

Pregnancy following treated malignant struma ovarii

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Introduction

Struma ovarii [SO] is a rare, highly specialised form of mature ovarian teratoma, consisting predominantly of thyroid tissue. Malignant transformation occurs in about 5% of SO [1]. Diagnosis of malignant SO is usually made histologically. The majority of malignant SO show a follicular or papillary pattern of thyroid carcinoma. Conservative ovarian surgery is preferred when there is a concern about fertility [2–4].

About 24 cases of malignant SO have been reported until 2003 [5]. Of these only a small number were associated with pregnancy [6–8], in whom diagnosis of malignant SO was made during the pregnancy. Though pregnancy is possible after treatment of malignant SO, no reports are available. We document a rare case of a woman who had two successful pregnancies after treatment of a malignant SO.

Case report

A 27-year old nulliparous woman was admitted to the gynaecology casualty ward with non-specific lower abdominal pain. Her urinary and bowel habits were normal. There was no change in her body weight or appetite. She had normal menstrual cycles.

On vaginal examination a right adnexal mass of about 10 cm diameter was detected. It was non-tender and freely mobile. The uterus and the left adnexae were normal. These clinical findings were confirmed by the ultrasound scanning. The right adnexal mass was noted to be an ovarian tumour with solid and cystic areas. The left ovary and the rest of the pelvic cavity were normal. There was no evidence of ascites or hydrothorax. Tumour marker CA 125 was within the normal range.

During laparotomy a right ovarian tumour was identified with evidence of capsular involvement. The left ovary appeared normal. There were no macroscopic deposits in the uterus, tubes, bowels, omentum, liver or undersurface of the diaphragm. As there was evidence of capsular involvement, right salpingo-oophorectomy was performed with a biopsy of the left ovary. Conservative surgery was performed as she wished to preserve her fertility. Histology revealed that the right ovarian tumour was a malignant SO of follicular pattern with foci of

vascular invasion. Peritoneal washing was positive for malignant cells. Left ovarian biopsy was normal.

After an uncomplicated immediate post-operative period she was treated with total thyroidectomy and radioactive iodine, followed by daily thyroxine therapy. Within a few months she had a spontaneous conception. After an uncomplicated antenatal period she had a normal delivery. Her thyroid function tests and ultrasound scans of the abdomen were normal. She was pregnant for a second time within 6 months of the first delivery. She had a successful second delivery following an uncomplicated antenatal period.

Discussion

Struma ovarii is a highly specialised form of mono-dermal teratoma composed primarily of thyroid tissue [2, 4]. Benign and malignant SO occur within teratomas at the rate of 2% and 0.3% respectively [2,4]. Strumal tissue is found contiguous or admixed with carcinoid tumour in strumal carcinoid.

It usually presents with a palpable abdominal mass, occurs more commonly in the left ovary and is sometimes associated with ascites or hydrothorax [2,3,7]. About 10–15% of patients with SO also have an enlarged thyroid gland [3]. As hyperthyroidism occurs in 8% of SO, radioiodine imaging of the pelvis should be considered in female hyperthyroid patients [2].

Circulating thyroglobulin receptor antibodies are able to stimulate the ectopic as well as the normal thyroid tissue [3]. Thyroid crisis also may occur rarely after removal of an SO [3].

The histological criteria for the diagnosis of malignancy in a SO are similar to those of thyroid carcinoma [2,4]. However, such an appearance may be mimicked by degenerative changes in either an adenocarcinoma or cystadenocarcinoma [3].

Prognostic indicators for malignant SO include, a diameter greater than 16 cm, ascites and adhesion to neighbouring pelvic structures [2]. Hypercellularity, mitoses, and vascular and capsular invasion are of little prognostic significance in malignant SO [3].

Metastases can be shown in 5–6% of patients with malignant SO [2]. The mode of spread follows that of an

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ovarian carcinoma. Peritoneal dissemination can simulate benign strumosis, a peritoneal seeding of benign SO, and is composed of mature thyroid tissue [2].

Because of the rarity of malignant SO, the optimal surgical and post-operative management has not been defined [1, 2]. Therapy has ranged from radical surgery and chemotherapy, with or without thyroidectomy, to unilateral oophorectomy and preservation of reproductive functions [2]. In patients with residual abdominal disease or with distant metastases, total thyroidectomy followed by the administration of radioactive iodine should be offered [1, 2]. Prognosis as well as survival improves with the administration of radioactive iodine [1, 2]. In one study, no deaths were reported in eight patients who received radioactive iodine for malignant SO with adequate follow up of 7.3 years [2]. Our patient had a good prognosis in spite of having peritoneal metastases. This suggests that the peritoneal metastases would have been effectively treated by radioactive iodine. Prognosis can be monitored using thyroglobulin levels and radioactive scintigraphy [1,4].

Pregnancy is possible after conservative surgery for malignant SO. A few case reports have been published on malignant SO found during pregnancy [6–8]. None of them, however, described successful pregnancy after treatment of malignant SO.

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