



## **Fertility Preservation in Patients With Cervical Cancer**

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### **Key Points of Fertility Preservation in Patients With Cervical Cancer**

- *Fertility preservation for patients with early-stage cervical cancer is possible with radical trachelectomy (vaginal or abdominal).*
- *As more data are accumulated, less-radical surgery with cone biopsy may have an expanded role in patients seeking fertility preservation.*
- *The use of neoadjuvant chemotherapy seems promising but needs further investigation.*
- *Counseling and decision-making should encompass the issues of quality of life post-treatment, risk of recurrence, and pregnancy outcome following fertility preservation.*

### **Introduction**

Majority of cervical cancer cases are diagnosed in underdeveloped countries, where adequate screening is lacking and at an advanced stage, when disease is not amenable to surgical management. However, in countries with established screening programs, cervical cancer often presents in younger women and is diagnosed at an earlier stage. This naturally coincides with the desire of a great number of these women to preserve their reproductive function, posing distinct disease-management challenges in this population. In such patients, fertility preservation and quality of life are critical areas of concern. Nearly half of women under 40 years of age undergoing radical hysterectomy for stage I cervical cancer may be eligible for fertility preservation. Fertility-preserving procedures generally can be offered to patients with localized disease, and this approach is reflected in the National Comprehensive Cancer Network guidelines for the management of cervical cancer (<http://www.nccn.org/>).

### **Management Approaches**

Stage and pathologic type of disease dictate the management approach and feasibility of fertility preservation in an individual patient. Patients diagnosed with cervical cancer of small-cell neuroendocrine histology or adenoma malignum are not considered suitable candidates for fertility preservation, due to the aggressive nature of these cancers. Preoperative MRI can be helpful in patient assessment when considering fertility preservation.

For microinvasive cancers, the stage will usually be determined by cone biopsy or a loop electrosurgical excision procedure (LEEP). Since the risk of lymph node spread remains quite minimal for patients with a stage IA-1 cancer in the absence of lymphovascular space invasion (LVSI), conization of the cervix is a reasonable option for fertility-sparing treatment. A 3-mm negative margin is considered adequate. Such patients have a < 1% risk of pelvic node metastasis. Conization alone has also been proposed for patients with early-stage adenocarcinoma who want to preserve their fertility.

For patients with a stage IA-1 lesion and LVSI, a larger microscopic lesion (stage IA-2), or a smaller visible lesion (stage IB-1), radical trachelectomy with pelvic node dissection is the preferred method of fertility preservation. This involves removal of the cervix and surrounding tissue while maintaining the uterine fundus. Vaginal radical trachelectomy was first performed by Professor Daniel Dargent in 1987. When combining some of the larger case series of radical vaginal trachelectomy, the recurrence rate is less than 5%.

Strict eligibility criteria have been proposed for patient selection. Typically, patients must be of reproductive age and have lesions < 2 cm, with limited endocervical extension and no evidence of extracervical spread. The 2-cm cutoff is recommended as the upper limit for cervical lesions treated by radical vaginal trachelectomy, based on the high recurrence rate of these lesions. Larger lesions may be better addressed with a more radical resection via an abdominal approach.

In 1997, Smith et al described the modern-day approach of abdominal radical trachelectomy. Some surgeons favor this method because it does not require the surgeon to be familiar with vaginal or laparoscopic surgery, and it allows for a wider resection margin compared to radical vaginal trachelectomy. Although blood flow to the fundus is maintained by the gonadal vessels, some have advocated a uterine-sparing approach towards abdominal trachelectomy. Reports of radical abdominal trachelectomy have demonstrated a 4% recurrence rate, and 74% of patients who attempted pregnancy being successful.

### **Preoperative Counseling and Survivorship Support**

Patients who choose to undergo fertility-preserving surgery, particularly radical trachelectomy, require extensive preoperative counseling. They should be informed of other available fertility options, including ovarian-tissue harvesting, embryo and oocyte freezing, and gestational surrogacy. Referral to an infertility specialist is strongly encouraged, since fertility assistance may be needed despite procedures that maintain the uterine fundus.

Many patients of reproductive age undergoing radical vaginal trachelectomy will be cured after this procedure; therefore, quality-of-life concerns will need to be addressed. Majority of the women who wish to conceive succeed. However, the risk of mid-trimester loss and preterm deliveries is higher in this subgroup than in the general population. Also, cervical stenosis may lead to menstrual disorders or fertility problems necessitating repeated surgical dilatation.

### **The Evolving Approach to Fertility-Preservation Surgery in Cervical Cancer**

Multiple reports have illustrated that patients with tumors smaller than 2 cm in size without deep stromal invasion are at minimal risk for parametrial spread. The concept of less-radical surgery for these patients is an area that is gaining credibility. Fertility-preserving surgery with laparoscopic lymphadenectomy using a sentinel lymph node procedure followed by either large-cone or simple trachelectomy is increasingly offered to suitable young women, with 1% reported risk of recurrence,

For patients with tumors > 2 cm, the success rate of fertility-preserving surgery has been reported to be as low as 31%. To improve on this outcome, some have utilized neoadjuvant chemotherapy, with promising results, but warrants further investigation.

### **Reference:**

Sonoda Y. Fertility Preservation in Patients With Cervical Cancer. *Oncology*. 2015 Jul;29(7):525-6

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