Inguinal Hernias: Should We Repair?

Kiran Turaga, MBBS, MPH,
Robert J. Fitzgibbons, Jr, MD, FACS*,
Varun Puri, MBBS, MS

Department of Surgery, Creighton University School of Medicine, 601 North 30th Street,
Suite 3700, Omaha, NE 68131, USA

Inguinal herniorrhaphies have a low recurrence rate, which makes them effective at preventing life-threatening complications such as bowel obstruction or strangulation. They can be performed in an outpatient setting under local anesthesia and are associated with an uneventful recovery in most patients. For these reasons, surgeons are taught that all inguinal hernias should be repaired at diagnosis. Many surgeons perceive that bowel obstruction or incarceration with strangulation is associated with an unacceptable mortality. In addition, it is commonly believed that progression of a hernia is inevitable, and that operation becomes more difficult the longer a hernia is left unrepaired. This belief is reflected in recent recommendations by the Society for Surgery of the Alimentary Tract concerning hernia management [1] (Box 1). This attitude is also reflected by the fact that the incidence of inguinal herniorrhaphy is much higher in the United States than other countries. For example, 2800 herniorrhaphies per 1 million population are performed per year in the United States compared with 1000 per million in the United Kingdom [2].

The socioeconomic implications of this thinking are significant. Inguinal hernias are one of the most common afflictions of adults, especially men [3]. Approximately 770,000 inguinal herniorrhaphies are performed in the United States each year [4–7]. This procedure was the most common surgical operation performed by general surgeons in the United States in 1991 according to data from the National Center for Health Statistics [8]. The results are large direct costs for the surgical procedure and significant indirect costs because of time away from normal activities. The costs would even be greater if the large number of patients per annum who choose not to have their inguinal hernias repaired heeded their surgeon’s recommendation [9].

* Corresponding author.
E-mail address: fitzjr@creighton.edu (R.J. Fitzgibbons, Jr).
The purpose of this review is to examine available data concerning the natural history of treated and untreated inguinal hernias. The incidence of complications with either treatment strategy is discussed using historical information from a time before herniorrhaphy became routine and contemporary data from two recently completed randomized controlled trials comparing routine repair using a tension-free technique with watchful waiting.

**Natural history**

The natural history of an untreated inguinal hernia is poorly understood, and until recently there were almost no contemporary data available. Published figures are based more on speculation than on scientific facts given the difficulty in finding whole groups of populations in whom no one has a hernia repaired so that a proper population-based study to determine the risk rate can be done. The most important question is the incidence of the potentially life-threatening complication of a hernia accident defined as either bowel obstruction or strangulation. Hair and colleagues [10] looked at a consecutive series of 699 patients admitted to two university departments of surgery for scheduled operations for an inguinal hernia. The median duration a patient had a hernia before presentation was only 7 months; however, 206 patients (29%) had their hernia for between 1 and 5 years, and 61 (8.8%) had their hernia for 5 years or longer. The delay allowed the calculation of Kaplan-Meier estimates to determine the cumulative probability of pain or irreducibility. The probability of a hernia becoming painful rose to 90% by 10 years; however, leisure activity was affected in only 29%, and only 13% of the employed patients had to take time off from work because of hernia-related symptoms. The cumulative probability of irreducibility increased from 6.5% at 12 months to 30% at 10 years; however, only ten of the patients required an emergency operation, and only two had infarcted hernial contents that required resection. The findings would seem to imply that the effects of delay had minimal clinical significance in this series of hernia patients. Gallegos looked at a group of patients and determined that the cumulative probability of strangulation was 2.8% at 3 months and 4.5% at

---

**Box 1. Recommendations of the Society of Surgery for the Alimentary Tract regarding hernia management**

1. Repair of almost all groin hernias is recommended.
2. Inguinal hernias should be repaired because they enlarge over time, leading to a more difficult repair and higher risk of complications or recurrence.
3. Patients with groin hernias should undergo surgical evaluation within a month after detection.
21 months [11]. Both of these studies as well as similar ones in the literature must be interpreted cautiously because of the selection bias caused by the fact that these patients choose to attend the researchers’ clinics rather than being selected randomly.

Neuhauser found two groups of patients who were better suited for this analysis because they avoided some of the confounding variables, allowing a better estimation of the actual risk of a hernia complication. The first group consisted of 8633 patients enrolled in Paul Berger’s truss clinic in Paris which was described in an 1896 publication [12]. This group was an important database for a study of natural history because Bassini’s method had yet to be widely adopted, and elective herniorrhaphy was rarely done. Fortunately, Berger kept records on his truss patients and enumerated untoward events. There were a total of 242 bowel obstruction or strangulation accidents that translated into a yearly risk of 0.0037. Neuhauser’s second group came from Cali, Colombia. Data on this group are available for 1 year (1965–1966) owing to a government initiative to aggressively examine a stratified random sample of its civilian population to determine the frequency of common conditions such as inguinal hernia. By reviewing records years later from the hospitals in the city of Cali where the population was required to be cared for, the probability of bowel obstruction or strangulation was found to be 0.0038 per year. Using the average of these two probabilities, the lifetime risk for bowel obstruction or strangulation for an 18-year-old man has been calculated using life-table analysis. Table 1 shows this probability using 1980 and 2001 life tables [13]. An often quoted publication (including the study by O’Dwyer and colleagues discussed later) from our group states that the lifetime risk for an 18-year-old man is 0.272% or 1/368 patients and for a 75-year-old 0.034% or 1/2941. This estimate was subsequently retracted because it was based on erroneous methodology [12]. The risk for bowel obstruction and strangulation is less than previously appreciated, and the mortality associated with such a major complication is probably lower than the 10% to 20% risk often quoted in older text books (Table 2).

To address this question, Neuhauser looked at Medicare discharge data on 84,995 patients from 1971, specifically examining the International

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>1/5.18</td>
<td>1/4.95</td>
<td>1/5.49</td>
<td>1/5.15</td>
<td>1/5.4</td>
<td>1/5.13</td>
</tr>
<tr>
<td>72</td>
<td>1/22.72</td>
<td>1/20.41</td>
<td>1/27.03</td>
<td>1/22.73</td>
<td>1/25.64</td>
<td>1/22.22</td>
</tr>
</tbody>
</table>

All values expressed as “one accident per x number of patients,” where x is the value shown in the table.
Classification of Disease (ICD) code 550 (inguinal hernia without obstruction) and code 552 (inguinal hernia with obstruction). He found the mortality rate at operation to be 5 per 1000 in patients without obstruction and 46.9 per 1000 in patients with obstruction, respectively [14]. In Hair’s study of 699 inguinal herniorrhaphies, only 10 emergency operations were performed of which two had infarcted material that required resection. There were no deaths or serious complications in any of the patients. One of the obvious reasons for the improvement in the mortality from major hernia-related complications is better postoperative care compared with that in the early part of the twentieth century. Furthermore, access to such care is much more rapid, with almost anyone experiencing a complication having the possibility of emergency treatment within hours.

Randomized control trials

Two randomized controlled trials have recently been published that were designed to test the hypothesis that a strategy of watchful waiting is an acceptable alternative to routine operation in men with asymptomatic inguinal hernias [15,16]. The design provides valuable information about natural history. In both studies the incidence of hernia accident was acceptably low.

In the first study sponsored by the American College of Surgeons and published by the Fitzgibbon’s group, 720 men with inguinal hernias who did not have pain limiting usual activities and did not have new difficulty reducing their hernias within 6 weeks of screening were randomized to watchful waiting or a Lichtenstein tension-free repair using mesh. All of the men were followed up for at least 2 years, and some were observed for as long as 4.5 years depending on the date of enrollment, averaging 3.2 years. Follow-up was complete in approximately 90% of patients.

The primary outcomes were (1) pain or discomfort interfering with usual activities 2 years after enrollment, and (2) a change in the Physical Component Score (PCS) of the Short Form-36 Version 2 (SF-36V2) health-related quality of life survey from baseline at 2 years. Pain interfering with activities was defined as the selection of a level 3 or 4 response to questions with these choices: (1) no pain or discomfort due to the hernia or hernia operation; (2) mild pain that does not interfere with activities; (3) moderate pain; or (4)

<table>
<thead>
<tr>
<th>Study</th>
<th>Mortality rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beller and Colp (1926)</td>
<td>0.109</td>
</tr>
<tr>
<td>Frankau (1931)</td>
<td>0.197</td>
</tr>
<tr>
<td>Guillen and Aldrete (1970)</td>
<td>0.132</td>
</tr>
<tr>
<td>Anderson and Ostberg (1972)</td>
<td>0.138</td>
</tr>
</tbody>
</table>
severe levels of pain that interfere with usual activities. These variables were measured at baseline and at the 6-month and annual visits.

Postoperative complications after a tension-free repair were assessed at the 2-week visit and as needed for 3 months. Long-term complications, including hernia recurrence, were assessed at the 6-month and annual visits [17]. Life-threatening complications were defined before the start of the study and were assessed up to 30 days after the tension-free technique.

Secondary outcomes included complications and patient-reported outcomes of pain, functional status, activity levels, and satisfaction with care. These outcomes were assessed at baseline, 6 months, and annually. Pain was also assessed at the time of crossover in watchful waiting patients who underwent the tension-free technique. Four 150-mm visual analogue surgical pain scales (SPS) were used to assess sensory and emotional aspects of hernia-related pain [18,19]. Functional status was evaluated using the SF-36V2 questionnaire and an activities assessment scale developed and validated specifically for this trial and a companion study comparing the tension-free technique with laparoscopic herniorrhaphy [20–23]. Satisfaction with care was assessed using 5-point Likert scales.

In the intention-to-treat analysis, no significant difference was found in pain limiting usual activities or the PCS of the SF-36 quality of life measurement tool at 2 years after randomization. The SPS and activities assessments were also similar between the groups. A substantial number of men crossed over to the other treatment. At the 2-year point from enrollment, nearly one quarter of the men assigned to watchful waiting requested and received an operation, most commonly because of increasing pain, whereas 17% of the men assigned to operation for a variety of reasons never had an operation and were followed with watchful waiting. The as-treated analysis was not substantially different from the intention-to-treat analysis except for the fact that patients who crossed over reported a much improved PCS of the SF-36V2.

Contrary to popular belief, there did not appear to be a penalty for delaying operation when the delayed patients were compared with the immediate operation group. The two groups were similar at baseline with respect to age, American Society of Anesthesiology (ASA) classification, preexisting conditions, hernia type, and hernia characteristics. No statistically significant differences were found between the patients in operative time, complications, recurrence rates, and satisfaction with the results of the operation. Multivariate analyses found no relation between the duration until hernia repair and operative time, the incidence of complications, long-term pain, or functional status [24].

Differences in baseline characteristics may have predicted the men who crossed over. Men who were assigned to operation and who refused seemed not as fit as those who remained in the operation group. Men who crossed over from watchful waiting to operation had more SPS-measured pain (pain when performing certain activities such as work or exercise) and perceived
more unpleasantness from their pain at enrollment than those remaining in watchful waiting. Operation was remarkably effective in improving pain and the ability to undertake activities, although both intention-to-treat groups improved somewhat during the course of the study (Fig. 1).

By the end of the trial with a maximum follow-up of 4.5 years and an average of 3.2 years, the crossover rate from watchful waiting to operation had risen to one third. Recurrent hernias occurred in five patients or 1.5%. Only 2% of patients sustained long-term post herniorrhaphy pain, a rate lower than expected. Two patients experienced an acute hernia incarceration over the 5 years of the study. One was successfully reduced and repaired electively; the other required an emergency procedure and return to the operating room for hematoma evacuation. Strangulation was not present in either patient, and recovery was uneventful. These results translate into a hernia accident rate of less than 2 events per 1000 patients per year or about 0.002% per year.

**Observation or operation for patients with an asymptomatic inguinal hernia**

A second trial performed in Glasgow in the United Kingdom also addressed the question of watchful waiting for minimally symptomatic hernias. The study was restricted to males over the age of 55 years with an asymptomatic inguinal hernia with a visible bulge. Pain scores were measured with a Visual Analogue Scale (VAS), and the SF-36 was used to measure the general health status. Follow-up for the asymptomatic patients was at 6 months, a year, and then annually afterward.

![Fig. 1. Pain interfering with activities: group differences at 2 years in the Fitzgibbons study. Reference group for intention-to-treat is tension-free repair (score = 0); reference group for as-treated is patients randomized to and received tension-free repair (score = 0). (From Fitzgibbons RJ Jr, Giobbie-Hurder A, Gibbs JO, et al. Watchful waiting vs repair of inguinal hernia in minimally symptomatic men: a randomized clinical trial. JAMA 2006;295(3):285–92; with permission.)](image-url)
The primary outcome of the study was pain measured at 1 year by the VAS. The study was adequately powered for this measurement; however, revised calculations were undertaken due to slow accrual of the study. The percentage of asymptomatic patients who were expected to develop pain was changed from 15% to 20%, which allowed the study a power of 80%.

The study recruited 160 patients with 80 in each arm. Patients who refused surgery were excluded from the study. The mean waiting period for surgery was 103 ± 97 days in the group who underwent surgery. At baseline, the patients who underwent surgery had somewhat worse general health status as measured by the SF-36, but this difference was not statistically significant. Interestingly, the pain scores between the two groups were comparable at 6 months and 12 months in the study, with no statistical significance. Among the patients who were in the observation group, 44% recorded pain at rest at 6 months which decreased to 28% at 1 year without any interventions recorded. The mean duration of the hernias before enrollment in the study was 3.04 years (2.58 years, standard deviation). There was a trend toward improvement in the SF-36 general health status and its components in the patients who underwent surgery, which was consistent in both the “treatment-received” analysis and the “intention-to-treat” analysis, but there was no statistical significance.

Twenty three patients (28.7%) crossed over from the watchful waiting to the surgery group for a variety of reasons including pain (n = 11) and an increase in size of the hernia (n = 8). A Cox proportional hazards regression model to study the influence of baseline characteristics on crossover indicated that the degree of protrusion was the only predictive factor. Three patients in the observation group were reported to have serious adverse events, whereas none were noted in the operative group, causing the researchers to conclude that early operation “may reduce serious morbidity”; however, one could argue whether these were truly adverse events of an observation strategy. One of the three patients presented with an acute incarceration which was reduced and then repaired electively. The reader must make his or her own conclusion as to whether this should be considered a complication of observation or simply a demonstration that even acute incarceration does not detract from the watchful waiting strategy because, even in the acute setting, the situation can sometimes be corrected without emergency operation. The other two serious adverse events were cardiovascular, consisting of a cerebral vascular accident in one patient and a fatal myocardial infarction in another after they crossed over from watchful waiting to the tension-free technique. The researchers stated that the medical conditions in these patients deteriorated over the observation period and suggested that if they had been operated sooner, they may not have suffered these complications. The actual length of time the patients were observed was not provided nor were any details of the medical deterioration. One could just as easily argue that the patients were given a reprieve corresponding to the length of the observation period. This group was older and therefore
sicker, supported by the fact that nine patients (four in the observation group and five in the operation group) died during the relatively short median follow-up of 574 days, 6 from cardiovascular disease and 3 from cancer.

**Differences between the two trials**

There are some important differences between the two randomized controlled trials. The Fitzgibbons study was a multicenter trial conducted at five community and academic centers, whereas the O’Dwyer study was performed at a single hospital that was a tertiary facility for hernia surgery. The duration of follow-up was significantly longer in the Fitzgibbons study, with a median follow-up of 3.2 years compared with 1 year in the O’Dwyer study. The age of inclusion was also different in the two studies. The Fitzgibbons study included patients of all ages 18 years and over, whereas the O’Dwyer study enrolled only patients aged 55 years or older. This difference resulted in a higher overall mortality rate; nine patients died by the time the follow-up was completed (five in the surgery group and four in the observation group). The Fitzgibbons study should be considered more representative of the entire adult population because the O’Dwyer study included only older men.

The study outcome of pain was assessed using a VAS at 1 year in the O’Dwyer study and at 2 years in Fitzgibbons trial. This measure was not different between the two groups over time in either of the studies; however, the single most common reason for crossover from the observation to the surgery group was increasing pain. The change in quality of life seen in the O’Dwyer study was not similarly demonstrated in the Fitzgibbons trial, which had a longer follow-up. The individual component scores did not show a significant improvement even in the O’Dwyer study, and only the change in general health at 12 months had statistical significance (mean difference, 7.0 (95% CI, 0.2–13.7); \( P = .045 \)). The differences at longer periods of follow-up were not reported, but it is possible that this difference may narrow between the two groups at longer follow-up as suggested by the Fitzgibbons study.

The study power was estimated at 90% to detect a difference of 10% between the two groups in the Fitzgibbons study, whereas the O’Dwyer study used a power estimate of 80% based on a difference of 15% which was later re-adjusted to 20% based on slow accrual. In addition, perceptions of quality of life may be different across different societies, and these transcontinental differences may have a role in the outcome measures recorded.

Over 40% of the study population in the clinical trial performed by Fitzgibbons and colleagues (2006) had the diagnosis of a hernia based on a cough impulse only. In contrast, O’Dwyer and colleagues (2006) only included patients if there was a visible swelling on standing. This difference may contribute to the improved health-related quality of life in the
operation group at 12 months in the O’Dwyer study, which may not have been as evident in the Fitzgibbons study because many of the subjects had occult hernias. This difference also is the most likely explanation for the higher rate of crossover from observation to operation in the O’Dwyer study. Patients with chronically incarcerated hernias at baseline were excluded in the O’Dwyer trial but allowed by Fitzgibbons.

The 22% incidence of complications in the tension-free group in the Fitzgibbons trial was similar to what has previously been published in the literature. These complications included wound hematomas (6.1%), scrotal hematomas (4.5%), and wound infections (1.8%) among others. The O’Dwyer study did not note any significant postoperative complications, which may be a function of the excellent results of this specialized hernia center and not representative of the results across many centers or in a population-based setting, eliminating some of the loss of quality of life characteristics after surgery (Table 3).

Economic analysis of the O’Dwyer study showed that the cost to the health service was £401.9 ($806) higher for the surgical group at a follow-up of over 1 year. There were no significant quality of life gains between the two groups. The Fitzgibbons study similarly demonstrated an increased cost of $1831 for patients with surgery; however, it determined that the cost per quality-adjusted life year gained from assignment to the surgical treatment group was $57,679 (95% CI, $1358–$322,765). This cost is generally considered a reasonable cutoff for a publicly funded medical procedure; hence, both watchful waiting and surgery appear to be equally cost-effective measures from an economic standpoint.

Although it is true that inguinal hernias will progress over time to incarceration, this does not seem to be associated with an appreciable increase in morbidity or mortality or even emergency surgery. The concern that a hernia may be more difficult to repair the longer it goes untreated was an issue when tissue repairs were popular, because the integrity of the musculofascial elements of the patient’s groin were crucial to a successful operation. This concern has now largely been eliminated with the widespread adoption of the tension-free prosthetic approach with a recurrence rate of less than 1% regardless of the stage of the hernia.

The appreciation that the complication rate for an inguinal herniorrhaphy is more significant than surgeons would have expected has led to some rethinking. Poobalan and colleagues [25] published a critical review of inguinal herniorrhaphy studies between 1987 and 2000. The frequency of at least some long-term groin pain was as high as 53% at 1 year (range, 0%–53%). How much good do we do for a completely asymptomatic patient who undergoes a “successful” inguinal herniorrhaphy but ends up with lifestyle changes due to chronic groin pain (success meaning the lack of recurrence)? Despite popular wisdom to the contrary, it may be that patients with inguinal hernias can safely delay surgical treatment in favor of careful watchful waiting as the method of management for their hernia.
Table 3
Comparison of the Fitzgibbons and O’Dwyer studies based on baseline characteristics and study outcomes

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Fitzgibbons, et al, 2 year follow-up</th>
<th>Operation</th>
<th>P value</th>
<th>O’Dwyer, et al, 1 year follow-up</th>
<th>Observation</th>
<th>Operation</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients</td>
<td>354</td>
<td>356</td>
<td></td>
<td>80</td>
<td>80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean age (years)</td>
<td>57.5</td>
<td>57.5</td>
<td></td>
<td>71.9</td>
<td>70.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Follow-up (%)</td>
<td>94.2</td>
<td>92.1</td>
<td></td>
<td>93.8</td>
<td>98.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crossover</td>
<td>85/364 (23%)</td>
<td>62/356 (17%)</td>
<td></td>
<td>15/80 (19%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reasons for crossover</td>
<td>86% Pain/ discomfort</td>
<td>Not stated</td>
<td></td>
<td>Pain and increase in hernia size</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>47% Pain interfering with activity</td>
<td></td>
<td></td>
<td>Increase in hernia size affecting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>at crossover</td>
<td></td>
<td></td>
<td>work/leisure activities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Acute hernia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcome of pain</td>
<td>Pain interfering with activities,</td>
<td></td>
<td></td>
<td>Pain interfering with activities,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.2%</td>
<td>P = NS</td>
<td></td>
<td>100-mm VAS</td>
<td>5.2 mm</td>
<td>P = NS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>−6.2 mm</td>
<td>P = NS</td>
<td></td>
<td>At rest, 3.7 mm</td>
<td>5.7 mm</td>
<td>P = NS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reduction in perception of pain</td>
<td></td>
<td></td>
<td>On movement, 7.6 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>unpleasantness on 150-mm VAS,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>−2.3 mm</td>
<td>P = .01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcome SF-36</td>
<td>Change from baseline PCS,</td>
<td></td>
<td></td>
<td>Perceived change in health</td>
<td>8.5 points</td>
<td>P = .045</td>
<td></td>
</tr>
<tr>
<td></td>
<td>improvement by 0.29 points of 100</td>
<td>P = NS</td>
<td></td>
<td>compared with previous</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12 months, −0.3 points</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>All other components SF-36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>One acute incarceration 4 months</td>
<td></td>
<td></td>
<td>One acute hernia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>after enrolment, −0.3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>at 2 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>One acute incarceration and bowel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>obstruction at 4 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Abbreviations: PCS, Physical Component Score of the Short Form-36, Version 2 Questionnaire; SF-36, Short Form-36 Quality of Life Questionnaire; VAS, Visual Analogue Scale.

Although the question is moot in the symptomatic patient because the indication for surgery is discomfort and not the prevention of complications, what about the patient with either an asymptomatic or minimally symptomatic hernia?

The data confirm that a strategy of watchful waiting is a safe and acceptable option for men with minimally symptomatic (or asymptomatic) inguinal hernias. Hernia accidents occur rarely and can be treated with anticipation of a good outcome. Deferring an operation until symptoms worsen carries no penalty of increased complications and can be recommended. In specialized centers with good outcomes, operating on asymptomatic hernias may improve quality of life.

References


