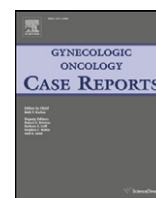


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Case Report

Isolated port-site metastasis after laparoscopic surgery for endometrial cancer:
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Background

Port-site metastases were described after laparoscopic surgery for non-gynecological and gynecological cancers. In one of the largest published series (Zivanovic et al., 2008) the incidence of port-site metastases was 1.18%, i.e. 20 cases after 1694 laparoscopic procedures performed, and the 95% of cases had simultaneous carcinomatosis or metastases to other sites at the time of port-site metastasis detection suggesting that the presence of port-site implantation is a surrogate for advanced disease.

During the last years there was a growing interest in port-site recurrence after laparoscopic treatment of gynecological cancers probably due to the increasing use of the laparoscopy in gynecologic oncology, specially for staging early stage endometrial cancers. At the moment, only three cases of isolated port-site metastasis after endometrial cancer have been reported in literature (Martínez et al., 2010).

Here we reported the fourth case of isolated port-site metastasis after laparoscopic stadiation for an early stage endometrial cancer.

Case

In April 2009, a 66 years-old normal-weight (body mass index 24.2 kg/m²) woman referring postmenopausal uterine bleeding underwent an office hysteroscopy with endometrial biopsy. Histology revealed a grade 2 endometrioid adenocarcinoma. After clinical and imaging evaluation showing a disease confined to uterus and

invading less than 50% of the myometrium, patient underwent a laparoscopic surgical staging consisting in total laparoscopic hysterectomy, bilateral salpingo-oophorectomy and pelvic lymphadenectomy.

Pneumoperitoneum was created using a Veress needle placed at supraumbilical level with a maximum intra-abdominal pressure of 12 mm Hg. Four laparoscopic ports were created: two 10 mm ports (one midline supraumbilical for the optical and one ancillary lateral left), and two ancillary 5 mm ports (one lateral right and one supra-pubic). Ancillary ports were used for peritoneal washing, coagulation of fallopian tubes, coagulation and cut of round ligaments, division of the broad ligament leafs, pelvic nodes dissection, coagulation and cut of infundibolo-pelvic ligaments. Nodes were removed through vaginal route using an endobag.

During coagulation of second (right) uterine pedicle, the uterus was perforated with the uterine manipulator. After promptly uterine suturing, the surgery was converted to laparoscopically-assisted vaginal hysterectomy. Thus, colpotomy, final ligation and section of uterine pedicles and of cardinal-uterosacral complex, extraction of uterus and adnexa, and vaginal cuff suture were performed vaginally. The ports were all closed with skin stitches, only for 10 mm ports the fascia was also sutured. Abdomen was deflated with trocars in place and a 5% polyvidone iodine was instilled before closing all ports.

The histologic examination confirmed a grade 2 endometrioid adenocarcinoma confined to uterus and showed an invasion of 70% of the myometrium, lymphovascular space involvement, nodes and peritoneal cytology were not involved. Final staging was FIGO stage IB.

In consideration of the presence of two adverse events, i.e. advanced age (>60 years) and lymphovascular space involvement, three cycles of external beam radiotherapy (EBR, total dose of 46 Gy; 2 Gy/day fractions for 5 days/week) and vaginal brachytherapy (VB, total dose of 22 Gy; 5.5 Gy; fractions twice weekly for two weeks) were administered. Specifically, the target volume of the EBR consisted of the pelvic region (from the proximal two-third of the vagina up to the promontory), whereas that of the VB was the entire vaginal wall (from the proximal vaginal cuff to within 1–2 cm of the urethral meatus) with a depth of 5 mm from the vaginal stump applicator surface.

Patient's follow-up was performed according to internal multidisciplinary guidelines.

On March 2011, the patient showed a symptomatic and palpable abdominal wall mass of about 2 cm diameters under the left port-site at the level of the left iliac fossa. Magnetic resonance imaging confirmed the presence of a parietal recurrence in the subcutaneous tissue without involvement of the underlying fascia and any other

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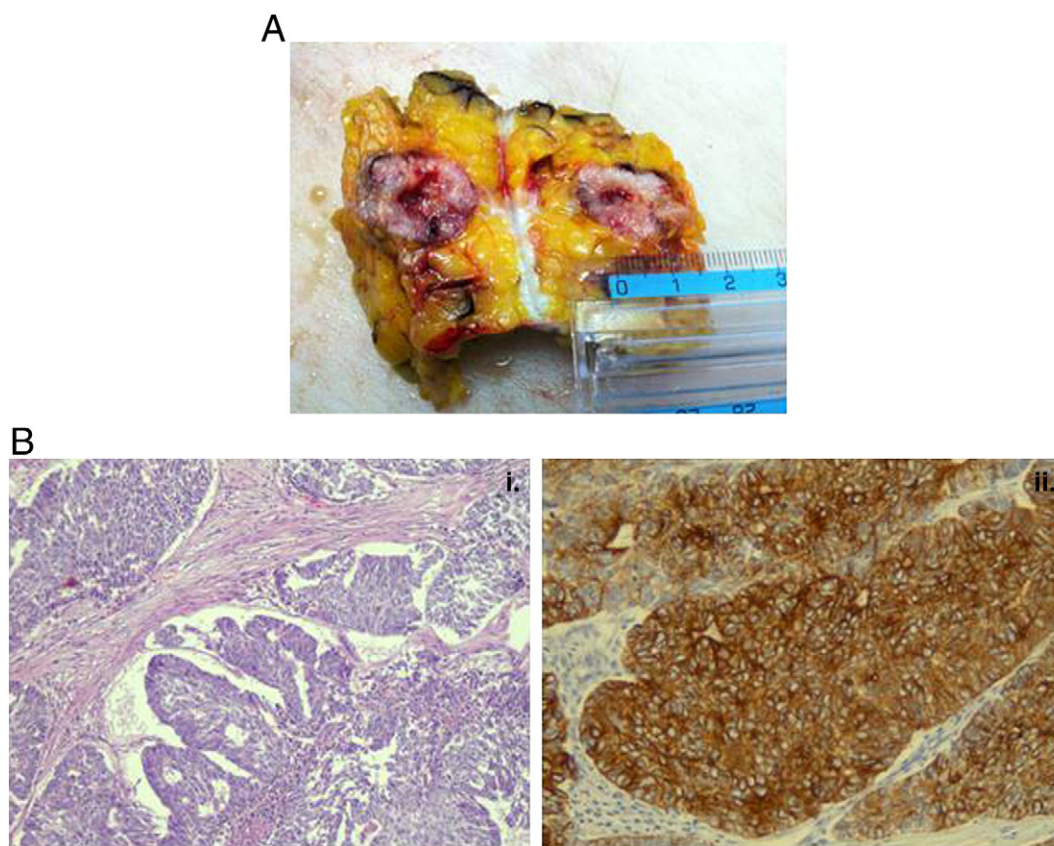


Fig. 1. A. Macroscopic appearance of the port-site metastasis. B. Histological view of the port-site metastasis. i. Hematoxylin and eosin stain (magnification: $\times 50$). ii. Cytokeratin 7 positive immunostaining (magnification: $\times 200$).

neoplastic localization, and a fluorodeoxyglucose positron emission tomography (FDG-PET) reported a localized FDG uptake.

Surgical excision of the lesion, including skin and subcutaneous tissue reaching the muscular fascia was performed. At the same time, the patient underwent a diagnostic laparoscopy. Pneumoperitoneum was again created using a Veress needle at supraumbilical level using a low intra-abdominal pressure (12 mm Hg) and 3 laparoscopic ports were created using the same accesses previously used (one 10 mm midline supraumbilical for the optical and two 5 mm ancillary, one lateral right and one suprapubic). During procedure, careful intra-abdominal inspection, peritoneal washing, wide left peritonectomy under the port site, and random biopsies were performed. No macroscopic evidence of tumor recurrence or ascites was detected.

Macroscopically removed mass measured $6 \times 4.5 \times 3.5$ cm and included a lardaceous nodule of 2.2 cm major axis (Fig. 1A). Pathologic examination revealed a metastasis of poorly differentiated adenocarcinoma with positive immunostaining for estrogens' receptors (Fig. 1Bi), cytokeratin 7 (Fig. 1Bii), and negative staining for cytokeratin 20 and vimentin, confirming the endometrial origin of tumor. Peritoneum, random biopsies and peritoneal washing were negative.

After surgery the patient was treated with tumor directed radiotherapy and chemotherapy (cysplatin/doxorubicin/paclitaxel) due to poor histologic differentiation of tumor. To date, the patient is alive and free of disease.

Discussion

We report a very rare case of isolated port-site metastasis after laparoscopic surgery for early stage endometrial cancer. The current was the first case of port-site metastasis after 451 consecutive patients

laparoscopically operated in our Institution for early stage endometrial cancer. The incidence of 0.2% was very low and in agreement with previous data (Zivanovic et al., 2008; Martínez et al., 2010).

The current case highlights, firstly, the unsolved mystery of the development of isolated metastasis even at port-site after uterine perforation, even if the trocar was left in place during abdomen deflation and instillation with polyvidone iodine solution before port closing (Ramirez et al., 2003), and, secondly, the need of more aggressive strategies, although of unproven efficacy, in case of potentially increased risk for port-site metastasis, as the inclusion of the laparoscopic ports in the radiotherapy fields that in our case were left out.

Conflict of interest statement

The authors declare that there are no conflicts of interest for this paper.

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