

The role of ovarian transposition in patients with early stage cervical cancer - two case reports

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Summary

The aim of the study is to present two cases of premenopausal women with early stage cervical carcinoma who underwent ovarian transposition. The role and the advantages of this technique are discussed.

Key words: Early stage cervical carcinoma; Ovarian transposition; Preservation; Menopause; Fertility.

Introduction

Early cervical carcinoma (Stage IA2 to IIA) can be cured in 95% of patients [1]. Although, the average age at diagnosis is 51 years [1], the disease may also occur in younger non-gravid women in the second decade of their life (10-15%) [2]. Patients with early-stage disease can be treated with either radical hysterectomy and pelvic lymphadenectomy or with primary radiation with concomitant chemotherapy with approximately equal 5-year survival [1]. The major advantage of surgical treatment is the fact that the ovaries might be transposed out of the radiation field in case of postoperative irradiation. The most common locations for ovarian transposition are laterally within the pelvis, in the lower paracolic gutters, anterior to the psoas muscles and more usually in the paracolic gutters [3].

Case 1

A 22-year-old nulliparous woman with Stage IB2 cervical carcinoma underwent radical hysterectomy with preservation of the right ovary plus pelvic lymphadenectomy. The remaining ovary was transposed in the right paracolic fossa outside the pelvis. Histological examination revealed a moderately differentiated squamous cell carcinoma. The patient received adjuvant radiotherapy, and two years after the operation is free of disease with excellent ovarian function.

Case 2

A 27-year-old nulliparous woman with Stage IB1 cervical cancer underwent radical hysterectomy without salpingo-oophorectomy plus pelvic lymphadenectomy with transposition of the right ovary in the right paracolic gutter out of the pelvis. The left ovary was left in situ in the pelvis. Histological examination revealed a moderately differentiated squamous cell carcinoma. The patient also received adjuvant radiotherapy and two and a half years after the operation she is free of disease with excellent ovarian function.

Discussion

The major advantage of ovarian translocation in patients with early cervical cancer is the prophylaxis of premenopausal women from menopausal symptoms such as vaginal atrophy, hot flushes and osteoporosis. In a prospective study, it has been shown that preservation of ovarian function in patients with cervical carcinoma is effective in 100%, 90% and 60% of those treated exclusively by surgery, vaginal brachytherapy or external radiation, respectively [4].

According to Ishii *et al.* ovarian preservation is safe in patients under 40 years old who could preserve ovarian function for one up to nine years [5]. For the best follow-up of ovarian function, Olejek *et al.* suggested that patients' hormone levels and bone density should be closely monitored [6]. The ovarian function of our patients was investigated by measurements of FSH, LH and estradiol levels in combination with bone mineral density measurements. The levels of FSH, LH and estradiol were within normal ranges in both our patients and moreover no menopausal symptoms were mentioned in the follow-up period (2 and 2.5 years, respectively). The bone mineral density was stable in both our patients.

However, Wu *et al.* reported that ovarian failure occurred in 35% of women after 12 months of such a preservative operation [7]. Buekers *et al.* showed that 41% of their patients retained ovarian function for a mean of 43 months and a mean age of menopause of 36.6 years [8], whereas ovarian function was preserved in 50% of patients in a retrospective study of Feeney *et al.* [9].

Bidzinski *et al.* showed that ovarian function even after transposition could be better preserved when (in case of external irradiation) the distance of the upper margin of the field and the ovary was more than 3 cm [10], whereas van Eikeren *et al.* proposed that the limit to preserve ovarian function is 300 cGy [11].

It is known that ovarian hormonal production or stimulation does not adversely affect the course of the disease [11]. In non-gravid women when preservation of fertility is desired, ovarian translocation could offer the option of fertility with a donor uterus. Duska *et al.* reported two

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cases of young nulliparous women with Stage IA2 cervical cancer who underwent ovarian stimulation and oocyte retrieval followed by radical hysterectomy. Of course even these authors suggest that there are many ethical and practical aspects that should be resolved regarding embryo freezing and gestational surrogacy [2]. It should be mentioned that till now our patients did not express the desire to undergo an IVF process with a surrogate mother, although their quality of life is excellent.

According to Olejek *et al.* the risk of complications such as frequency of relaparotomy, deep vein thrombosis, urological complications and blood transfusion is similar in patients with or without transposition of ovaries [12].

Owens *et al.* suggested that normal ovaries could be preserved in young women regardless of the histologic type [13]. However, Nguyen *et al.* reported a case of metastasis of Stage IB1 squamous cell cervical carcinoma in a transposed ovary eight years after radical surgery [14]. Although metastasis in squamous cell carcinoma is quite rare, there is a question which arises regarding the role of such an operation in patients with adenosquamous cervical carcinoma and the possible elevated risk of ovarian metastasis. Van Eikeren *et al.* reported that there was a risk (5.5%) of developing symptomatic ovarian cysts in patients who underwent Wertheim-Meigs operation with ovarian transposition [11]. In a recent multicenter retrospective study, it was shown that ovarian transposition could be safely performed in young patients with early stage squamous cell carcinoma, with macroscopically normal ovaries and with preserved peripheral unaffected cervical stroma [15].

Conclusion

Over half of the women with cervical cancer are premenopausal. Among them there are very young nullipara patients such as the two reported cases. Translocation of the ovaries is a procedure which offers protection for early menopausal symptoms and may offer hope to women who desire to keep their own fertility. The preservation of ovarian function if possible is crucial to improve the quality of life. However, close follow-up is essential.

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