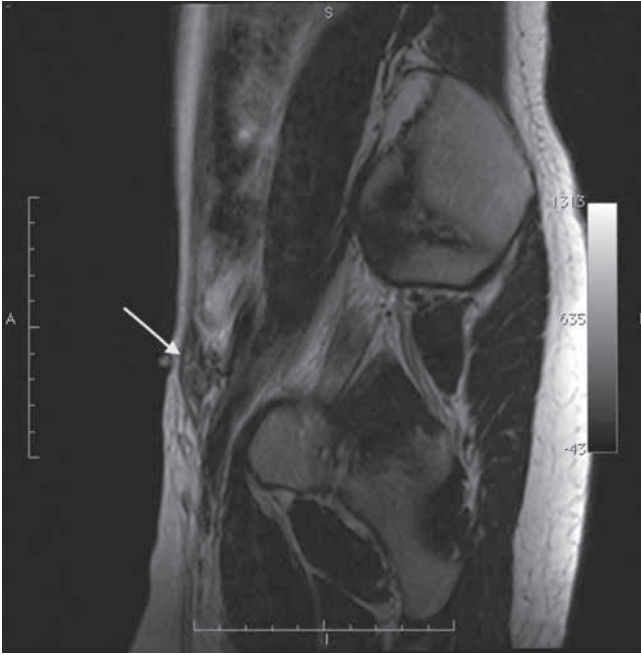


Fig. 2. — Sagittal plane T2-weighted image of the same lesion as figure 1. The hyper-intense endometriotic foci (arrow) central in the lesion can now be better appreciated.

functioning (2). The prevalence increases up to 30% in patients with infertility and up to 45% in patients with chronic pelvic pain (3-6).

The first description of endometriosis was given by Cullen in 1896, who suggested the resemblance of adenomyotic nodules in the rectovaginal septum with the mucous membrane of the uterus. Later on, endometriosis was also described in other pelvic locations such as the peritoneum and the ovary. This led to several theses on the pathogenesis of endometriosis (Cullen, 1896). The most viable theses nowadays are the induction theory (7) (induction of metaplastic process in ovaries by releases of endogenous factors), the in-situ development theory (8) (ectopic endometrium develops in-situ from local tissues including germinal epithelium of the ovary or remnants of the Müllerian ducts and in situ metaplasia of mesothelial serosal cells which are totipotent) and the retrograde transplantation theory (9). In the latter, endometrium enters the abdominal cavity based on retrograde menstruation and seeds to develop an endometriotic lesion. The adhesive properties of endometrial cells are important in implantation and menstruation (10).

Clinicians as well as radiologists are unfamiliar with rare manifestations of endometriosis. Therefore, its

diagnosis is a challenge. In addition, the clinical presentation and physical examination are usually nonspecific. Even more complicating, endometriosis can coincide with other diseases like an inguinal hernia. Therefore, it is often not suspected prior to surgical resection and diagnosis is usually made by the pathologist.

The most classical manifestation of endometriosis of the groin is a mass. It may change in size during menses, or be painful with cyclic exacerbations which are evoked by cyclical bleeding of the endometriotic tissue. The nature of the lump may be cystic or more solid, depending on the haemorrhagic and surrounding fibrotic component. The fibrotic component is evoked by the chronic inflammatory nature of the disease.

The differential diagnosis of a groin mass is wide. Most common pathologic conditions are an inguinal hernia and enlarged lymph node(s). The usual first step in the assessment is ultrasound, especially in the young (11-15). Ultrasound can differentiate between an inguinal hernia, enlarged lymph nodes and solid/cystic masses. However, further classification of mass lesions on ultrasound is elusive. It lacks distinguishing features. In addition, cystic components of the endometriotic lesion may be very similar to an inguinal hernia. Besides that, it is clear

that endometriosis with only minimal tissue changes is easily missed by ultrasound.

The use of MRI in patients suspected of endometriosis is expanding. Although small endometriotic implants on the peritoneal surface can be missed, there is a high level of agreement between MRI and laparoscopy, which is still the reference standard for the classification of endometriosis (16-21). The value of MRI in addition to laparoscopy is the guidance of the invasive procedure and detection of deep (subperitoneal) located endometriosis, inaccessible for laparoscopy.

Our case illustrates the value of MRI to support a tentative diagnosis of endometriosis located at unusual sites like the groin. One important condition remains however the awareness of and familiarity with the disease of the attending physician. Besides that, considering the quality of our MR images illustrates that the awareness of a possible endometriotic lump would have resulted in the application of a more dedicated MR protocol, consisting of high resolution T2-weighted Turbo Spin Echo in three orientations of the pelvis combined with fat suppressed T1-weighted sequences. Further, it is expected that the application of higher than 1.5 T field strengths will enhance image quality (21).

The significant role of MRI in the diagnosis of endometriosis is related to the nature of the endometriotic foci and related imaging features. Endometrial tissue implants are affected by cyclic menstrual changes with periodic bleedings. These foci evoke an inflammatory reaction with subsequently development of surrounding fibrosis. Therefore, endometrial foci show signal intensities on MRI corresponding to blood and its degradation products. The signal intensity depends on the age of the bleeding. Foci that have more recently bled, show hyperintense signal intensity on T1 and foci with bleeding of more older age show shading on T2 corresponding to hemosiderine sediment. The endometriotic foci usually are surrounded by a more or less fibrotic reaction, showing as a diffuse hypo-intense infiltration with speculated border on T2-weighted sequences.

The preferable treatment of endometriosis of the groin is excision of the lesion with minimal spillage in order to decrease recurrence (14). Additionally, laparoscopy could be performed to evaluate for concomitant pelvic localisations of the disease

depending on the patients history and physical examination (12).

In conclusion, we would like to emphasize the role of MRI in the diagnostic pathway of unusual localisations of endometriosis.

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