ULCER

An ulcer can be defined as a break in the epithelial continuity. A prolonged inflammatory phase leads to overgrowth of granulation tissue, and attempts to heal by scarring leave a fibrotic margin. Necrotic tissue often at the ulcer centre is called ***slough***.

Aetiology of leg ulcers:

■ Venous disease: leading to local venous hypertension (e.g. varicose veins).
■ Arterial disease, either large vessel (atherosclerosis) or small vessel (diabetes).
■ Arteritis associated with autoimmune disease (rheumatoid arthritis, lupus, etc.).
■ Trauma – could be self-inflicted.
■ Chronic infection – tuberculosis/syphilis.
■ Neoplastic – squamous or basal cell carcinoma, sarcoma.

A chronic ulcer, unresponsive to dressings and simple treatments, should be ***biopsied*** to rule out neoplastic change, a squamous cell carcinoma known as a Marjolin's ulcer being the commonest. Effective treatment of any leg ulcer depends on treating the cause, and diagnosis is therefore vital.

Arterial and venous circulation should be assessed, as should sensation throughout the lower limb. Surgical treatment is only indicated if non-operative treatment has failed or if the patient suffers from intractable pain. Meshed skin grafts are more successful than sheet grafts and have the advantage of allowing mobilisation, as any tissue exudate can escape through the mesh. It should be stressed that the recurrence rate is high in venous ulceration, and patient compliance with a regime of hygiene, elevation and elastic compression is essential.

Pressure sores:

Pressure ulcers, also known as **pressure sores** or **bed sores**, are localised damage to the skin and/or underlying tissue that usually occur over a bony prominence as a result of usually long-term pressure, or pressure in combination with shear or friction.

The most common sites are the skin overlying the sacrum, coccyx, heels, and hips, though other sites can be affected, such as the elbow, knees, ankles, back of shoulders, or the back of the cranium.

Pressure ulcers occur due to pressure applied to soft tissue resulting in completely or partially obstructed blood flow to the soft tissue. Shear is also a cause, as it can pull on blood vessels that feed the skin. Pressure ulcers most commonly develop in individuals who are not moving about, such as those who are on chronic bedrest or consistently use a wheelchair. It is widely believed that other factors can influence the tolerance of skin for pressure and shear, thereby increasing the risk of pressure ulcer development.

These factors are protein-calorie malnutrition, microclimate (skin wetness caused by sweating or incontinence), diseases that reduce blood flow to the skin, such as arteriosclerosis, or diseases that reduce the sensation in the skin, such as paralysis or neuropathy. The healing of pressure ulcers may be slowed by the age of the person, medical conditions (such as arteriosclerosis, diabetes or infection), smoking or medications such as anti-inflammatory drugs.

Although often prevented and treatable if detected early, pressure ulcers can be very difficult to prevent in critically ill people, frail elders and individuals with impaired mobility such as wheelchair users (especially where spinal injury is involved). Primary prevention is to ***redistribute pressure by regularly turning the person***.

In addition to turning and re-positioning the person in the bed or wheelchair, eating a balanced diet with adequate protein and keeping the skin free from exposure to urine and stool is very important.

FISTULA

A fistula is an abnormal connection between two hollow spaces (technically, two epithelialized surfaces), such as blood vessels, intestines, or other hollow organs.

Types of fistula can be described by their location. Anal fistulas connect between the anal canal and the perianal skin. Anovaginal or rectovaginal fistulas occur when a hole develops between the anus or rectum and the vagina. Colovaginal fistulas occur between the colon and the vagina. Urinary tract fistulas are abnormal openings within the urinary tract or an abnormal connection between the urinary tract and another organ such as between the bladder and the uterus in a vesicouterine fistula, between the bladder and the vagina in a vesicovaginal fistula, and between the urethra and the vagina in urethrovaginal fistula. When occurring between two parts of the intestine, it is known as an enteroenteral fistula, between the small

intestine and the skin as an enterocutaneous fistula, and between the colon and the skin as a colocutaneous fistula.

Fistulas can result from an infection or inflammation, injury or surgery. Fistulas are sometimes surgically created as part of a treatment, for example arteriovenous fistulas for hemodialysis.

Treatment for fistula varies depending on the cause and extent of the fistula, but often involves surgical intervention combined with antibiotic therapy. In some cases the fistula is temporarily covered using a fibrin glue or plug. Catheters may be required to drain a fistula.

Location:

Types of fistula can be described by their location.

1. Anal fistulas connect between the epithelialized surface of the anal canal and the perianal skin.

2. Anovaginal or rectovaginal fistulas occur when a hole develops between the anus or rectum and the vagina.

3. Colovaginal fistulas occur between the colon and the vagina.

4. Urinary tract fistulas are abnormal openings within the urinary tract or an abnormal connection between the urinary tract and another organ such as between the bladder and the uterus in a vesicouterine fistula, between the bladder and the vagina in a vesicovaginal fistula, and between the urethra and the vagina in urethrovaginal fistula.

5. When occurring between two parts of the intestine, it is known as an enteroenteral fistula, between the small intestine and the skin as an enterocutaneous fistula, and between the small intestine and the colon as a colocutaneous fistula.

Causes:

1. Disease: Infections including an anorectal abscess and inflammatory diseases including Crohn's disease and ulcerative colitis can result in fistulas. Fistulas to the anus may occur in hidradenitis suppurativa. In women, fistulas can also occur following pelvic infection and inflammation.

2. Surgical and medical treatment:

Complications from gallbladder surgery can lead to biliary fistulas As well as being congenital or resulting from trauma, arteriovenous fistulas are created purposefully for hemodialysis. Radiation therapy

to the pelvis can lead to vesicovaginal fistulas. Persistent gastrocutenaous fistulas can develop after gastrostomy.

3. Trauma:

Prolonged childbirth can lead to fistulas in women, in whom abnormal connections may occur between the bladder and vagina, or the rectum and vagina. An obstetric fistula develops when blood supply to the tissues of the vagina and the bladder (and/or rectum) is cut off during prolonged obstructed labor.

Treatment:

Treatment for fistula varies depending on the cause and extent of the fistula, but often involves surgical intervention combined with antibiotic therapy. In some cases the fistula is temporarily covered, using a fibrin glue or plug. Catheters may be required to drain a fistula.

Surgery is often required to assure adequate drainage of the fistula (so that pus may escape without forming an abscess). Various surgical procedures are used, most commonly ***fistulotomy***, placement of a seton (a cord that is passed through the path of the fistula to keep it open for draining), or an endorectal flap procedure (where healthy tissue is pulled over the internal side of the fistula to keep feces or other material from reinfecting the channel).

Management involves treating any underlying causative condition. For example, surgical treatment of fistulae in Crohn's disease can be effective, but if the Crohn's disease itself is not treated, the rate of recurrence of the fistula is very high (well above 50%).

SINUS

Blind track lined by granulation tissue leading from epithelial surface down into the tissue.

Stages of sinus:

1. Abscess burst out leading to a persistent discharging sinus.
2. Can be multiple, wide opening, undermined edge.
3. Bluish discoloration around the edges.