Borderline tumour arising in a transposed ovary in utero: a rare complication of the Estes operation

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Summary

Ovarian transposition into the uterine cavity to restore fertility, the so-called Estes operation, has rarely been performed worldwide. Malignant degeneration of such transposed ovaries has never been reported in the literature. We present a case of a borderline tumour arising in a transposed ovary after an Estes operation.

Key words: Estes operation; Borderline tumour; Transposed ovary.

Introduction

Borderline ovarian tumours comprise 10-15% of all ovarian malignant tumours. In contrast to ovarian carcinoma, borderline tumours occur more often in younger patients and carry a favourable prognosis [1]. Surgical treatment of borderline tumours may be either radical or conservative depending on the wish of the patient to preserve her fertility.

In the pre-IVF era patients with severely damaged or resected fallopian tubes were deemed childless. In an attempt to restore fertility, several centres have performed the Estes operation in such patients [2]. During this procedure one ovary is transposed into the uterine cavity through an incision in the uterine horn. In the literature, there are no reports of malignancy arising in such transposed ovaries. We report a case in which a borderline ovarian tumour occurred after an Estes operation.

Case Report

A 69-year-old postmenopausal woman was referred to our clinic because of vaginal bleeding. Her medical history revealed a unilateral salpingectomy in 1966 because of an ectopic pregnancy. In 1967 the remaining fallopian tube was partially resected because of a second ectopic pregnancy. In 1968 a salpingoneostomy was performed but without success. In 1970 an Estes procedure was performed in Italy. The procedure included fixation of the uterus to the sacral bone, removal of one ovary and transposition of the other ovary into the uterine cavity through a cornual incision. Unfortunately, no pregnancy occurred.

Initial work-up of the bleeding included pelvic ultrasound that showed an endometrial thickness of 10 mm and a predominantly solid tumour measuring 6.6 cm that was connected to the uterus. Cervical cytology revealed no abnormalities. The serum CA125 was 27.9 U/ml and the serum CEA 3.7 mg/l. An attempt to perform an endometrial biopsy failed because the cervix was obstructed. A tumour in the transposed ovary was suspected and therefore an exploratory laparotomy was performed. After opening the abdomen, a normal size uterus was seen and a tumour apparently arising from the transposed ovary was growing into the uterine wall. Total hysterectomy and unilateral salpingo-oophorectomy was performed. Frozen section analysis of the uterus showed no signs of endometrial pathology. In the transposed ovary however, a borderline mucinous cystadenoma was found. Therefore, a staging procedure was performed. Final histopathology revealed a borderline mucinous cystadenoma of the ovary (Figure 1). All the other tissues that were removed (uterus, omentum, peritoneal biopsies, peritoneal cytology, pelvic nodes) were free from tumour so the case was staged as FIGO IA. The postoperative course was uneventful. Currently, the patient is alive and well three years postoperatively with no signs of recurrent disease.

Discussion

The Estes procedure was first performed by Estes in 1904 [3]. The original method consisted of bilateral salpingectomy, unilateral oophorectomy and transposition of the remaining ovary that was still attached to the

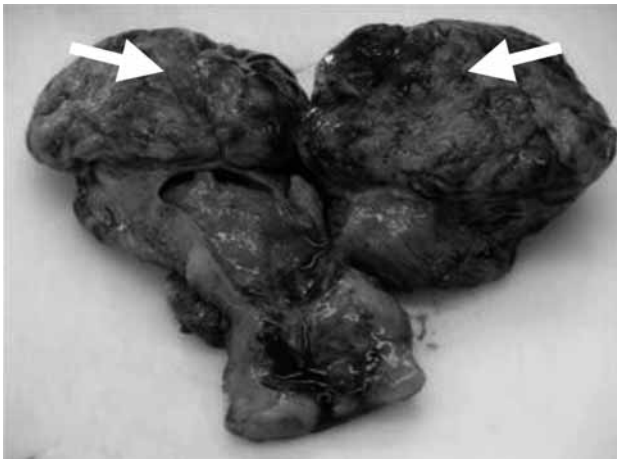

Figure 1. — Macroscopic sagittal view of the uterus showing the tumour arising in a transposed ovary (white arrows indicate the borderline tumour).

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infundibulopelvic ligament into the uterine cavity through an incision in the uterine horn [2]. The indication for the procedure was infertility due to severe fallopian tube damage or resection. Later, a modification was proposed by Tuffier by making a larger area of ovarian surface protruding into the uterus [3]. Estes reported 27 patients who underwent the procedure and four of them achieved a pregnancy (15%) [4].

In the literature, only a few case histories mention late complications which include the formation of benign cysts and the formation of considerable adhesions [5]. No case of ovarian malignancy has been reported. This is the first case report of a borderline tumour arising in a transposed ovary after an Estes operation. Transposition of ovaries is sometimes performed in young patients who are surgically treated for early cervical carcinoma and who have a reasonable chance on postoperative pelvic radiotherapy. Although malignancies have been reported in such transposed ovaries they were usually metastatic tumours [6].

Because of the great anatomic distortion which can occur after the Estes operation, a tumour arising in a transposed ovary may be difficult to diagnose. The symptoms may be misleading and the clinical and ultrasound examination may be difficult to interpret. In such cases an exploratory laparotomy is advised with the possibility to perform frozen-section analysis to determine the type and extent of the surgical procedure.

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