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Colposcopy and cervical treatments

What is a colposcopy?

Colposcopy is the magnified direct inspection of the surface of a woman's genital area, including the cervix, vagina and vulva (when it may be referred to as vulvoscopy), using a light source and a binocular microscope - a colposcope. It is used to evaluate potentially cancerous areas, typically after an abnormal cervical screening test. A biopsy of an abnormal area may be taken during the procedure. Colposcopy can also be used to detect inflammatory or infectious changes and harmless growths and also to assess traumatic injuries or gather evidence in cases of sexual assault.

Worldwide, cervical cancer is the second most common female malignancy. The national cervical screening programmes in the UK have reduced both incidence of and deaths from the disease. Colposcopy is used within this programme as a secondary tool. Human papillomavirus (HPV) is the main cause of cervical cancer. HPV vaccination against high-risk oncotypes of HPV is expected to reduce the incidence and deaths from cervical cancer still further.

Cervical screening[1]

Cervical screening looks for the human papillomavirus (HPV) which can cause abnormal cells on the cervix. Testing for HPV first, rather than looking at the cells down a microscope (cytology), is proven to be a more sensitive test. It will help to find more women with cervical cell abnormalities that may need treatment.

If HPV is found, a cytology test is used as a triage, to check for any abnormal cells. If abnormal cells are found, then the woman should be referred to colposcopy.

If no abnormal cells are found, a follow-up screen is arranged for 12 months' time. This will check to see if the immune system has cleared the virus.

Most HPV infections are transient, and slightly abnormal cells often go away on their own when the virus clears. If HPV persists, abnormal cells can, if left untreated, turn into cancer over time.

Colposcopy preparation

- Many women become very anxious when they are called to attend for colposcopy. Accurate and clear information is important to allay anxiety.
- Simple analgesia one hour before the procedure is sometimes recommended. Paracetamol or non-steroidal anti-inflammatory drugs (NSAIDs) may be used but NSAIDs may increase bleeding from any procedure, due to the antiplatelet effect of these drugs.
- Sometimes sedation or (rarely) general anaesthetic (most often due to patient choice) is required.
- Consider that any woman who appears unusually anxious or upset may be a survivor of childhood or adult sexual assault. [2]
- Some colposcopists prefer not to colposcope a woman who is menstruating but this isn't a contra-indication to the procedure.

Procedure

- The patient sits in a reclining chair in lithotomy position. A speculum is inserted to visualise the cervix.
- The cervix is stained with **acetic acid** in the area of the transformation zone (TZ) to identify the site, grade and shape of any abnormal area of cells. The solution is applied using a long-handled cotton bud. Abnormal dyskaryotic/dysplastic cells will stain white, referred to as 'aceto-white'; generally, the more dense the white area becomes, the higher the grade of abnormality.
- A water-based solution of **iodine** is then gently applied to the rest of the cervix to identify the complete area of abnormality. With iodine, the normal cells stain jet black and the abnormal cells stain yellow.

- There is usually good correlation between the abnormality suggested by the cervical screening test and the appearances seen through the colposcope.
- A small biopsy can be taken for analysis from the worst-looking area, having first applied local anaesthetic. Special biopsy forceps remove a small fragment of tissue with minimal discomfort.
- A punch biopsy has been shown to have a high sensitivity (81%) although it is not clear whether this may be due to confirmation bias. [3]

Colposcopy treatments

Women who have an obvious abnormality at colposcopy, or who have a positive biopsy result, will proceed to treatment. Women at a 'see and treat' clinic are more likely to be anxious unless it has previously been explained to them that they may be treated at their first visit.

- Large loop excision of the transformation zone (LLETZ) is the most common form of treatment in the UK:
    - LLETZ can take place at the end of the colposcopy examination during the same clinic visit, referred to as 'see and treat', or treatment may be carried out at a later visit.
- Cryotherapy: freezing the affected area of the cervix, which destroys the abnormal cells.
- Laser treatment: destroying or excising the abnormal area.
- Cold coagulation: a heat source is used to destroy and remove the abnormal cells.

Intracervical injection of local anaesthetic with a vasoconstrictor appears to be the most effective from of pain relief for colposcopy treatments.[4]

When an area of abnormality extends into the cervical canal beyond the area that can be seen with the colposcope, a cone biopsy is indicated. This is usually undertaken under general anaesthetic.

- A cone biopsy does not reduce subsequent fertility. A meta-analysis and systematic review in 2014 demonstrated no difference in fertility outcomes for women following treatments for cervical pre-cancer, including following cone biopsy. It did, however, suggest a significant increase in the rate of mid-trimester miscarriages, although they are still rare.[5]
- A cone biopsy increases the risk of perinatal mortality, severe preterm delivery and low birth weight in subsequent pregnancy.[6]
- Cervical stenosis is a rare side-effect, leading to haematocolpos and possible reduced fertility.

Risks

- Cervical treatment is relatively safe. The most commonly occurring risks include:
    - Bleeding.
    - Infection.
    - Pelvic or abdominal pain.
- Colposcopy during pregnancy is safe, the aim being to exclude invasive disease. Cervical biopsy is safe during the late first or early second trimesters of pregnancy.[7]
- Psychological morbidity is common: women's levels of anxiety before and during colposcopy are high, frequently higher than for a surgical procedure.
- Although providing information leaflets prior to the procedure does not actually decrease anxiety, it can improve knowledge about the procedure and also increase quality of life by reducing psychosexual dysfunction.[8]
- The use of music during the procedure and being able to view the procedure on a TV monitor have both been shown to reduce anxiety levels.[9]

After the procedure

- Following the colposcopy, the patient should wear a sanitary pad.
- Spotting and a light discharge may occur for 3-5 days.
- Dark fluid-like material, sometimes green, or resembling coffee grounds, may be seen on the pad. This is the fluid that was used during the examination.
- The patient should avoid sexual intercourse, vaginal medications or use of tampons until the bleeding stops.
- If treatment has been required, a blood-stained discharge may continue for 2-4 weeks.
- The appearance of the cervix is altered by cervical surgery, especially a cone biopsy. The healed area may be mistaken for a cervical polyp.
- Between 2% and 5% of women with treated CIN have recurrence of abnormalities for which further treatment is required. [10]

Further reading

- Cervical Screening Wales; Public Health Wales
- Cervical screening Northern Ireland; Public Health Agency Northern Ireland
- Cervical screening; Public Health Scotland

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