

Case Report - An Unusual Peritoneal Endometriotic Implant

M Bardi^{*1}, F Pedica², G Pezzetti¹, GL Taccagni², R Laquintana¹, G Gangarossa¹, A Iliakis¹, C Di Cesare¹, D Perrucci¹, B Salerno¹ and P Rosaschino¹

¹Department of Obstetrics and Gynecology, Polyclinic San Pietro (San Donato Group), Ponte San Pietro (BG) - Italy

²Department of Experimental Oncology, Pathology Unit, San Raffaele Hospital (San Donato Group), Milan - Italy

*Corresponding author

Bardi Massimo - Senior Consultant Department of Obstetrics and Gynecology, Polyclinic San Pietro, Ponte San Pietro (BG) - Italy - E-mail: massimo-bardi@alice.it

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Abstract

Endometriosis is defined as ectopic presence of endometrial tissue outside of uterine cavity. Superficial peritoneal endometriosis is characterized by small superficial lesions modifying from white to dark brown shades. Dimension goes from few millimetres to 3 centimetres.

We report a case of a 38 years old patient who has not had a signification in gynaecological pathology until five-six months before the gynecological check, when dysmenorrhea conditions associated at depth dyspareunia arose. Clinical and ultrasound investigations showed the presence of a pelvic cystic lesion, around 5 cm in diameter, diagnosed in the first instance as endometriotic cyst of the left ovary.

The cystic lesion in the pelvis was confirmed by laparoscopic inspection. Really it was a large peritoneal implant (the left ovary was perfectly normal).

The pathological report confirmed that a component of the lesion had nodules of florid endometriosis. It doesn't exist ovarian cortex, but definitely a responsive mesothelium: the examined tissue has to be diagnosed with peritoneal endometriotic implant.

Conclusions

We refer to a case of peritoneal endometriotic implantation that has unusual dimensions (5 cm in diameter) late-onset in a woman who has experienced a specific symptomatology only in the last 6 months before the diagnosis

Keywords: Superficial Peritoneal Endometriosis; Transvaginal Ultrasound; Laparoscopic Surgery

- Superficial peritoneal endometriosis;
- Ovarian endometriosis (cysts or endometriomas);
- Deep infiltrating endometriosis.

Introduction

Endometriosis is a common but complex gynaecologic disease. It is defined as an ectopic presence of endometrial tissue outside the uterine cavity. It is one of the most frequent problem found in gynaecology: 10% of fertile women are afflicted by endometriosis and it reaches 40% in infertile women. Endometriosis is second only to uterine fibroids as cause of surgery in pre-menopause women.

Dysmenorrhea, chronic pelvic pain and infertility are the most common endometriosis symptoms. However, symptoms seriousness is infrequently related to disease extension but frequently it is observed by chance during surgical intervention or researching medical condition such as infertility.

Endometriosis rarely degenerates into neoplasm, but it can compromise in an extremely serious way afflicted woman's health causing enormous economic and social consequences. Endometriotic disease is identify by the type of position into:

In many cases lesions can coexist. However, such subdivision is useful to diagnostic and therapeutically purpose.

Superficial peritoneal endometriosis is characterized by small superficial lesions modifying from white to dark brown shades. Dimension goes from few millimetres to 3 centimetres.

Morphologically, red peritoneal lesions are located systematically on the peritoneal surface and are characterized by numerous proliferative glands with a columnar or pseudostratified epithelium, as observed in proliferative eutopic endometrium.

When compared with eutopic endometrium, the lower expression of cytokeratin in the epithelium of peritoneal endometriosis could be interpreted as a lesser degree of differentiation or as a delay in differentiation [1]. The three-dimensional representation of the vascular network located at the junction between the red lesions and the peritoneum revealed to us the main role of angiogenesis.

The high stromal vascularization suggests angiogenesis induced by recent implantation through growth factors or cytokines. One of these angiogenic growth factors, vascular endothelial growth factor, recently was detected in the peritoneal fluid of patients with endometriosis [2].

After this partial shedding, the remaining red lesion always regrows constantly until the next shedding, but menstrual shedding finally induces an inflammatory reaction, provoking a scarification process that encloses the implant. The enclosed implant becomes a “black” lesion for the presence of intraluminal debris, with secondary progressive devascularization. Sometimes, complete devascularization is accompanied by an increasingly broad fibrosis of endometriotic foci which is shown, on a peritoneal level, as a “white” lesion. White opacification and yellow-brown lesions are latent stages of endometriosis and are lesions that could be quiescent for a long time [2].

Case Report

The following is the analysis of a case (patient B.C., 38 years old) where a pelvic peritoneal endometriotic implant reaches considerable dimensions, as much as mimic an ovarian endometrioma.

Family history: sister afflicted by ovarian and deep infiltrating endometriosis.

Remote pathological anamnesis: thalassemia carrier. In 2014 benign phyllodes tumour has been excised in left side breast.

Obstetrician anamnesis: two pregnancies with eutocical birth.

Regular menstruations for rhythm, duration and quantity.

No signification in gynaecological pathology until five-six months before the gynecological check, when dysmenorrhea conditions associated at depth dyspareunia arose (September 2018).

Gynaecological check has highlighted a taut-elastic neoplasm, fixed, slightly painful and located in left adnexal. It is also reported the presence of a large polyp in cervical canal.

Transvaginal Ultrasound

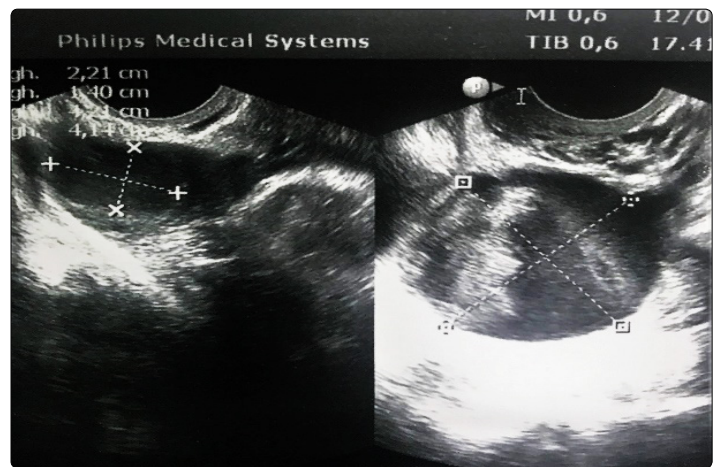


Figure 1

Myometrium was uniform in echo-structure, endometrium was coherent with the menstrual phase. Right ovary showed a 2,2 x 1,4 cm endometrioma (Figure 1), whilst in left adnexal region there was a cystic lesion of 4,1 x 4,2 x 4,8 cm with irregular content: “ground-glass” hypoechoic with an hyperechogenic area in median pole. There were no aspect of pathological vascularization and no sliding-sign.

When a first diagnosis of left ovarian endometrioma are suspected, considering the lesion on the right and the type of symptoms, surgery was planned.

Laparoscopic Surgery

After one month laparoscopic surgery was performed.

Description

After the induction of pneumoperitoneum, a cystic lesion was detected with blue colour around 5 cm in diameter, tenaciously attached to the left region of pelvis. (Figure 2). The cystic neoformation was emptied, and suddenly broken in several parts, coming up of material that resembles chocolate. At this point, the left ovary looked regular (Figure 3). The lesion was wholly resected after a careful unstick of the cystic residual of pelvic cavity and the front rectal wall.



Figure 2

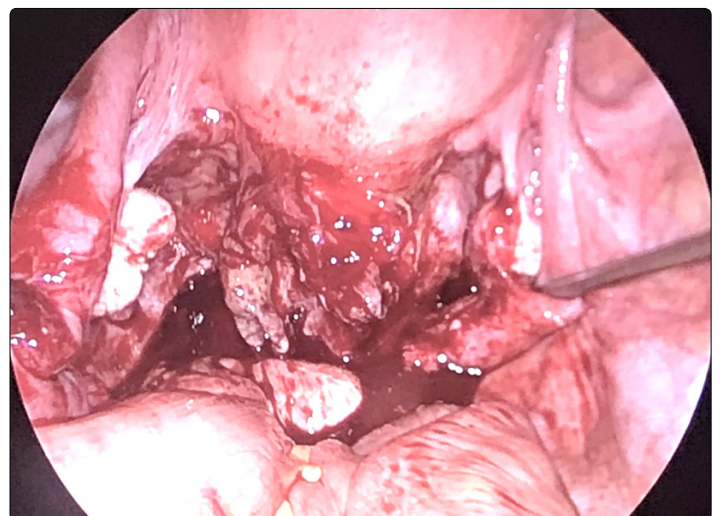


Figure 3

The recovery after surgery was regular and the patient was discharged from the hospital after 24 hours.

Pathology Reports

At gross examination, a smooth strip of greyish tissue of cm 8x4, from which several samples were taken.

The histology showed an endometriotic cyst covered by endometrial type epithelium, irregularly proliferative in aspect and with ciliated cells (tubal) metaplasia; the wall of endometriotic cyst had mild

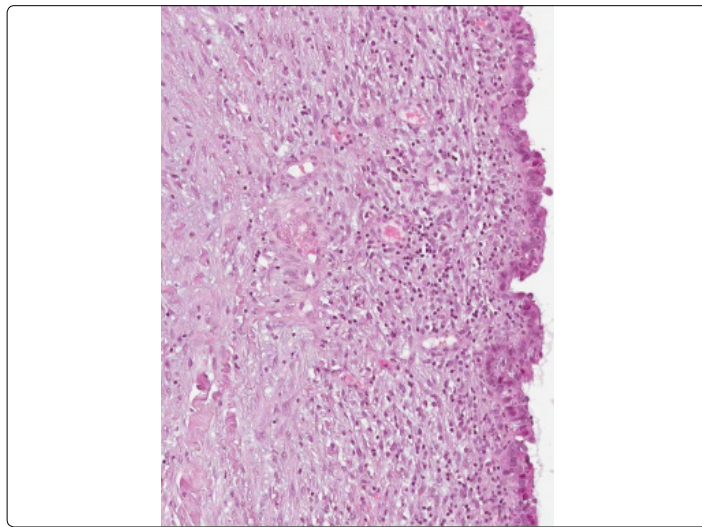


Figure A: Cystic Component of the Endometriosis with Endometrial-Type Epithelium and Stroma

lympho-macrophagic inflammatory infiltration, multiple areas of old and fresh haemorrhages, and with moderate fibrosis and sclerosis.

A component of the lesion had nodules of florid endometriosis, with irregularly proliferative endometrial glands, and with abundant cytogenic endometrial type stroma (Figure A and B).

It doesn't exist ovarian cortex, but definitely a responsive mesothelium: the examined tissue has to be diagnosed with peritoneal endometriotic implant.

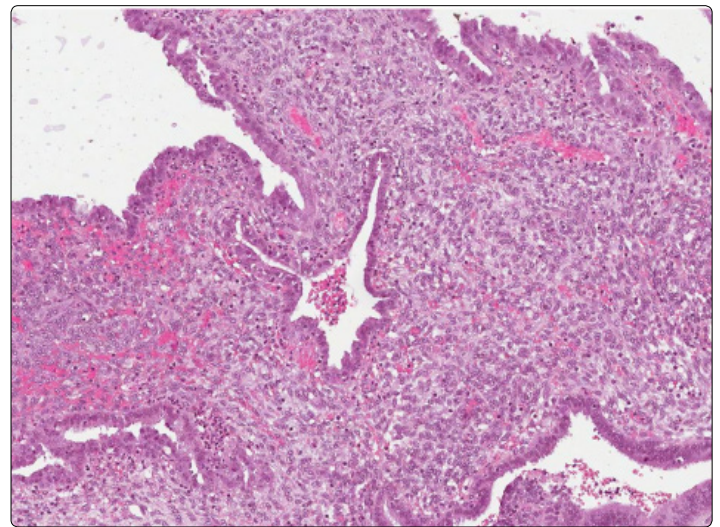


Figure B: Nodular Area of Endometriosis with Endometrial-Type Epithelium and Abundant Stroma

Post-Surgery Follow-up

After one-month from surgery a gynecological check-up and a transvaginal ultrasound have been performed. The patient in post-menstrual phase reports the complete remission of painful symptomatology both menstrual than and sexual intercourse. It only persists moderate diskezia.

Vaginal exploration doesn't reawaken pain and highlights a normal reproductive system.

Transvaginal ultrasound confirms the normality of reproductive system with integrity of recto-uterine septum and pelvic sliding-sign presence.

Discussion and Conclusions

The precise molecular pathways that allow construction and survival of endometrial cells in peritoneal ectopic sites remain barely known, bringing endometriosis to be labelled as "enigmatic disease" [3].

The retrograde menstruation spreading of endometrial tissue has been initially supposed as endometriosis histogenesis cause: endometriosis is deduced from reflux of endometrial fragment overflow through fallopian during menstruation with subsequent peritoneum and ovary implant [4]. However, others factor have been considered such as a possible imbalance of steroid hormone incretion, a compromised immune function and some epigenetic changes activated by environmental toxic substances [5].

The mesenchymal-to-epithelial transition (EMT) refers to the special Biologic process of epithelial cell that has been transformed in mesenchymal phenotype. The EMT provide cells with migratory and invasive properties, basic for embryonic development, for chronic inflammation process, tissue reconstruction and for metastatization neoplastic [7,8]. In EMT progression, cells lose polarity and connection with basement membrane, its express less cell-surface markers such as cadherin E and keratin and they express more mesenchymal markers such as cadherin N and vimentin. The epithelial phenotype loss provides good conditions for endometriosis lesions development, probably modulated by estrogenic incretion.

Estradiol contributes to the endometriosis development promoting cellular invasion. The apoptosis mechanism alteration mediated to estradiol allows to escape at proliferative endometrial cells (regurgitated from peritoneal cavity) from immune clearance, attaching and invading the surface, inducing to neovascularisation and by establishing an endometriotic implant. Estradiol that is the base of algic symptoms strictly related to the peritoneal implant development is also a critical mediator of the interaction between macrophages and nerve fibres newly formed [6].

Endometriosis has special biologic components that are akin to malignant tumour. Inside the peritoneal cavity, the initial endometriosis lesions cause an accommodating microenvironment called "pro-endometriosis recess". This recess protects endometrial stromal fragment regurgitated inside pelvis of retrograde menstruation. After the cystic stockpile due to the existing lesion, a

mesenchymal-to-epithelial transition takes place and brings to different initial biological characteristics compromising the immune surveillance. The subsequent retrograde menstruations of endometrial stromal cells in the pro-endometriosis recess simplify the progression form a premature beginning to an advanced lesion [9].

The taking home messages are that peritoneal endometriosis can have unusual dimension and there can be a late onset of symptoms and subsequent diagnosis in a 38 years old woman already mother of two sons. The speed of growth of implants seems to be particularly high, since no previous gynaecological check-up had suspected endometriosis before.

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