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Everyday Aids and Appliances

Trusses

E Burns, A Whitley

A hernia is the protrusion of a viscus or a part of a viscus through an abnormal opening in the walls of its containing cavity. The commonest forms of external abdominal hernias are inguinal, femoral and umbilical.

All hernias are at risk of strangulation or obstruction, and although the risk of these complications may vary with the site and nature of the hernia (table), even an easily reducible direct inguinal defect is not without risk. Therefore the best treatment for any hernia is surgery. Surgery should always be considered for femoral hernias: not only is the risk of strangulation high but a truss is rarely effective in maintaining reduction of the hernia as the hernial sac protrudes into the leg and movement of the leg results in descent of the hernial contents.¹ The hazards of emergency treatment of a strangulated or obstructed hernia exceed considerably those of elective surgical repair and therefore patients should be advised to opt for operative treatment, especially as surgery may be performed under spinal or even local anaesthesia if the patient's condition precludes general anaesthesia.²

A truss may be considered for patients who are too frail for or who refuse surgery and for patients awaiting operation. The aims of treatment are to prevent strangulation or obstruction of the hernia and to reduce the local discomfort of the defect.

ARE TRUSSES USEFUL?

Few studies of the efficacy and acceptability of trusses have been reported. To maintain reduction of an hernia the pressure produced by the truss must be directed along the line of descent of the hernia. As the hernial canal passes obliquely through the abdominal wall the force produced by the truss must be directed

External abdominal hernias: prevalence and relative risks of strangulation or obstruction

Site of hernia	Prevalence (%)*	Estimated risk of complication
Inguinal:		
Indirect	10.0	High
Direct	63.0	Moderate
Femoral	17.0	Very high
Umbilical	8.5	Variable but usually moderate

*Excluding epigastric, paraumbilical, spigelian, lumbar, gluteal, and sciatic hernias (comprising in total the remaining 1.5% of external abdominal hernias).

upwards and backwards. This aim is rarely achieved, so that protrusion of the hernial contents into the canal is not prevented by the truss even if descent into the hernial sac does not occur. Therefore the risk of strangulation or obstruction is likely to remain,^{3,4} but trusses usually relieve the symptoms.

One study reported on 85 patients who were treated before operation with a truss for periods ranging from one month to 42 years.⁵ This was a retrospective review with no untreated controls, and the subjects had all been selected for treatment with elective surgery. Almost all of the patients used an elastic truss. Almost a third (24 patients) experienced complete relief from hernial discomfort and a further third (29) reported some improvement in their symptoms. The remaining 26% (22 patients) had a variety of difficulties: the discomfort of the truss exceeded that of the hernia itself in nine; the hernia became incarcerated in six; one patient suffered ipsilateral testicular atrophy, and in the remaining seven the truss was considered "ineffective." No prospective controlled studies of the use of trusses have been reported.

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PROBLEMS WITH TRUSSES

Some of the problems encountered with a truss have been described above. The use of a truss may itself increase the risk of hernial complications. Pressure on the margins of the hernial orifice may lead to atrophy of the fascia and aponeurosis, enlarging the hernial defect, and longstanding use of a truss may result in adhesion of the spermatic cord to the hernial sac—both these problems tend to make surgical repair more difficult. Pressure on a protruding hernial mass from a truss may impair venous and lymphatic return and increase the risk of strangulation. Other complications of the use of a truss are atrophy of the spermatic cord, the development of adhesions within the hernial sac, and thrombosis of the iliac artery.³

TYPES OF TRUSS

Two types of truss are commonly prescribed: the elastic and the spring truss (fig 1). The two types vary in the composition of the belt of the truss, but the design has changed little since James Parkinson offered his "hints for the improvement of the truss" in 1802.⁶ The most common construction is a belt either of elastic webbing or of a spring covered in cotton or linen, with a pad designed to hold the hernia in reduction attached to the belt. A "rat tail" strap forms a perineal support, holding the pad against the hernial orifice (fig 2). The pad and the anterior portion of the strap are covered with cotton or linen, and the posterior section of the perineal strap is constructed of elastic webbing. Maintaining the truss is difficult as none of its components are removable or washable. Trusses may be supplied as single or double as required for unilateral or bilateral deficits.

Frail patients may have difficulty in manipulating a spring truss as considerable strength may be required to fit it, and many patients find such trusses too uncomfortable to wear. The elastic truss is usually better tolerated, although fitting of even this design requires a degree of manual dexterity as the elastic belt must first be fastened tightly and the perineal strap then secured by fastening a buckle at the back of the elastic belt.

Large irreducible hernias may provoke considerable discomfort. If surgery is impossible symptoms may be

FIG 1—(Left) spring truss; (right) elastic truss

FIG 2—Truss showing belt, pad, and rat tail strap

FIG 3—Bag truss

relieved by supporting the hernial contents with a bag truss (fig 3).

PRESCRIBING

A truss may be prescribed on the standard form (FP10) by either general practitioners or hospital doctors. It is important that the patient is directed to a qualified surgical appliance supplier (an orthotist) so that the support may be correctly fitted; if necessary the orthotist may arrange for alteration of the truss. The orthotist will also instruct the patient in fitting the truss.

PRACTICAL HINTS TO PATIENTS

Information to patients on fitting and maintaining their truss is based on common sense rather than the results of scientific endeavour. The patient must always be recumbent and the hernia fully reduced when the truss is fitted. If the appliance is uncomfortable the orthotists can arrange for suitable alteration; they are also the best source of further advice to the patient. In most cases, however, orthotists rarely see the patient after supplying the truss. If a replacement is required a new prescription should be issued.

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Correction

Trauma in pregnancy

This article (27 October, p 974) should have been credited to Dr Pamela Nash and Mr Peter Driscoll and not just to Dr Nash as published.