SURGICAL PROCEDURES IN GENERAL PRACTICE

This is one of a series of articles contributed by invitation

TRUSSES AND BELTS

BY

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Taking first the subject of trusses, there are certain general principles which I think are of importance.

Type of Truss

The pad must be large enough to cover the opening through which the hernia protrudes, and it must be made from a material that is durable but not too hard, these qualities being most conveniently supplied by a form of cork. The spring must be of sufficient strength to keep the pad in position and prevent the hernia from protruding beneath it when any extra pressure (such as from a hard cough) is applied. To provide for the above contingency a steel spring is necessary, and, except in very special circumstances, I do not therefore prescribe any elastic or webbing truss. The spring must be covered by a material which is durable and comfortable, such as a soft kind of leather, the patient getting used to the pressure and no injury being done to the skin.

Truss for Inguinal Hernia

It is usually fairly easy to control this type of hernia by means of a truss, except when the protrusion is of considerable size. The pad of an inguinal truss fits snugly over the hernia, and when the hip is flexed the pad is forced more securely on to the exterior of the inguinal canal—a point of considerable importance, as we shall see later.

The plain pad of the inguinal truss will control any hernia that does not protrude beyond the external abdominal ring. In cases in which the inguinal hernia passes down into the scrotum or labia it is almost certain that a larger pad will be needed, and this is known as the rat-tail. The rat-tail is a prolongation downwards and inwards of the ordinary pad, ending in a thin strap which passes across the perineum up over the buttocks of the same side and fastens to a buckle fixed on the belt immediately behind the anterior superior spine. This type of pad will hold in place a hernia of considerable size, but when the protrusion passes down beneath it, it usually does so on the inner side, and the pad will then need building up on its internal aspect. This addition has led to a third type of pad which is known as a forked-tongue. The forked-tongue pad will hold in place the majority of herniae, but in some neglected cases and in old people with feeble muscles even this variety fails. To meet these circumstances several additions to the forked-tongue pad have been devised.

First, the pad, instead of being flat on the surface applied to the skin, is made into what is known as a prominent pad, and the surface then becomes cone-shaped, the apex of the cone fitting in the opening of the sac into the peritoneal cavity, in this way giving extra pressure with more hope of keeping the rupture in position. As a further measure, the placing of a steel spring in the pad, with its free end acting direct on to the hernia, provides still greater pressure. This addition is known as the concealed spring, and is the last hope of control by a truss except by making the actual spring of the

truss more powerful. When all these efforts have failed the only other instrumental help to be got is from a bag and braces. This appliance merely consists of a large bag, shaped to the hernia when the patient is in the upright position, the weight being taken over the shoulders by a pair of braces; the bag has an opening fixed at the level of the penis for purposes of micturition. It will take time for the patient to get accustomed to any of these forms of inguinal truss, and the wearer's grumbles during the first two or three weeks should not be taken too seriously. Certain precautions, however, should be taken: the patient should be watched for points of skin pressure, which will be shown by the appearance of sores. These are most likely to occur in thin patients, and the most commonly affected parts are over the spinal column and at the level of the anterior superior spine. Pressure over the spinal column can usually be relieved by fitting two back pads made of thick felt on to the inner side of the belt—one on each side of the spine. Pressure over the anterior superior spine usually means either that the truss is not of the correct size or that the outline of the patient is abnormal; in the latter case the spring, which should be made of a malleable steel, will need to be specially shaped to the patient. These difficulties of pressure do not occur with trusses (usually proprietary) made with elastic belts, but my objection to these belts is that they do not provide enough pressure, except in the case of very small herniae, and even then the elastic so rapidly "gives" that the pressure very soon becomes inadequate.

In taking the measurement for an inguinal truss the tape-measure should fall into the hollow of the lumbar spine at the back and come round immediately below the anterior superior spine on each side, the ends meeting just above the symphysis pubis. In the case of children the truss should be rubber-covered to allow of easy cleaning, and very careful attention should be paid to the skin, with the aid of spirit and dusting powder. As there seems to be some confusion concerning the chance of cure of an inguinal hernia by wearing a truss I should like to say that it is almost non-existent after the age of 4; before that it is a very small chance, and depends on one very important point. This point, which must be rigidly observed if there is to be any possible opportunity of a cure, is that once a truss has been placed over an inguinal hernia no further protrusion of the rupture must be allowed until the truss is finally discarded, which may not be for several years. This means that if ever the truss is taken off a hand must immediately be placed over the hernia so that nothing is allowed to come down, and in addition the patient must sleep in a truss—conditions which make life very difficult. I have no hesitation in saying that a truss is not in any way a suitable method of treatment for an inguinal hernia unless there is a definite contraindication to operation. Most of us know how crippling a hernia can become in old age, sometimes making life a burden; consequently it is my practice to operate even up to quite a late age.

Truss for Femoral Hernia

In this type of hernia the question of easy control is not nearly so simple as with the inguinal variety, and for two reasons. First, a femoral hernia sac is frequently

surrounded by a very definite lipoma, formed from extra-peritoneal fatty tissue, and this prevents pressure being exerted direct on to the sac and gives rise to pain. Secondly, when the thigh is flexed, as in sitting down, instead of the pad of the truss being forced more securely on to the hernia it tends, owing to its anatomical position, to be lifted off the sac and therefore allows the contents to protrude. In this case the action of flexion will be seen to be exactly the opposite to that in the inguinal case. The type of spring should be the same here as in the inguinal truss; the pad is different only in that its direction is now much more downwards than in the case of the inguinal pad. In cases where an extraperitoneal lipoma is present a slightly cupped pad can be fitted so that the irreducible fatty tissue lies in this hollow and is therefore, so far as possible, not subjected to direct

A.—Right inguinal.

C.—Left forked-tongue.

B.—Right rat-tail.

D.—Right femoral.

pressure. This type of pad, which is known as the femoral hollow pad, prevents a considerable amount of pain, but is not altogether satisfactory.

In some instances a femoral hernia attains a considerable size, but it usually remains quite small even in old age. When the sac is a large one the pad will have to be increased to a size necessary to cover the opening in the cribriform fascia through which the hernia is protruding into the subcutaneous tissue. In order to keep this larger pad in position a leather belt, encircling the thigh from the pad and buckling back again to it, is usually fitted; it does not, however, add to the patient's comfort. The method of measurement for a femoral truss is exactly the same as that described for the inguinal variety.

Since the femoral sac is never seen in young children the problem here is entirely an adult one. The chances of a cure by the wearing of a truss can be said to be *nil*.

It will be gathered that in my opinion a truss is not a satisfactory treatment for a femoral hernia unless there is some very definite contraindication to operation.

Truss for Umbilical Hernia

This variety is very common, and is usually congenital in origin. The type of truss used for its control is again a steel spring, which at one end is beaten out into a thin plate. The whole truss is covered with a soft leather material and is buckled round the body at the level of the hernia, the fastening being placed on the external surface of the plate covering the sac. The truss as a rule controls the hernia with ease and is comfortable to wear. The difficulty arises when the hernia is irreducible, a not uncommon complication in long-standing cases; but here the steel plate can be cut away to allow the irreducible portion of the hernia to fit in the hollow thus formed, the pad then becoming a rim covered with material and shaped to the varying size of the rupture.

If, as often happens, the umbilical hernia occurs in a patient who is also obese and requires an abdominal belt for general support, then the umbilical pad can be incorporated in the abdominal belt. The measurement for an umbilical truss is made straight round the body at the level of the umbilicus.

The chances of cure by the wearing of a truss in these cases is very small, although from time to time it does happen in infants. It is a curious fact that umbilical hernia is very common in newborn infants among the black races in South Africa, and although the condition is seldom treated in any way these herniae tend to disappear in the majority of cases; yet in this country, despite being kept in place by trusses, they have a great tendency to persist.

Abdominal Belts

What are the conditions for which abdominal belts are worn? First, there is obesity; secondly, very lax abdominal walls; and, thirdly, visceroptosis.

Obesity gives rise to abdominal pain owing to the weight of the overloaded omentum, and a belt designed

for this purpose will therefore need to lift upwards to some extent but at the same time must cover the whole abdomen, otherwise the fatty tissues are liable to bulge over the edges. The belt should be made of a strong durable material, with vertical bone supports incorporated; these must be well covered, or they will tend to stick into the patient. The belt should be quite tight at its lower border and somewhat looser above, as by this means the more pendulous lower parts are lifted and are fitted into the looser upper half of the belt. The measurements required by the instrument-maker for this belt are, first, straight round the body at the level of the lower border of the xiphisternum; secondly, a similar measurement at the level of the umbilicus; thirdly, one half-way between the umbilicus and the symphysis pubis; and, lastly, measurement at the level of the symphysis. The depth of the belt is taken from the tip of the xiphisternum to the symphysis pubis; the depth at the back should be about one-half of that in the mid-line in front. Fastening is done by a series of buckles, which in my opinion are more satisfactory if placed at one or other side than if in the mid-line in front. For extra strength a strap can be brought round from the mid-line at the back on each side and buckled to a right and left flap fastened to the mid-line in front; this is usually known as a yoke.

The belt provided for the *lax abdomen* is of the same kind as that just described, but as the condition is usually a result of multiple pregnancies and not necessarily a case of obesity, the effect is not so good as in cases of obesity alone, and in many such patients a repair operation is of much greater benefit.

With regard to *visceroptosis* one point of the utmost importance is that the diagnosis must first be clearly established by x-ray evidence. I see a large number of cases in which patients are sent up for a visceroptosis belt and in which the diagnosis has not been established, the real condition being something quite different. In cases of visceroptosis the aim is to give support to the lower half of the abdomen in an upward direction and thus hold up the sagging viscera. The support is usually provided by a suitably covered steel plate, which fills the whole space of the anterior abdominal wall below the umbilicus and is kept in place by two springs passing round to the back and fitting on to each buttock. For the fitting of any abdominal belt, most particularly that for visceroptosis, it is of great importance that the patient should be lying down, and if possible the head should be at a lower level than the pelvis. In this way the contents of the abdomen fall back into their normal or even into over-corrected positions, and if the belt is then fixed they are thus kept up. If, on the other hand, the belt is fixed when the viscera are already sagging, then the trouble is not only not remedied but tends to be exaggerated and the pain made worse.

Nutrition and Local Government—What Your Local Authority Can Do is a threepenny pamphlet published by the Children's Minimum Council (72, Horseferry Road, London, S.W.1). The problem of securing proper nutrition for every person in the country, and especially for the children, is now very much in the foreground. It has been extensively studied by the League of Nations, and the Government is concerning itself about the subject in various ways. It is less widely realized, perhaps, than it should be that even under the existing laws a good deal can be done to alleviate malnutrition, especially among mothers and children. This pamphlet sets out clearly what each local authority can do in its own area to help to solve the problem of malnutrition.

Nova et Vetera

THE MEDICINE OF OUR ANCESTORS

Some Old MSS.

Two rather quaint old medical manuscripts were sold at Messrs. Sothebys in Bond Street on December 14. One consisted of a bound volume of treatises in various languages (English, French, Latin) and by different hands: the first and longest of the collection is a treatise on surgery, which runs to 161 pages, plus an appendix on the compounding of remedies. Chapter I is headed "Of a Phlegmon," and begins:

"A Phlegmon or inflammation is a very sensible swelling of some part with a redness, heat and pain of ye same, and often is accompanyd with a feaver, all which is caused by an extravasation of the blood. The causes are a thick and sometimes a rarefyd violent mould and fermentative blood which meeting with some resistance in ye smaller vessels or being more thickened or rarefyd in some places than others it stops in ye blood vessels and so hinders yt that follows to circulate which distending the membrans of ye arteries or veins at last burst 'em and overflows betwixt ye fibres or membrans of some fleshy part which it distends and elevates and is called a phlegmon. A phlegmon is produced also by any external or internal pungent irritation inasmuch as it produces a violent influx of ye spirits which contracting ye fibres of ye part chokes up ye passage of ye blood, or it may cause a phlegmon by rarefying ye blood more than ordinary, as smoke for example causes an inflammation of the eye. A coagulated lympe of the arteries and veins may cause a phleg: or any external cause pressing on ye extremity. . . . As for the cure, let ye patient be bloused as soon as can be by which the growth of ye swelling will be hinderd and the fever deminish'd."

The author further advises free purgation, though he adds that some authorities are very much against it. It seems a legitimate deduction that the writer knew and freely accepted Harvey's teachings on the circulation; so the date of the manuscript is probably of the seventeenth century. The handwriting is very similar to that of a later MS. in the series which is dated 1682, though it is hardly possible to say they are certainly by the same hand. Following a treatise in French on poetry, one comes to what would appear to be a copy of a letter to a patient about some affection of the breast—perhaps a malignant growth.

"The oppresion of your breast and extenuation of your body seems to proceed from the acrimony or sharpness of your blood which passing through the louns that are of a very delicate contexture corrodes or irritates the parts thereof: wherefore the chief thing one shoud aime at in the curreccion is to sweeten the blood and give it a natural consistence and more proper to nourish the body. For these ends I think fit she shoud make use of the insuing remedies. First 't will not be amiss to let out a small quantity of blood, both because the remedies so will have more roome to operate their effects as also to hinder any vain or blood vessel may be in danger to be opened in the lungs or in any other place. Secondly to evacuate in some manner ye acrimonious humours in the blood 't will be fitting to take some very mild and gentle purge, for example a little mann in broth or with a pectoral decoction as follows. . . . A day after this she may make use of these pectoral pills for ten days" [liquorice, hyssop, prune, prescribed for pills]. "After this I think 't woud be fit she shoud purge herself as she did before and a day after use ye following broth composed of crayfish of the river which are very much in use in all maladys coming from ye sharpness of the blood."

The MS. goes on to advise a milk diet for a month and a half, with oatmeal, etc.

"Charmes" Against Sickness

The other old medical manuscript is of date approximately 1475 and consists of fourteen leaves of medical and domestic recipes in English, with a list of "charmcs" to ward off sickness, some of them in Latin. The handwriting