CERVICAL SURGERY

A surgery performed on woman’s cervix.

⚠️ Risk factor  ♂ Female

About Cervical surgery

Cervical surgery is the treatment option for several conditions of female cervix. Cervical cancer is the most common reason, why women need to undergo a surgery. Another causes are cervical stenosis and cervical insufficiency during pregnancy.

Cervical cancer

Gynecological malignancies often affect women in reproductive age and about 28% of all cervical cancers is diagnosed prior to 40 years of age.

Where a screening program is present, the disease is often diagnosed in early stages with high survival rates. The golden standard treatment of early stage disease ranges from simple hysterectomy to a radical hysterectomy and pelvic lymphadenectomy.

The high survival rates and the delayed childbearing in society result in more cervical cancer patients who desire preserving their fertility. Luckily, fertility sparing treatment approaches are available for a large part of cases.

Conization has been suggested as a conservative surgical alternative and fertility sparing approach. Candidates for conization are patients with cervical cancer without lymphovascular space involvement at the pathological examination, negative margins, and normal endocervical curettage (a procedure in which the mucous membrane of the cervical canal is scraped using a spoon-shaped instrument called a curette).

Radical trachelectomy (RT; Pic. 1) with pelvic lymph node dissection is another option. In gynecologic oncology, trachelectomy, also cervicectomy, is a surgical removal of the uterine cervix. As the uterine body is preserved, this type of surgery is a fertility preserving.

Trachelectomies, broadly, can be divided into the simple and radical variants.

- **Radical**
  The formal name of this operation is radical vaginal trachelectomy (RVT) and also known as the Dargent operation and radical trachelectomy.

  The word radical is used as, in addition to the cervix (like in radical hysterectomies), the parametria (tissue adjacent to the cervix) and vaginal cuff (the end of the vagina close to the cervix) are also excised as a part of the operation. It is usually done with a lymphadenectomy (the removal of lymph nodes), to assess for tumour spread to the lymph nodes.

- **Simple**
  A simple trachelectomy refers to the removal of the cervix; this can be considered to be a very large conization procedure.

Cervical stenosis

Cervical stenosis means that the opening in the cervix (the endocervical canal) is more narrow than is typical. In some cases, the endocervical canal may be completely closed.
Symptoms depend on whether the cervical canal is partially or completely obstructed and on the patient’s menopausal status. Pre-menopausal patients may have a build up of blood inside the uterus which may cause infection, sporadic bleeding, or pelvic pain.

Treatment of cervical stenosis involves opening or widening the cervical canal. Cervical canal widening can be temporarily achieved by the insertion of dilators into the cervix. If the stenosis is caused by scar tissue, a laser treatment can be used to vaporize the scarring. Finally, the surgical enlargement of the cervical canal can be performed by hysteroscopic shaving of the cervical tissue.

The condition may improve on its own following the vaginal delivery of a baby.

**Cervical insufficiency**

Cervical cerclage (Pic. 2) is a treatment for cervical incompetence or insufficiency, when the cervix starts to shorten and open too early during a pregnancy causing either a late miscarriage or preterm birth.

The treatment consists of a strong suture being inserted into and around the cervix early in the pregnancy, usually between weeks 12 to 14, and then removed towards the end of the pregnancy when the greatest risk of miscarriage has passed.

**Associated diseases**

- cervical cancer
- cervical stenosis

**Complications**

Risk of second trimester loss and preterm delivery is one of the major drawbacks in women who became pregnant after an radical vaginal trachelectomy. The second important complications are the cervical stenosis and related complications.

The radical trachelectomy present a risk for intraoperative complications to ureter, bladder, and rectum. However the intraoperative complications are rare.

Specific problems are associated with radical trachelectomy as dysmenorrhea, dysplastic smears, irregular bleeding, excessive vaginal discharge, problem with cerclage suture, amenorrhea (absence of menstrual period), and sexual inactivity.

Another complications comprise infections, sporadic bleeding, pelvic pain and infertility.

**Risk factors**

- cervical cancer, or history of cervical cancer in family
- infections
- radiation
- trauma
- surgical procedures on cervix

**Prevention**

The best prevention of cervical surgery is to avoid the risk factors, which can lead to cervical cancer and surgical solution.

Invasive cervical cancer still represents one of the major issues of preventive oncology either in developed countries or in developing countries, accounting for the fourth leading cause of cancer related deaths in women worldwide and the second leading cause of deaths in women in developing countries. Since the introduction of population-based organized cytological screening programs, a dramatic decrease of incidence of cervical cancer has been obtained in many western countries. The overall performance of cervical cytological screening, the Pap test, is still far from being optimal.

Because Human Papillomavirus (HPV) is the recognized necessary cause for the development of cervical cancer, the present research is aimed at the investigation of new approaches towards its prevention and is particularly focused upon several biomolecular patterns and detection tools of the virological contamination of the lower female genital tract. The identification of high-risk viral strains DNA (HPV 16 and 18) is now worldwide recognized as more effective than cervical cytology in several settings: primary screening, triage of atypical cytology, and follow-up after
How it can affect fertility

With the earlier detection of invasive cervical cancer, fertility preservation is increasingly needed. At present, since childbearing is postponed, it is more common to detect cervical cancer in women who have not already been pregnant or desire a future pregnancy. The main goal is to maintain reproductive ability without decreasing overall and recurrence-free survival.

Preservation of uterus in women who does not plan pregnancy is controversial as it is in women with previously impaired fertility. Assisted reproduction techniques are widely used and many women did not even tried to conceive before the diagnosis of cervical cancer. Hence, it is not possible to estimate reproductive potential before surgery accurately.

Fertility preservation with conservation of the uterus after an radical trachelectomy seems to be a safe and realistic option for well-motivated women that wish to maintain their fertility, since recurrence rates are acceptably low, but higher than traditional radical hysterectomy.

The review of the literature indicates that pregnancies are clearly possible after an RT for early-stage cervical cancer, and the majority of women will conceive spontaneously. However there is a higher incidence of preterm deliveries, miscarriages, choioamnionitis (an inflammation of the fetal membranes due to a bacterial infection) and pPROM (preterm premature rupture of membranes).

However, radical surgery and radiotherapy often do not spare fertility and both methods can lead to psychosexual dysfunction and decreased quality of life. Furthermore, infertility increases the frequency of depression, stress and sexual dysfunction. Most centres do not also specify an upper age limit for fertility-sparing surgery. Regarding their inherent risk of infertility based on age alone, some centres exclude patients from 40 or 45 years.

Cervical stenosis may impact natural fertility by impeding the passage of semen into the uterus. In the context of infertility treatments, cervical stenosis may complicate or prevent the use of intrauterine insemination (IUI) or in vitro fertilization (IVF) procedures.

Prognosis

Data on long-term outcomes is limited. However, it appears that cancer recurrence and death are similar when compared to standard treatments (radical hysterectomy and radiation). Death and cancer recurrence rates (associated with the procedure) are approximately 3% and 5% respectively.

In patients with stage IA1 cervical cancer, conization is a valid alternative. Patients with stage IA2-IB1 disease can be conservatively treated by radical trachelectomy. This is as well-established conservative approach and appears to be safe and effective in allowing a high chance of conception.

Following radical vaginal trachelectomy, approximately 70% of patients that want to have children are able to conceive. However, because of the loss of the cervix risk of pregnancy loss and preterm delivery is significantly higher, when compared to healthy women. Delivery is by caesarean section.

It is estimated that even with a careful patient selection for fertility-sparing surgery, 12–17% of the patients will have the procedure aborted due to nodal metastasis or positive endocervical margins.
Sources

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