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Case Report

Association Between Cervical Cancer And Deep Endometriosis

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Abstract

Endometriosis is an important gynecologic disorder. Classically it is defined as the growth of functional endometrial tissue outside the uterine cavity. Cervical cancer is usually associated with HPV infection and regarding the natural course of the disease, the evolution is with invading surrounding structures: vagina, broad ligaments, uterosacral ligaments, rectum, ureters, bladder. We discuss the case of a 38 years old woman diagnosed with cervical cancer and known with endometriosis. At pelvic examination she had right vaginal fornix retraction. We performed exploratory laparoscopy and saw that vaginal retraction was because of the fibrosis from endometriosis. Intraoperative we found stage IV endometriosis. There was a pelvic aderential syndrome caused by a tumor which was adherent to the uterus, both ovaries, rectum, sigmoid colon and right ureter. The pathology report revealed in-situ cervical carcinoma without lymph node metastasis, right parametrial and right ureteral endometriotic nodule, pelvic endometriosis. Deep infiltrating endometriosis can be felt at palpation as induration of uterosacral ligaments or vaginal walls and also the same for advanced cervical carcinoma. The existence of unrecognized deep endometriosis in cervical cancer patients can be interpreted as a more advanced cancer stage than in reality). Deep endometriosis can be mistaken with tumor extension. This can result in staging errors and a wrong therapeutic conduct. Thus in patients with history of endometriosis, clinical staging of cervical cancer may be inappropriate. MRI with endo protocol should be considered and perhaps intraoperative frozen sections to decide the extent of surgery.

Keywords: *Endometriosis; Cervical Cancer; Laparoscopy; Deep Infiltrating Endometriosis*

Introduction

Endometriosis is an important gynecologic disorder primarily affecting women during their reproductive years. Classically it is defined as the growth of functional endometrial tissue outside the uterine cavity [1]. Cervical cancer is usually associated with HPV infection and regarding the natural course of the disease, the evolution is with invading surrounding structures: vagina, broad ligaments, uterosacral ligaments, rectum, ureters, bladder.

Case Report

We discuss the case of a 38 years old woman who was referred to us after a cervical biopsy that revealed a squamous carcinoma of the cervix well differentiated and who was known with right ovarian endometriotic cyst of about 8 centimeters diameter. Also she had a MRI exam of the pelvis before reaching us, with I.V. contrast, which showed a uterine cervix of 3,6/3,4 centimeters; the parauterine, paracervical and paravaginal tissues were normal and there were no pelvic or lombo-aortic lymph nodes involvement. At pelvic examination she had right vaginal fornix retraction.

The cancer stage could have been IB1 if the vaginal retraction was because of the endometriosis or IIA1 if it was because of the cancer extension. However the surgical procedure we would have been performing it is the same for both stages: laparoscopic radical hysterectomy with pelvic lymph node dissection.

We performed exploratory laparoscopy and saw that vaginal retraction was because of the fibrosis from endometriosis. Intraoperative we found stage IV endometriosis. There was a pelvic aderential syndrome caused by a tumor which was adherent to the uterus, both ovaries, rectum, sigmoid colon and right ureter.

After viscerolysis we performed bilateral internal and external iliac lymph node dissection, in-block resection of left and right ovaries, uterus, left parameter and the upper third of the vagina.

The right parameter was infiltrated by a recto-vaginal nodule that also infiltrated the right ureter and anterior rectal wall. The nodule was resected afterwards with dissection and rectal shaving. During the shaving the anterior rectal wall was injured (7 millimeters) and sutured with 3/0 monofilament absorbable suture.

Postoperative evolution was uneventful and the patient was discharged in the fifth day after surgery.

The pathology report revealed *in situ* cervical carcinoma without lymph node metastasis, right parametrial and right ureteral endometriotic nodule, pelvic endometriosis.

Discussion

Endometriosis is the presence of endometrial tissue in extrauterine sites, typically in the ovaries and peritoneal cavity. The tissue responds to hormones in a similar manner to that of normally sited endometrium and may result in cyclical symptoms including pain and bleeding during the menstrual cycle [2,3].

Three theories have been proposed to explain the origin of endometriosis. First is the metastatic theory (retrograde menstrual implantation, vascular and lymphatic spread, and intraoperative implantation); second is the metaplastic theory (differentiation of serosal surfaces or mullerian remnant tissue) and third is the induction theory (combination of both former theories) [4].

These ectopic endometrial implants are usually located in the pelvis, on the pelvic peritoneum but may be also be found on the ovaries, rectovaginal septum, ureter, and rarely in the bladder, pericardium, and pleura. More rarely, colon, small intestine, appendix, umbilical scar and even lung and brain tissue may also be involved [1]. Classical symptoms associated with endometriosis include infertility and pelvic pain, although unusual symptoms linked to atypical location of disease can also occur, including dyspareunia, urinary and gastrointestinal symptoms, what makes this diagnosis even more complicated [1,3,4].

Deep invasive endometriosis is defined when implants penetrate the peritoneal space more than 5 mm. When this happens the lesions may be situated in the Douglas pouch, vesicouterine pouch, vaginal fornix, uterosacral ligaments or any other area of the pelvis. This requires surgical treatment and often intraoperative findings of ureteral, rectal or other pelvic organs involvement makes surgery difficult and sometimes there is need for visceral resection in order to completely remove the endometriotic implants. Rectovaginal endometriosis can be easily seen at pelvic examination in the posterior vaginal fornix and felt al palpation like a fibrotic retraction and induration at this level. Other presentations of deep endometriosis can be nodularity of the uterosacral ligaments and broad ligaments [5]. Even if laparoscopy is the gold standard for diagnosing this condition, MRI is helpful.

The preoperative assessment, diagnosis and extension of deep infiltrating endometriosis is of high importance for planning the surgery. MRI has the advantage of identifying the lesions that are hidden by adhesions and evaluate the pelvis subperitoneal space for lesion extension with high accuracy [6].

In "Accuracy of magnetic resonance imaging for diagnosis and preoperative assessment of deeply infiltrating endometriosis", Luciana P Chamie., *et al.* compared the MRI images from 92 women with clinical suspicion of deep endometriosis with laparoscopy and pathology findings. They concluded that MRI has high accuracy in diagnosing deep infiltrating endometriosis in the retrocervical region, rectosigmoid, bladder, ureters and vagina [7].

Furthermore, Karen Kinkel., *et al*. showed in their study, "Magnetic resonance imaging characteristics of deep endometriosis" the importance of using a special protocol when performing pelvic MRI for this pathology (endo protocol). They demonstrated the need for rectal and vaginal distension with gel in order to increase the sensitivity in detecting endometriosis at this level [8].

There are in the literature a few cases documented of endometriosis in association with cervical cancer. There is no relation between the etiology of those two. It is of high importance of being aware by the possibility of association because this can influence staging and treatment of the cervical cancer.

The TNM classification for tumor and FIGO staging system for cervical cancer are detailed in the table below.

Further we will not be detailing the treatment by stage of cervical cancer because we think this is well known and can be easily found in clinical practice guidelines. The only thing we want to remember is that for stages until IIA the primary treatment should be surgery and starting from stage IIB the multimodal therapy should start with radiation therapy.

Thus the treatment of cervical cancer is highly dependent of its stage. For the correct staging the clinical examination plays an important role but not only. There are multiple studies which states that MRI has a 93% accuracy in the preoperative workup and differentiation of operable from advanced cervical cancer. The MRI's utility in planning an adequate therapy of cervical cancer and decision for preoperative radiation therapy appears to be optimal starting from FIGO stage IB1 [10].

TNM	FIGO	Surgical-Pathologic Findings
TX		Primary tumor cannot be assessed
T0		No evidence of primary tumor
Tis		Carcinoma in situ (preinvasive carcinoma)
T1	I	Cervical carcinoma confined to the cervix (disregard extension to the corpus)
T1a	IA	Invasive carcinoma diagnosed only by microscopy; stromal invasion with a maximum depth of 5.0 mm measured from the base of the epithelium and a horizontal spread of 7.0 mm or less; vascular space involvement, venous or lymphatic, does not affect classification
T1a1	IA1	Measured stromal invasion ≤ 3.0 mm in depth and ≤ 7.0 mm in horizontal spread
T1a2	IA2	Measured stromal invasion > 3.0 mm and ≤ 5.0 mm with a horizontal spread ≤ 7.0 mm
T1b	IB	Clinically visible lesion confined to the cervix or microscopic lesion greater than T1a/IA2
T1b1	IB1	Clinically visible lesion ≤ 4.0 cm in greatest dimension
T1b2	IB2	Clinically visible lesion > 4.0 cm in greatest dimension
T2	II	Cervical carcinoma invades beyond uterus but not to pelvic wall or to lower third of vagina
T2a	IIA	Tumor without parametrial invasion
T2a1	IIA1	Clinically visible lesion ≤ 4.0 cm in greatest dimension
T2a2	IIA2	Clinically visible lesion > 4.0 cm in greatest dimension
T2b	IIB	Tumor with parametrial invasion
T3	III	Tumor extends to pelvic wall and/or involves lower third of vagina and/or causes hydronephrosis or nonfunctional kidney
T3a	IIIA	Tumor involves lower third of vagina, no extension to pelvic wall
T3b	IIIB	Tumor extends to pelvic wall and/or causes hydronephrosis or nonfunctional kidney
T4	IV	Tumor invades mucosa of bladder or rectum and/or extends beyond true pelvis (bullous edema is not sufficient to classify a tumor as T4)
T4a	IVA	Tumor invades mucosa of bladder or rectum (bullous edema is not sufficient to classify a tumor as T4)
T4b	IVB	Tumor extends beyond true pelvis

Table 1

Therefore deep infiltrating endometriosis can be felt at palpation as induration of uterosacral ligaments or vaginal walls and also the same for advanced cervical carcinoma. The existence of unrecognized deep endometriosis in cervical cancer patients can be interpreted as a more advanced cancer stage than in reality [11].

Our patient had her MRI exam without endo protocol and we could not diagnose the deep infiltrating endometriosis before surgery. The MRI with i.v. contrast does not describe deep endometriosis lesions, in contrast with endo protocol.

Conclusion

When deep endometriosis and cervical cancer are associated, this raises the difficulty of the surgery and the risk of intraoperative and postoperative complication (rectal, bladder, ureters injury). Deep endometriosis can be mistaken with tumor extension. This can result in staging errors and a wrong therapeutic conduct. Thus in patients with history of endometriosis, clinical staging of cervical cancer may be inappropriate. MRI with endo protocol should be considered and perhaps intraoperative frozen sections to decide the extent of surgery.

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