

# Highlights from the International Guidelines for Groin Hernia Management

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The International Guidelines for Groin Hernia Management has been formulated by an expert group of international surgeons, the HerniaSurge Group. This group came from all continents representing all five Hernia Societies [European Hernia Society (EHS), Americas Hernia Society, Asia Pacific Hernia Society, Australasian Hernia Society and Africa-Middle East Hernia Society], International Endohernia Society and European Association for Endoscopic Surgery. The goal for these guidelines is to standardize care, improve patient outcomes and to minimize complications.

The HerniaSurge Group received Evidence-Based Medicine (EBM) training and formulated 166 key questions (KQ) during the first meeting. EMB rules were used in complete literature searches, including a complete search by the Dutch Cochrane database for level I publications.

Teams of two to three scored the articles according to Oxford, SIGN and Grade methodologies. Results were discussed with the entire working group members during five 2-day meetings leading to 136 statements and 88 recommendations. Recommendations were then graded as “strong” (recommendations) or “weak” (suggestions) by consensus. Some cases were upgraded. The AGREE II instrument was used to validate the guidelines. Three international external experts reviewed the guidelines and recommended with high scores.

The following are highlights from the Guidelines:

## Risk factors for the development of inguinal hernia in adults

Several risk factors for Inguinal Hernia and Recurrent

Inguinal Hernia are identified but not comparable. These factors include intrinsic, acquired, surgical and preoperative risk factors and are strongly recommended to be considered as they are modifiable and influence the type of repair (evidence: low; recommendation: strong upgraded).

## Diagnostic testing modalities

Clinical examination alone is recommended for confirming the diagnosis of an evident groin hernia (evidence: low; recommendation: strong upgraded).

If diagnosis is in doubt, Ultrasound, dynamic MRI or CT scan may be needed but rarely (evidence: moderate; recommendation: strong upgraded).

## Groin hernia classification

Use of the EHS classification system for inguinal hernias is suggested to stratify Inguinal Hernia patient for tailored treatments, research and audits (evidence: low; recommendation: weak).

## Indications—treatment options

Watchful waiting for asymptomatic or minimally symptomatic male Inguinal Hernias is safe (evidence: high).

Discussions with patients about timing of hernia repair are recommended to involve attention to social environment, occupation and overall health. The lower morbidity of elective surgery has to be weighed against the higher morbidity of emergency surgery (evidence: very low; recommendation: strong upgraded).

## Surgical treatment of inguinal hernia

Mesh repair is strongly recommended as first choice, either by an open or laparoscopic technique (evidence: moderate; recommendation: strong upgraded).

In non-mesh inguinal hernia repair, the Shouldice technique is recommended because of lower recurrence rates as compared to other suture repairs (evidence: moderate; recommendation: strong upgraded).

Lichtenstein technique is recommended for open mesh repair (evidence: low; recommendation: strong upgraded).

Despite the comparable results, PHS and the plug-and-patch repair are not recommended because of the excessive use of foreign material and the need to enter both posterior and anterior plane (evidence: low; recommendation: strong upgraded).

There is insufficient evidence to recommend a pre-peritoneal mesh repair (evidence: very low).

TAPP and TEP have comparable outcomes (evidence: moderate).

Primary bilateral hernias are recommended to be treated by laparo-endoscopic approach if expertise is available (evidence: low; recommendation: strong upgraded).

Surgical treatment should be tailored to the surgeon's expertise, patient and hernia related characteristics, and local resources (evidence: very low; recommendation: strong upgraded).

## Occult hernias and bilateral repair

During TAPP repair, it is recommended to inspect contralateral groin. If contralateral hernia is found and prior informed consent was obtained, repair is recommended (evidence: very low; recommendation: strong upgraded).

## Day surgery

Day surgery is recommended for majority of groin hernia patients (evidence: moderate; recommendation: strong).

## Mesh and fixation

Light-weight mesh may have some short-term benefits, but are not associated with better long-term outcomes (evidence: low).

Atraumatic mesh fixation is suggested for open repair techniques (evidence: very low; recommendation: weak).

While mesh fixation in TEP is unnecessary (evidence:

low), in both TEP and TAPP it is strongly recommended to fix mesh in large medial hernias (M3-EHS classification) (evidence: very low; recommendation: strong upgraded).

## Antibiotic prophylaxis

In laparo-endoscopic repair, antibiotic prophylaxis is not recommended (evidence: low; recommendation: strong upgraded).

In open mesh repair, antibiotic prophylaxis is not recommended in average to low risk environment (evidence: high; recommendation: strong).

## Anesthesia

Local anesthesia is recommended for open repair of reducible inguinal hernia if surgeons are experienced in local anesthesia (evidence: high; recommendation: strong).

General or local anesthesia is suggested over regional anesthesia in patients aged 65 or older (evidence: low; recommendation: weak).

## Early postoperative pain prevention and management

Field blocks of the inguinal nerves and/or subfascial/subcutaneous infiltration are recommended in all open groin hernia repairs (evidence: high; recommendation: strong).

## Convalescence

Physical activity after uncomplicated inguinal hernia repair does not affect recurrence rates. Patients should be encouraged to resume normal activities as soon as possible (evidence: low; recommendation: strong upgraded).

## Groin hernias in women

Women with groin hernias are strongly recommended to undergo laparoscopic repair with pre peritoneal mesh implantation, provided that expertise is available (evidence: moderate; recommendation: strong upgraded).

## Femoral hernias

Mesh is strongly recommended to be used in elective femoral hernia repairs (evidence: low; recommendation:

strong upgraded).

### **Pain—prevention and treatment**

Nerve anatomy awareness and recognition during surgery is recommended to reduce the incidence of Chronic post-herniorrhaphy pain (evidence: low; recommendation: strong upgraded).

Prophylactic ilioinguinal nerve resection is not suggested since it does not reduce chronic pain but increases the incidence of sensory loss (evidence: low; recommendation: weak).

If iatrogenic nerve injury occurs or if the nerve interferes with mesh position, Resection of ilioinguinal nerve and/or iliohypogastric nerve is suggested (evidence: low; recommendation: strong upgraded).

Immediate severe excruciating postoperative pain indicates the possibility of vascular or nerve injury. Early re-operation is suggested to exclude or manage these complications (evidence: very low; recommendation: weak).

A multidisciplinary team is suggested to manage chronic pain patients. Pharmacologic and interventional measures, including diagnostic and therapeutic nerve blocks, should continue for a minimum of 3 months for chronic postoperative pain (evidence: low; recommendation: weak).

### **Recurrent inguinal hernias**

Laparo-endoscopic recurrent inguinal hernia repair is strongly recommended after failed anterior tissue or Lichtenstein repair (evidence: moderate; recommendation: strong).

Anterior repair is recommended after a failed posterior repair (evidence: moderate; recommendation: strong).

An expert hernia surgeon should repair a recurrent Inguinal Hernia after failed anterior and posterior repair. Choice of technique depends on patient and surgeon specific factors (evidence: low; recommendation: strong upgraded).

### **Emergency/groin hernia treatment**

Monofilament large pore polypropylene mesh based repair is suggested in emergent groin hernia surgery with a clean or clean-contaminated surgical field (evidence: low; recommendation: weak).

### **Training and learning curve**

Average learning curves for TAPP and TEP repair are similar (evidence: low).

A goal-directed curriculum including review of anatomy, procedure steps, intraoperative decision making and proficiency based, simulation enhanced technical skills training should be available to trainees whenever possible (evidence: moderate; recommendation: strong).

Supervision of trainees should be provided until they have reached safe proficiency levels. This averages around 60 procedures for open and 100 procedures for laparo-endoscopic hernia repair for novices (evidence: moderate; recommendation: strong).

### **Costs**

Day-case laparoscopic inguinal hernia repair with minimal use of disposables is recommended to be most cost-effective (evidence: moderate; recommendation: strong).

### **Groin hernia registries**

Countries or regions should develop and implement registries for groin hernia patients (evidence: low; recommendation: weak).

### **Dissemination and implementation**

HerniaSurge recommends that all countries or regions develop a guidelines dissemination and implementation strategy. HerniaSurge offers support for this process (evidence: very low; recommendation: strong).

### **Low resource settings**

Low resource settings should focus teaching the performance of high volume inguinal hernia repair by a standardized technique, Lichtenstein, under local anesthesia preferably using a low-cost mesh (evidence: low; recommendation: weak).

### **Conclusions**

The HerniaSurge Group has developed these extensive and inclusive guidelines for the management of adult groin hernia patients. It is hoped that they will lead to

better outcomes for groin hernia patients wherever they live! More knowledge, better training, national audit and specialization in groin hernia management will standardize care for these patients, lead to more effective and efficient healthcare and provide direction for future research.

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