Vulval Intraepithelial Neoplasia

If you have a persistent itch of the vulva, or any other persistent symptom of the vulva, then see your doctor. It may be a condition called vulval intraepithelial neoplasia (VIN). This is a skin condition of the vulva. It is not cancer. However, it is classed as a precancerous condition, as in some women VIN (after several years) may develop into vulval cancer. Treatment to clear VIN is usually advised. The aims of treatment include to ease symptoms, and to prevent it developing into vulval cancer.

What is the vulva?

The vulva is the external genital area of the female. It includes:

- The labia majora. These are, in effect, large folds of skin.
- The labia minora. These are more delicate folds of skin just inside the labia majora.
- The clitoris - a small organ involved with sexual arousal.
- Tiny glands, the most prominent being the Bartholin's glands.
- The entrance to the urethra - the tube through which urine is passed from the bladder.
- The entrance to the vagina.

What is vulval intraepithelial neoplasia (VIN)?

VIN is a skin disorder that affects your vulva. What happens is that the cells of the skin of part, or several parts, of your vulva become abnormal and change in their appearance. It is called VIN as:

- Vulval means affecting the vulva.
- Intraepithelial means that the condition is limited to within the skin cells (epithelium is a medical word for the top layer of skin).
- Neoplasia means abnormal growth or overproduction (proliferation) of cells.

Note: VIN is not a cancer. The word neoplasia is sometimes used when talking of various cancers but its strict definition is an abnormal proliferation of cells. With VIN the cells are not cancerous.

However, in time, the cells of VIN in some affected women may become cancerous. So, VIN is classed as a precancerous condition. (This is similar to the abnormal cells that are found in some women following cervical screening - previously called the cervical smear test. The abnormal cells that may be found in this situation are also usually precancerous and not actually cancer.)

VIN can develop anywhere on the vulva. One patch, or more than one patch of VIN may develop in different parts of the vulva.
There are two types of VIN:

- VIN, usual type. This is more common in younger women (aged 30-40 years) and is associated with the human papillomavirus (HPV).
- VIN, differentiated type. This is much less common than VIN, usual type. It is more common in women aged between 50-60 years. This type is not associated with HPV.

What causes vulval intraepithelial neoplasia (VIN)?

The exact cause of VIN is not known. However, many cases are strongly linked to HPV. There are over 100 different types (strains) of HPV. Two types, types 16 and 18, are particularly associated with the development of most cases of VIN. These types of virus may cause abnormal cells or even cancer in the neck of the womb (cervix), vagina, vulva or back passage (anus).

Note: some other types of HPV cause common warts and verrucas. These types of HPV are not associated with VIN.

The types of HPV associated with VIN are nearly always passed on by having sex with an infected person. An infection with one of these types of HPV does not usually cause symptoms. So, you cannot tell if you are infected, or the person you have sex with is infected, with one of these types of HPV. In some women, the types of HPV that are associated with VIN affect the cells of the vulva. This makes them more likely to become abnormal, which may later (usually years later) turn into VIN.

Note: HPV infection is very common. However, within two years, 9 out of 10 infections with HPV will clear completely from the body. Even if it remains in the body, most people infected with HPV do not go on to develop VIN. So, although most cases of VIN are associated with HPV, most women who are infected with HPV do not develop VIN. The HPV vaccine actually provides protection against usual-type VIN.

HPV infection by itself may not directly cause VIN. It may be that other factors are needed in addition to HPV to cause VIN. Other factors that may possibly play a role in causing VIN include smoking and anything that weakens the immune system.

VIN, differentiated type, develops more commonly in women who have another vulval condition called vulval lichen sclerosus. It is also sometimes associated with a skin condition called lichen planus. See separate leaflets called Lichen Sclerosus and Lichen Planus.

A similar condition to VIN can occur on other nearby parts of the body. When it affects the cervix it is called cervical intraepithelial neoplasia (CIN). This is much more common than VIN, as it is what is looked for during the cervical screening test. Vaginal intraepithelial neoplasia (VAIN) and anal intraepithelial neoplasia (AIN) are uncommon. The cause of most cases of CIN, VAIN and AIN are also thought to be associated with infection by the HPV. If you have VIN, you have a higher-than-average risk of also developing one of these other related conditions.

What are the symptoms of vulval intraepithelial neoplasia (VIN)?

Sometimes there are no obvious symptoms, particularly when it first develops. So, unless you actually look at your vulva, you may not know VIN has developed. However, symptoms eventually usually do develop. A persistent itch in the vulva is the most common symptom. The itch may become severe. Other symptoms that may develop include soreness, burning or tingling in the vulva. Having sex may be painful.

VIN also usually causes a change in the appearance to the affected part or parts of the vulva. These include areas of redness, or white areas of skin. Sometimes affected areas of the vulva develop raised areas of skin.

So, in short, see a doctor if you have any persistent vulval symptoms or notice any changes to the skin or structures of the vulva. Some of the above symptoms and signs can be caused by various other conditions. Your doctor will be able to examine you and assess you. If your doctor suspects VIN then he or she will refer you to a specialist.
How is vulval intraepithelial neoplasia (VIN) diagnosed?

The diagnosis can be confirmed by a biopsy of the affected area. A biopsy means a small sample of vulval skin is taken to be examined in the laboratory. The biopsy is usually done after using local anaesthetic to numb the area being sampled. The cells in the biopsy are examined under a microscope to look for the typical cells of VIN.

What are the treatment options?

The aim of treatment is to remove or destroy all affected tissue. There are various treatment options. Your specialist will advise on the pros and cons of the different options.

The treatment for VIN depends on where the disease is, how large an area is involved and the symptoms it is causing. Some women with VIN have no treatment at all and are kept under regular review by their specialist. This may be recommended if you have large areas of VIN and have no symptoms.

Treatments options include the following:

**Surgery**

The most common treatment is to have the affected area or areas removed by an operation. The type of surgery depends on the extent of the VIN. Rarely, if the area affected by VIN is extensive, the entire vulva is removed (vulvectomy). A skin graft (skin taken from another site in the body) may be needed if this is done.

**Other treatments**

Ablation treatments are alternatives to surgery. Ablation means destroying the affected area. It can be done using a high-energy beam (laser) or a tiny electrical current passed through a probe (diathermy).

Imiquimod is a medicine that comes as a cream. You rub it on to affected areas (apply it topically) each day for several weeks. It is used for some women as an alternative to surgery or even after surgery.

Photodynamic therapy (PDT) is another treatment which is occasionally used. For this treatment, a medication is either applied topically to the vulva or given as an injection into the bloodstream. The medication is taken up by the abnormal cells and is light-sensitive. A few hours later, a cold laser light is shone at the abnormal cells. This activates the light-sensitive medication, which has an effect of destroying the abnormal cells.

The advantages of PDT and imiquimod (and similar medications) is that, if they work, there is no change to the appearance of your vulva as you would have following surgery.

**Soothing treatments**

The above treatments aim to cure the condition. However, in the meantime, you may benefit from soothing treatments. For example, whilst awaiting results of samples taken (biopsies) or awaiting treatment. These may help to ease any itch or discomfort but do not cure the condition. Your doctor may advise you to use a soothing bland cream on your vulva. Sometimes a steroid cream is used which aims to ease any inflammation or itch. Sometimes a local anaesthetic ointment may be advised to ease soreness.

It is also best to avoid using soaps, deodorants, etc, on the vulval skin as these can be irritating. To wash your vulva you can use a bland moisturiser such as emulsifying ointment instead of soap. You can also use the moisturiser to soothe the area as often as necessary.
What is the outlook (prognosis)?

All the above treatments have a good chance of clearing vulval intraepithelial neoplasia (VIN).

However, with any treatment, even when successful, there is a fair chance that the VIN will return at some point in the future. This is why, if you have VIN, you should have regular follow-up assessments with a doctor, even when treatment has been successful. This is typically a review appointment every 6-12 months. However, if you notice any symptoms or changes in your vulva between follow-up appointments, see your doctor promptly. Don't wait for the next routine appointment.

Research continues to determine which treatment is likely to give the best chance of cure and the least chance of the condition returning.

Can vulval intraepithelial neoplasia (VIN) be prevented?

The HPV vaccine has been introduced for girls from the age of 12 in the UK. Studies have shown that the HPV vaccine usually works very well to prevent HPV infection. As discussed earlier, HPV infection is a major factor in the development of VIN. The vaccine has been shown to work better for people who are given the vaccine when they are younger, before they are sexually active, compared with when it is given to adults.

It is likely that the number of cases of VIN will greatly reduce by the time the girls being vaccinated today reach adulthood.

Smoking and VIN

It is thought that damaging chemicals from cigarette smoking may concentrate in the skin of the vulva and neck of the womb (cervix). This can increase the risk of developing VIN and related disorders. If you smoke, giving up reduces your chance of developing VIN. If you have been treated for VIN and you smoke, giving up smoking can reduce your risk of VIN returning in the future.

Further reading & references

- Guidelines for the Diagnosis and Management of Vulval Carcinoma; Royal College of Obstetricians and Gynaecologists (May 2014)

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