

TREATMENT OF INGUINAL HERNIAS WITH SYNTHETIC GLUE ACCORDING TO LICHTENSTEIN TECHNIQUE (IFABOND™)

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The LICHTENSTEIN technique is used in the treatment of inguinal hernias and consists of positioning a *prosthetic reinforcement on the posterior wall of the inguinal canal*. It is a reproducible and reliable technique and does not present visceral or vascular risk, unlike retroperitoneal techniques. It can be performed under local anaesthesia and is perfectly suitable as an outpatient procedure. The reliability of the technique is excellent (1% recurrence within 10 years)⁽¹⁾, but the absence of reinforcement of the entire myopectineal orifice may lead to the secondary development of a femoral hernia. However, the technique is often associated with chronic inguinal pain (30% within 1 year, of which 6% led to disabling discomfort)^(2, 3, 4), the onset of which brought about trauma of the iliohypogastric or ilioinguinal nerves, either from surgery or attachment of the plate in parietal anchoring (suture thread or staples)^(5, 6, 7). Deliberate sectioning of these nerves is recommended by certain authors to prevent this type of pain⁽⁸⁾.



Preparation of the IFABOND™ glue.

The objective of this paper is to underline the advantage of using woven 3D prosthetic reinforcement together with a synthetic cyanoacrylate adhesive (IFABOND™, Fimed SAS) which ensures a quick, reliable and straightforward fixation, without biological or infectious risk to the patient, which also maintains the expandable properties of the reinforcement in keeping with the «tension-free» concept of the technique.

SURGICAL PROCEDURE AND FIXATION

The oval-shaped prosthetic reinforcement has an upper longitudinal strip covered with an external flap.

Three absorbable sutures fix the prosthesis to the pubic tubercle without burdening the periosteum and inguinal ligament. No other suture or staple is used.

The ready-to-use glue is available with the prosthesis as part of a kit or separately. A 1 ml syringe fitted with an 18 G metal needle is filled with the glue.

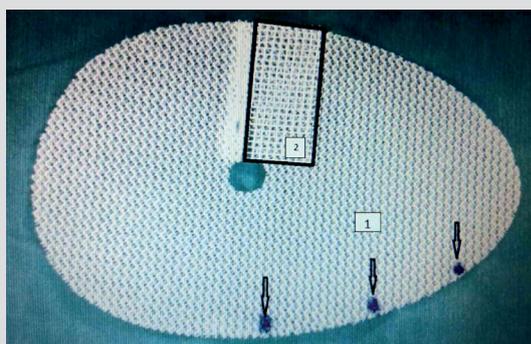
During application, polymerisation occurs in less than one minute, which ensures a reliable fixation. A continuous line of glue is applied along the inguinal ligament and up to the pubic tubercle.

The reinforcement extends inside the pubic insertion of the rectus abdominis muscle to which it is applied with drops of glue.

The external edge of the internal flap of tissue is glued in a continuous line to the musculofascial plane and is pushed outside the spermatic cord.

The external flap of tissue is applied to the internal oblique plane with drops of glue.

The flap descends behind the spermatic cord which is, in turn, glued to the free edge of the inguinal ligament, accentuating the staggered path of the spermatic elements in the inguinal canal, between the deep and superficial inguinal ring. The aponeurosis of the external oblique muscle is sutured in front of the spermatic elements.



Pre-split strip
1: anchoring sutures; 2: external flap (for a right inguinal hernia)



Gluing the pubic tubercle and inguinal ligament (right inguinal hernia)

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MATERIAL AND METHOD

From February 2010 to December 2012, open repair surgery was performed for 324 inguinal hernias in 257 patients.

Apart from performing a simple suture on a young female patient, repair was prosthetic in 323 cases (99.7%), of which 311 were LICHTENSTEIN (96.3%) and 12 preperitoneal reinforcement (10 according to RIVES at 3.1%, 2 according to STOPPA at 0.6%).

Since March 2011, the procedure has been consistently offered as outpatient surgery, whether uni- or bilateral.

Since then, outpatient surgery has accounted for 82% of cases, amongst which no patients have been fully hospitalised or rehospitalised.

General anaesthesia was performed in 78% of cases and locoregional in 22% of cases.

Infiltration of the muscular wall was carried out under long-acting local anaesthesia (NAROPEINE 7.5 mg) at the end of the procedure (10 ml per surgical site). Patients were allowed to stand up 2 hours after surgery.

Analgaesic and anti-inflammatory treatment was prescribed.

Physical rest was recommended for 10 days.

Return to physical activity, including sport, was allowed after that period.

Systematic review was carried out at 1 month.

RESULTS

Eleven patients (3.4%) presented post-operative pain (paresthesia, funicular or spermatic pain) that was considered disabling, as it was not relieved by the prescribed treatment. Nine regressed at 1 month without affecting their return to sport and professional activities. Two continued beyond a month, of which one case was associated with testicular hypotrophy. One patient presented long-lasting pain in the form of suprapubic hyperalgesia.

One patient undergoing bilateral repair presented acute unilateral pain of the funicular topography with no anomalies on echographic examination, and totally regressed in 10 days.

Return to physical activity appeared significantly easier, which was probably linked to the expandable woven 3D prosthetic reinforcement and to the absence of parietal traction caused by the sutures commonly used to fix the prosthesis to the muscular plane. One young male patient, an elite sportsman, returned to training 10 days after surgery, 2 weeks less than a contralateral repair performed 3 years earlier using the same technique and a non-woven polypropylene reinforcement fixed with absorbable sutures.

CONCLUSION

The combination of an expandable woven prosthesis and fixation along the parietal planes by means of highly purified synthetic glue (IFABOND™) remained in line with the «tension-free» characteristic of inguinal hernia repair in adults according to the LICHTENSTEIN technique.

The IFABOND™ glue allowed a quick and safe fixation, without biological risk to the patient. Glue is a reliable alternative to commonly used sutures and staples.

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