Current Practice

DISEASES OF THE SKIN

Venous Leg Ulcers

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"If you chance to have in Cure an Apostume, that by the malignitie of the Humors, or other evill disposition of the body changeth itselfe into a rebellious Ulcer . . . or that such an Ulcer come to thy hand from another Artist, be not out of hope to cure the same. For if Nature be not utterly thy enemy . . . proceeding as followeth, thou shalt be able to cure the disease, by the helpe of God." JOHN WOODALL (1639).

Venous or gravitational ulcers are the most common type of chronic ulcer of the leg. They affect women twice as frequently as men and are usually seen near the ankle, especially on the medial aspect of the leg. Chronic oedema and indurated areas are always present and pigmentation of the lower part of the leg is common. Varicose veins may or may not be found, so that the term "varicose ulcer" is not appropriate. Venous ulcers cause much disability on account of pain, and they persist indefinitely if not adequately treated. After years of neglect they may become incurable, but usually they respond most satisfactorily to treatment.

These ulcers of the leg are associated with chronic oedema and induration, because of an impaired venous return of blood from the lower limb. The venous return depends on the rhythmical contraction of the calf muscles which enclose the deep veins, together with the valves in these veins, which ensure that the blood is forced upwards. Failure of the pumping system causes chronic venous hypertension in the lower part of the leg, and, as a result, raised capillary pressure, which causes the firm oedema and pigmentation. The commonest reason for failure of the leg-muscle pump is deep venous thrombosis and the recanalization of the veins which follows, as this destroys or damages the valves in the deep veins. Superficial varicosities, which indeed are often absent, are of little importance in the cause of this type of ulceration. It is the chronic oedema which matters, and unless this is obviated the ulcers will never heal. This is the essential principle in treatment.

These ulcers, as I well know from experience, are not readily dealt with in general practice, as their treatment is time-consuming, though usually satisfying, as all but the most chronic can be healed. They are best treated in a hospital out-patient clinic held regularly for this specific purpose, where nurses trained to apply the appropriate bandages are available.

Prevention

Before discussing treatment mention should be made of prevention. There would be many fewer venous leg ulcers if post-partum and postoperative thrombosis and that occurring during medical illness could be prevented. The problem cannot be discussed here but the encouragement of movement of the legs of those at risk can do much to lower the incidence of this complication. Once deep venous thrombosis has occurred elastic support for the leg is required until oedema has disappeared. Future ulceration can be prevented in this way.

Treatment

When a patient with a chronic venous leg ulcer comes for the first time a general examination is important. Before treatment of the ulcer is started underlying disease such as diabetes mellitus, anaemia, hypertension, atherosclerosis, myxoedema, syphilis, disease of the central nervous system, carcinoma, or any other debilitating illness must be sought and, when possible, treated. Intra-abdominal tumours, such as the pregnant uterus or a large ovarian cyst, cause increased venous pressure in the lower limbs. If examination is perfunctory and limited perhaps to the legs such conditions are sometimes missed. Delay in healing may result from a deficiency of iron, vitamin C, or protein, which must be corrected if the ulcer is to clear up. An attempt should be made to get obese patients to slim, though as weight-reducing measures need the co-operation of the patient success is not usually achieved.

Rest

Rest in bed is not usually necessary and in these patients carries the risk of provoking thrombophlebitis. Moreover, it is obviously undesirable to immobilize the breadwinner of a household or the mother of a family for several weeks. This treatment should be reserved for the patients with chronic, sclerosed, large ulcers unresponsive to ambulatory measures and for those with painful, inflamed, infected ulcers. A few days' rest will usually make the latter suitable for treatment by compression and movement.

In order to get rid of the oedema in the affected limb the patient may be put to bed with the foot of the bed raised about 9 in. (22 cm.) and a cage placed over the legs so that they can move freely and are not pressed by the bedclothes. There is a tendency for equinus deformity to develop in these patients, and this may be enhanced by such pressure.

Compression

Firm, elastic support is beneficial because it relieves the oedema, assists the pumping and massaging effects of muscular contraction, and compresses dilated veins.

The adhesive elastic bandage is effective because it can be applied by a skilled person, remains in position, gives good support, prevents interference with the healing ulcer, and relies not at all on the intelligence of the patient. Longitudinal strips of the adhesive bandage are applied along each side of the leg from the sole to just below the knee. The strips should cover the ulcer or ulcers. They will prevent the formation of ridges round the leg from the pressure of the edge of the bandage. No other dressing is usually required unless it be a pad of dry gauze. The local pressure from such a pad seems to stimulate healing and is especially effective for ulcers in the malleolar hollow. Some practitioners prefer to use a pad of foam-rubber for this purpose. The bandage should be applied evenly from the base of the toes to just below the knee with no creases or

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folds. It should be tighter round the foot and ankle than round the calf, the pressure being gradually reduced as one works up the leg. If the skin is irritable an ichthyol paste bandage may be applied under the adhesive bandage, or if the ulcer is infected a bandage impregnated with an oxyquinoline antiseptic may be used in a similar way. Such a bandage is useful when the ulceration is associated with exudative infected eczema of the leg. With more chronic, lichenified eczema a bandage impregnated with tar paste is better. As with the other bandages, it is applied directly to the skin and then covered by the adhesive bandage.

If the ulcerated leg is very oedematous it is best to apply these occlusive bandages early in the morning after the patient has spent the night in a bed with the foot-end raised. If this is not possible postural drainage should be used. The patient should lie for three-quarters of an hour flat on her back with the lower limbs raised on supports at an angle of forty-five degrees. After this the bandages are applied.

The period between bandaging and rebandaging is variable and depends on the degree of initial oedema and the amount of infection in the ulcer. Under the worst conditions rebandaging will be required half to one week later but when the quantity of discharge becomes reduced, as usually happens within a few weeks, the bandage may be left undisturbed for three or four weeks before replacement.

If the patient is intelligent and can be taught to apply a bandage, and if daily dressing is required on account of gross infection, an elastic webbing bandage provides excellent support. It is preferable that such a bandage stretch only in the longitudinal direction, as "two-way stretch" bandages tend to exert more pressure along their edges than over the central part and cause ridging of the oedematous leg reminiscent of the Michelin tire man. A new bandage which gives almost as much support as the webbing bandage and is more comfortable to wear is the "Elastoweb" bandage. It is softer and stays in position more readily. Elastic crepe bandages do not usually provide sufficient compression to abolish the oedema of patients with chronic ulceration. Elastic stockings are not usually satisfactory for these patients until the ulcer has firmly healed and the scarred area has become smooth. Whatever the method of compression the patient should be encouraged to walk, and when sitting or standing should form the habit of repeatedly contracting and relaxing the calf muscles.

Physiotherapy

Physiotherapy can be combined with the use of "Elastoweb" or elastic webbing bandages. Deep, firm massage (Bisgaard's method) from the foot to the knee can greatly reduce chronic oedema and soften indurated areas. Ideally it should be carried out daily, but even twice weekly it is effective. Cramp in the legs, a troublesome symptom in this condition, usually disappears after massage of this type. Ultra-violet radiation is sometimes used for these ulcers but I have not found it helpful. Chronic "rebellious" ulcers are sometimes stimulated to heal by means of short-wave diathermy. It must be stressed that these measures are purely ancillary to treatment by compression.

Local Treatment

In the treatment of leg ulcers attention is all too often concentrated on local applications, while the essential consideration, that of eradicating the oedema, is neglected. Local treatment is of importance in few patients with leg ulcers—namely, those whose ulcers are heavily infected with signs of local inflammation. Many foul ulcers quickly become dry and begin to heal as soon as the oedema has disappeared. The local application must be non-irritant and unlikely to cause allergic sensitization. For this reason sulphonamide, penicillin, streptomycin, chloramphenicol, and nitrofurazone should never be

used for this purpose. It must be remembered that neomycin and framycetin sometimes cause sensitization.

For ulcers infected with Gram-negative organisms pads soaked in eusol may be applied. They should be changed every few hours, but this treatment, which is time-consuming, is usually only required for a few days. Polymixin B in a powder or ointment is also useful for Gram-negative infections and so is phenoxyethanol (Phenoxetol) in a cream or in Lassar's paste (2%). Ulcers heavily infected with Gram-positive organisms may be treated with chlorquinaldol (Steroxin) or a powder containing neomycin, bacitracin, cystine, and glycine (Cicatrin), which is easy to apply. Gentian violet solution (1%) is still useful at times. The presence of a slough is uncommon with venous ulcers, unlike the arteriosclerotic type, but if present malic acid ester (Aserbine) may be useful, though this treatment is often rather painful. I have not found polynoxylin useful. In a double-blind controlled trial with a polynoxylin powder the results were no better than with the talc used as the control.

The use of corticosteroid creams, either alone or with an anti-infective agent, is sometimes advocated, but the results have not been critically assessed. Such creams are useful for eczema around the ulcer.

Whatever local treatment is decided on it should be remembered that non-adherent dressings such as Carbonet or Microdon (but not paraffin gauze containing balsam of Peru, which may cause irritation) are useful and are essential when a powder or paint is applied. Ointments containing resorcinol, if used for long periods, can cause myxoedema.

To sum up: local treatment is often not required; drugs known to cause sensitization should not be applied; and it may be necessary to try a number of preparations before the one that suits a particular patient is found.

Drugs

Drugs play only a subsidiary part in the treatment of venous ulcers. If a painful ulcer shows acute inflammatory changes around the margin and if the responsible organism and its sensitivity to antibiotics can be determined the appropriate antibiotic may be given by mouth or injection for five days. During the first few weeks of treatment of an ulcer accompanied by gross oedema diuretics may be useful. Patients with chronic ulcers, unhealed for years and unresponsive to the usual methods of treatment, may be helped if in addition to a diuretic an anabolic steroid is given daily for a month or six weeks. Liver disease is a contraindication to the use of anabolic agents. Patients who have mild myxoedema are greatly helped by thyroxine not only in regard to their general state but also to their ulceration. Cramp in the leg at night is sometimes a troublesome symptom associated with these ulcers. It usually responds to quinine bisulphate 0.6 g. (10 gr.) o.n.

Surgical Treatment

The surgical treatment of venous leg ulcers will not be discussed here, but it must be stressed that mere treatment of superficial varicosities will do little to improve the venous return from the lower limb, as the main defect lies in the deep veins and in the leg muscle pump. Excision of the ulcerated area, accompanied by ligation of the communicating veins (Cockett's operation) and grafting, is occasionally indicated and may be most successful.

Aftercare

The aftercare of a patient whose leg ulcer has been healed is important, as a relapse will usually occur if the oedema returns. For women, elastic stockings provide a convenient means of supporting the leg, but they must be well-fitting, made of firm material, and reach to the mid-thigh. For men, elastic webbing bandages are best.