Thovara repair of inguinal hernias

R. Vara-Thorbeck, M. Ruiz-Morales and E. Segovia-Cornejo

Catedra de Patologia y Clinica Quirurgicas, Facultad de Medicina, Universidad de Granada, Spain

Summary: A new procedure for inguinal hernia is described: the Thovara method. This technique is really a modified version of Lichtenstein’s tension-free hernioplasty to which is added a Kirschner-like transposition of the spermatic cord. Between 1988 and 1992, 654 Thovara hernioplasties were performed. 95% (621) patients underwent physical examination one year after the operation and 511 (78%) were reexamined five years after surgery. Early recurrences (< 1 year) were noted in five cases (0.8%). In three cases the mesh had to be removed because of infection. In late follow-up (5 years) no recurrences were observed but in five cases (1%) testicular atrophy was present. The Thovara method is a simple and physiological repair, which eliminates recurrence, the “bête noire” of inguinal herniorrhaphies. However, almost one half of recurrences are discovered five to ten years after the operation and final evaluation of this technique must await randomized controlled trials and comparisons with alternatives.

Key words: Groin hernia — Tension-free hernioplasty — Thovara repair — Recurrences — Testicular atrophy

Correspondence to: R. Vara-Thorbeck, Catedra de Patologia y Clinica Quirurgicas, Hospital Clinico "San Cecilio", Avda. Dr. Olóriz s/n, E-18012 Granada, Spain

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Thovara technique

The aim of this paper is to present an original technique, the so called Thovara method [Vara-Thorbeck 1990, 1991], which seems, after more than five years follow-up, to prevent recurrences.

Inguinal hernias are very common, so that the incidence of herniotomy-herniorrhaphy is high. Greater awareness of the importance of hernia surgery has led to a decline in the incidence of recurrence after repair. However, recurrence rates for primary indirect and direct inguinal hernias range from 1% to 10% [Condon 1989]. Numerous surgical techniques (Bassini, Shouldice, Lichtenstein, etc) have been used but despite this, even in the most experienced centers the recurrence rate is 1-2% [Devlin 1986, Kennedy 1994].

The conventional (Bassini) oblique incision is used, and the aponeurosis of the external oblique is incised directly over the canal. The lateral flap of the aponeurosis is dissected down to the level of the inguinal ligament, and the ligament completely exposed. The medial flap of the aponeurosis is cleared as close to the midline as possible. Lying on the anterior surface of the cord and running parallel to it, is the ilioinguinal nerve. The nerve is gently freed and retracted behind the hemostat which is used for traction of the edge of the external oblique aponeurosis. Its preservation is vital to obviate anesthesia or severe neuritic pain. The next step is the elevation of the cord.
Fig. 1
Paramedial sagittal view of the inguinal region. A, skin; B, subcutaneous fat; C, external oblique aponeurosis; D, internal oblique muscle; E, transversus abdominis aponeurosis; F, transversalis fascia; G, mesh; H, spermatic cord; J, inguinal ligament (Poupart); L, superior pubic ligament (Cooper); K, peritoneum

Fig. 2
Diagrammatic view of Thovara repair. A, skin; B, subcutaneous fat; C, spermatic cord; D, external oblique aponeurosis; E, mesh; F, internal oblique muscle; G, transversus abdominis aponeurosis; H, transversalis fascia; I, peritoneum

together with its cremasteric covering, from the pubic tubercle. This manoeuvre presents no difficulty. These structures are drawn up with a rubber sling.

The fibers of the cremaster muscle are separated and the hernial sac is exposed. If there is an indirect sac, it is opened, ligated and excised in the classical manner, the threads closing the sac being passed through the transversalis and internal oblique muscles, using the Baker method, and then knotted on the upper face of the internal oblique. A direct sac is simply inverted into the abdomen by means of a single absorbable purse-string suture. When the defect is greater than 2.5 cm in diameter, a plug consisting of a rolled mesh of PTFE measuring 10 cm x 2 cm x 2 mm is used. The transversalis fascia is sutured over the plug with a single stitch (CV-O suture Gore-Tex®).

The anterior aspect of the cremaster muscle is reconstructed by a continuous absorbable suture. We should stress that the inferior and posterior cremaster bundle with the cremasteric artery and the genital branch of the genitofemoral nerve, are left untouched.

The transversalis fascia is not opened. To repair and strengthen this layer (whose weakness plays a very important role in the etiology of groin hernias) a sheet of prosthetic mesh (e-PTFE) measuring 10 x 5 cm is used. The lower edge of the mesh is attached by a continuous CV-o suture which firmly attaches it to the peritoneum of the pubic tubercle and to the lacunar ligament, then run laterally along the inguinal ligament beyond the internal ring. The upper edge of the mesh is secured, by a similar continuous suture, to the rectus sheath and the so called conjoint tendon and internal oblique muscle (Fig. 1). A slit in the mesh allows the spermatic cord to emerge. Using Kirschner's technique [Kirschner 1963], the spermatic cord covered by the cremaster muscle is gently displaced above the internal ring. The opening for the cord must be at least the width of the little finger, so as to avoid constriction of the vessels and subsequent testicular edema.

The external oblique aponeurosis is then sutured above the prosthetic mesh using interrupted PTFE stitches. Once more, the cord is held laterally and upwards and placed subcutaneously using the Kirschner technique. After instillation of antibiotics, the subcutaneous tissue is sutured with absorbable 000 stitches. The skin is closed with staples (Fig. 2).

The same technique is used for recurrent hernias, though sometimes a layer mesh may be required.

**Perioperative measures**

Antibiotic prophylaxis using a third generation cephalosporin is given routinely and patients over 40 years old are anticoagulated.

Epidural anesthesia was used in 79% of our patients; 18% were operated on under local anesthesia and 3% under general anesthesia.

Patients are normally discharged 1-3 days after the operation.