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Cervical dysplasia

The purpose of this leaflet is to provide the patient with information about the causes, diagnosis, treatment and prevention of cervical dysplasia.

In Estonian, the term ‘cervical intraepithelial neoplasia’ (CIN for short) is also used to describe cervical dysplasia.

Cervix

The cervix has two types of mucosal epithelium. The cervical canal has a single-layered columnar epithelium; the vaginal portion has a 5-layered squamous epithelium. Cervical dysplasia primarily develops in the squamous epithelium.

The unique feature of the squamous epithelium of the cervix is that cells grow from the lower layers towards the surface. The cells constantly regenerate. In the transition zone where columnar and squamous epithelium meet, cells grow and regenerate faster than in other parts of the cervix. This transitional cover is where the human papillomavirus can rapidly and easily replicate its viral particles.

Papillomavirus

In over 90% of cases, dysplasia is caused by the human papillomavirus (HPV), which is sexually transmitted.

The presence of the papillomavirus is common among:

- young people;
- sexually active people;
- people with multiple sexual partners.

The papillomavirus reproduces in the lower layers of the squamous epithelium of the cervix. If the immune system fails to eliminate the virus and if the virus persists for a prolonged period of time, the virus invades the nuclei of the cervical cells, causing structural and functional changes in the cells that may lead to the development of cancer cells.

Papillomavirus infection usually does not cause any complaints or symptoms. In most cases, the papillomavirus will regress and the associated dysplasia will also heal within 2 years of infection. Long-term (over 2 years) carriage of the papillomavirus and a weakened immune system increase the risk of developing cervical cancer. Stress, smoking, concurrent sexually transmitted diseases and genital inflammations are also risk factors for the persistence of the papillomavirus and the development of cervical cancer.

Preventing papillomavirus

The papillomavirus can be prevented by vaccinating against high-risk strains with the HPV vaccine and consistently using condoms.

Cervical dysplasia

Cervical dysplasia is a precancerous change that needs to be monitored by a doctor and treated if necessary.

Dysplasia appears on the cervix as lesions or spots, the extent and location of which can be determined using a colposcope (a specialised microscope for cervical observation). The severity of dysplasia is determined by staining the cervix, which reveals specific signs; if necessary, a confirmatory tissue sample (biopsy) may be taken during the examination.

The severity of cervical damage is assessed based on the involvement of the 5-layered squamous epithelium. If one-third of the lower part of the cervical epithelium is affected, it is considered a mild change (CIN 1). For moderate dysplasia (CIN 2), half to two-thirds of the thickness of the squamous epithelium is affected. For severe dysplasia (CIN 3), all layers of the squamous epithelium in the examined tissue sample are affected. Analysing the biopsy of a patient with severe dysplasia may sometimes reveal signs indicating the onset of cervical cancer, known as *carcinoma in situ* or CIS.

If the severely damaged cells from the cervical epithelium cross the basement membrane, this is considered cervical cancer.

Cervical cancer occurs most frequently between the ages of 45 and 55, but it can also occur in women under 30.

Treatment and further monitoring

Mild cervical changes usually do not require treatment; a check-up once a year with your gynaecologist is enough. If the risk of disease progression is low, moderate cervical dysplasia may be monitored, but the decision to treat or monitor is made on an individual basis. Most cases of moderate and severe cervical dysplasia require surgical treatment to prevent disease progression.

Patients who have previously been monitored or treated for cervical dysplasia should continue to have regular check-ups with their gynaecologist for years to come, as the risk of disease recurrence or the development of other HPV-related tumours (vaginal, vulvar cancer) is 2-6 times higher compared to women who have not had this disease.

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