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Hernioplasty Techniques: Comparison between Lichtenstein and McVay

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ABSTRACT

Introduction: Inguinal hernioplasty is one of the most commonly performed surgical procedures worldwide, and is essential for the treatment of primary and recurrent inguinal hernias. The Lichtenstein and McVay techniques are widely used, each with distinct advantages and challenges. While Lichtenstein employs a polypropylene mesh to reinforce the abdominal wall, McVay relies on fixation of the transversalis fascia to Cooper's ligament without the use of mesh.

Methodology: A literature review of studies published in scientific databases, including SciELO Brazil, PubMed and specialized medical journals, was conducted. Articles that compared the Lichtenstein and McVay techniques were analyzed, considering criteria such as recurrence rate, intensity of postoperative pain, incidence of complications and time to return to normal activities.

Results: Studies indicate that the Lichtenstein technique has a recurrence rate of less than 4%, while the McVay technique can reach 8.5%, especially in patients with significant muscle weakness. Regarding postoperative pain, Lichtenstein has a higher incidence of chronic neuropathic pain due to irritation of the inguinal nerves by the mesh. McVay, on the other hand, can generate more intense initial discomfort due to tension on the suture. Recovery time also varies: patients operated on by Lichtenstein return to activities more quickly than those with the McVay technique.

Discussion: The choice between the Lichtenstein and McVay techniques should consider several patient profiles. Lichtenstein is preferred for cases of primary inguinal hernia and McVay may be indicated for femoral hernias.

Conclusion: Both techniques have advantages and limitations, and an individualized assessment is essential to ensure better clinical outcomes and quality of life for the patient.

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INTRODUCTION

Inguinal hernioplasty is one of the most frequently performed surgical procedures in medical practice, being essential for the treatment of inguinal hernias (IH), which can cause pain, discomfort and serious complications, such as incarceration and strangulation. Over the years, several techniques have been developed to optimize surgical results, reduce recurrence rates and improve postoperative recovery of patients (Alfieri et al., 2011). Among the most commonly used approaches, the Lichtenstein and McVay techniques stand out, both of which have been widely studied and applied in the correction of IH. The Lichtenstein technique is considered the gold standard for tension-free repair, using a polypropylene mesh to reinforce the abdominal wall and minimize the risk of recurrence (Claus et al., 2019). The McVay technique, based on the anatomical reconstruction of the inguinal canal, is mainly indicated for direct and femoral hernias, providing a more natural reinforcement of the abdominal wall (AlMarzooqi et al., 2019). The choice between these

techniques depends on several factors, including the type of hernia, the surgeon's experience, and the individual characteristics of the patient. Comparative studies analyze the benefits and limitations of each approach, considering aspects such as recovery time, recurrence rate, postoperative pain, and complications (Guillaumes et al., 2021). Hernia is one of the most common surgical conditions in the world, affecting a significant portion of the population. In Brazil, it is estimated that 20% to 25% of adults may develop some type of abdominal hernia over the course of their lives, with hernia accounting for 75% of cases. In 2024, 349,968 abdominal hernia surgeries were performed by the Sistema Único de Saúde (SUS), of which 323,045 were for inguinal hernia repair (HerniaSurge, 2018).

Globally, inguinal hernia repair is one of the most performed surgeries, with approximately 20 million procedures per year. The recurrence rate varies between 0.5% and 15%, depending on the technique used and the patient's clinical conditions (Chen & Morrison, 2019).

The trend is that the number of cases will continue to grow due to population ageing, increased obesity, and greater access to diagnostics. In Brazil, the demand for inguinal hernia surgeries is expected to remain high, especially in the SUS, where there is a significant queue of patients waiting for procedures (Claus et al., 2019).

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Globally, the projection indicates a gradual increase in the number of surgeries, driven by advances in minimally invasive techniques, such as video laparoscopy, which reduces recovery time and improves clinical outcomes (Chen & Morrison, 2019).

The anatomy of the inguinal canal is complex and includes anatomical structures vital for successful surgical results; anatomical knowledge, appropriate technique, appropriate patient selection, adequate technical equipment and sufficient surgical experience are essential to overcome the risks of complications or challenges. The best surgical approach should be easy to learn, have a low risk of complications, lead to rapid recovery, have acceptable recurrence rates and be cost-effective (HerniaSurge Group, 2018).

The IH is one of the most common surgical conditions, characterized by the protrusion of intra-abdominal structures through the inguinal canal. Its predominance is greater in men, especially those over 50 years of age, due to anatomical factors and genetic predisposition (Lau, 2002). In Brazil, studies indicate that approximately 20% to 25% of adults may develop some type of abdominal hernia over the course of their lives, with IH accounting for 75% of cases (Öberg et al., 2020).

The diagnosis of IH is made mainly through a clinical examination, in which the doctor assesses the presence of a bulge in the groin region. During the consultation, the patient may be asked to cough or strain their abdomen, as this can make the hernia more evident. In cases where the physical examination is not sufficient to confirm the diagnosis, imaging tests may be indicated, such as Ultrasound, used to visualize the hernia and differentiate it from other conditions, such as enlarged lymph nodes or tumours, CT scan, recommended in more complex cases, especially when there is suspicion of an incarcerated or strangulated hernia (van Veenendaal et al., 2020).

Lichtenstein technique

The Lichtenstein technique is a widely used approach for inguinal hernioplasty and is considered the gold standard for the repair of primary inguinal hernias (Messias et al., 2023). This technique is based on the concept of tension-free repair, using a polypropylene mesh to reinforce the posterior wall of the inguinal canal and reduce the recurrence rate (Messias et al., 2023).

The Lichtenstein tension-free technique was introduced in 1984 by Dr. Irving Lichtenstein, who aimed to eliminate the adverse effects of suture tension observed using previous techniques. Understanding the metabolic origin of IH (i.e., dysfunction of collagen metabolism and type 1/type 3 collagen ratio) is fundamental to the development of this technique (Hori, & Yasukawa, 2021, Lichtenstein, 1987). The Lichtenstein technique involves the placement of a polypropylene mesh between the groin floor and the external oblique muscle (EOM) aponeurosis. This mesh eliminates the need for tension sutures and the use of compromised tissue to repair the IH. Increased intra-abdominal pressure during exertion leads to contraction of the EOM, which exerts counterpressure on the mesh, thus effectively utilizing intra-abdominal pressure for repair (Lau, 2002). The surgical results of this technique have proven to be highly promising, with a recurrence rate of less than 1% (Lichtenstein, 1987).

This technique has five principles based on the dynamic physical characteristics of the abdominal wall and intra-abdominal pressure. The principles are influenced by the modified intra-abdominal pressure, which can vary from 8 cm H₂O in the supine position to 80 cm H₂O with physical exertion and shrinkage of the mesh in living tissue, resulting in contraction. Most authors describe mesh shrinkage as approximately 20%. Shrinkage is linked to the healing of the recipient tissue, which leads to mesh contraction as the tissue heals (Amid, 2003, van Veenendaal et al., 2020).

The five principles described by Lichtenstein are: 1. use of a footprint-shaped mesh measuring approximately 7.5 × 15 cm, with a medial overlap of 2 cm in the region of the pubic symphysis, 3–4 cm above the inguinal triangle and 5–6 cm lateral to the internal inguinal ring; 2. crossing the edges of the mesh behind the spermatic cord (SC) to avoid lateral recurrence; 3. suturing the mesh with two separate stitches in the rectus abdominis muscle sheath and the aponeurosis of the internal oblique muscle (IOM) to prevent injury to the iliohypogastric nerve (IHN) and suturing the lower edge of the mesh to the inguinal ligament with continuous non-absorbable thread (passing the needle three to four times) to avoid mobilization of the mesh; 4. keeping the mesh slightly relaxed or in a dome shape to contain the protrusion of the transversal

fascia during physical effort, thus compensating for the contraction of the mesh; and 5. visualizing and protecting the three inguinal nerves: the ilioinguinal nerve (II), the iliohypogastric nerve (IHG) and the genital branch of the genitofemoral nerve (GNF) (Messias et al., 2023). Recent data from Brazil reveal that almost all (99.2%) of the more than 700,000 HI surgeries performed with the SUS between 2017 and 2022 used the open technique (Messias et al., 2023). A recent population-based study with more than 260,000 patients in Spain indicated an open surgery rate of 94.3% (Guillaumes et al., 2021). The review led by the Americas Hernia Society Quality Collaborative also highlighted a significant rate of open surgery (42%) among North American surgeons (AlMarzooqi, Tish, Huang, Prabhu, & Rosen, 2019). Although accurate recent data from all countries are not available, Lichtenstein surgery remains the preferred choice for most surgeons (Chen, & Morrison, 2019). The American College of Surgeons has endorsed the Lichtenstein technique as the gold standard surgery (Amid, 2004) for IH, and major consensus statements from the hernia and abdominal wall societies currently recommend the Lichtenstein technique as the preferred surgical approach for anterior IH repair with mesh (van Veenendaal et al., 2020, Claus et al., 2019, Öberg et al., 2020).

The literature on the technical steps of Lichtenstein surgery, modifications, and chronic pain prevention measures are of utmost importance to achieve a safe and successful procedure. Studies have demonstrated the need to improve neuroanatomical knowledge of the inguinal region and the technical steps of the Lichtenstein technique (Alfieri et al., 2011).

The steps of the Lichtenstein technique are: surgical incision, an incision of approximately 5 cm is made, starting from the pubic symphysis towards the anterior superior iliac spine; dissection of the tissues after the incision, the subcutaneous cellular tissue and Scarpa's fascia are dissected until reaching the aponeurosis of the EOM; exposure of the SC that is released and dissected, allowing visualization of the transversal fascia and Cooper's ligament, identification of the hernia, direct or indirect and if there is weakness in the transversal fascia, the hernial sac is reduced; fixation of the polypropylene mesh and positioned on the posterior wall of the inguinal canal, covering the weakened area. The mesh is fixed with sutures in the inguinal ligament, EOM and conjoint tendon. Closure of the incision where the aponeurosis of the external oblique muscle is sutured, followed by approximation of the subcutaneous tissue and closure of the skin (Messias et al., 2023, Guillaumes et al., 2021).

The advantages of the Lichtenstein technique are the low recurrence rate due to reinforcement of the posterior wall with mesh, less postoperative pain compared to techniques that use tension sutures, and faster recovery, allowing an early return to normal activities.

Mc Vay Technique

The McVay technique is a surgical approach used to repair hernias and femoral hernias and is one of the few open techniques without the use of mesh. Its principle is based on the anatomical reconstruction of the posterior wall of the inguinal canal, promoting natural reinforcement of the tissues (Ivanov, & Iarumov, 1988).

The technique gained notoriety in 1945 when it began to be widely disseminated among surgeons as an effective approach for treating hernias without the use of mesh. Unlike previous methods, such as the Bassini technique, which used tension sutures, the McVay technique proposed a more natural reinforcement of the abdominal wall, fixing the transversalis fascia to the Cooper ligament. This approach allowed greater stability of the inguinal region, reducing the risk of recurrences and postoperative complications (Van Laere, Derom, Berzsenyi, & De Roose, 1979).

Over the decades, the McVay technique has been compared to other approaches, such as Shouldice and Lichtenstein, in studies analyzing recurrence rates and long-term efficacy. Although it was considered a viable option for femoral hernias, its application in IH was gradually replaced by techniques that use mesh, such as Lichtenstein, due to the lower recurrence rate and faster recovery (Van Laere, Derom, Berzsenyi, & De Roose, 1979). Despite the evolution of surgical techniques, the McVay approach is still used in specific cases, especially when there is a contraindication to the use of mesh. Its legacy in hernia surgery remains relevant, influencing the development of new strategies for anatomical repair of the abdominal wall (Hachisuka, 2003). The procedure begins with an incision in the inguinal region, allowing exposure of the SC and adjacent structures. Then, a dissection of the transversal fascia is performed, allowing access to the preperitoneal space. The hernial sac is identified and reduced, ensuring that the abdominal contents return to the peritoneal cavity (Towfigh, 2018).

The main characteristic of the McVay technique is the fixation of the transversal fascia to the Cooper ligament, reinforcing the posterior wall of the inguinal canal and preventing recurrences. This suture provides firm support, especially in cases of femoral hernias, where there is greater fragility in the lower region of the inguinal canal (Towfigh, 2018).

After reconstruction of the posterior wall, the SC is repositioned and the aponeurosis of the external oblique muscle is sutured, ensuring the integrity of the operated region. The incision is closed in layers, minimizing the risk of postoperative complications (Towfigh, 2018).

The McVay technique is mainly indicated for direct and femoral IH and is an effective alternative for patients in whom the use of mesh is not recommended (Hachisuka, 2003).

The Lichtenstein technique is widely used for IH repair and consists of fixing a polypropylene mesh to the posterior wall of the inguinal canal, avoiding tension on the suture. This approach significantly reduces the recurrence rate, which varies between 0.5% and 4%, making it one of the safest options. However, there are associated risk factors, such as chronic postoperative pain, caused by irritation of local nerves by the mesh, in addition to the possibility of infection of the prosthetic material. In some cases, seroma and hematoma may occur, due to the accumulation of fluid in the operated area, which can prolong recovery time. Another risk is mesh rejection, although rare, which can lead to persistent inflammation and the need for surgical intervention (van Veenendaal et al., 2020).

On the other hand, the McVay technique is based on the anatomical reconstruction of the posterior wall, without the use of mesh. Its main feature is the fixation of the transversal fascia to the Cooper ligament, which reinforces the abdominal wall naturally. However, this approach has a higher recurrence rate compared to Lichtenstein, which can reach 10% or more, especially in patients with muscle weakness. In addition, suturing under tension can cause prolonged discomfort and postoperative pain, making recovery slower. Another risk is vascular injury, since the Cooper ligament is close to important blood vessels, increasing the possibility of intraoperative bleeding (van Veenendaal et al., 2020).

Methodology

The literature review aims to compare surgical methods, assessing efficacy, recurrence rate, postoperative complications and recovery time so that it would be possible to obtain a critical view of the advantages and limitations of each approach. Systematic searches were carried out in scientific databases, such as PubMed, Scielo, Lilacs and the Cochrane Library. Specific descriptors are used, including "Inguinal hernia", "Lichtenstein hernioplasty", "McVay hernioplasty", "Inguinal hernia recurrence" and "Postoperative complications", ensuring that the selection of studies is targeted and relevant. The inclusion criteria consider publications from the last 10 years, which present a direct comparison between the techniques, including clinical trials, systematic reviews and meta-analyses. Studies with small sample sizes or inconsistent methodology are excluded to ensure the quality of the review. For the extraction of results and data analysis, it was important to answer the recurrence rate associated with each surgical technique, postoperative pain and the impact on the patient's quality of life and complications, such as seromas, hematomas and infection of the operated region, recovery time and return to normal activities and, all these results were contextualized in light of the existing literature, exploring the advantages and disadvantages of each approach, in addition to considerations about the surgeon's experience, patient profile and technological advances that could influence surgical outcomes.

Results

The recurrence rate is one of the main criteria for evaluating the effectiveness of inguinal hernioplasty techniques. A comparison between the Lichtenstein and McVay techniques reveals significant differences in this aspect, influenced by the use of mesh, suture tension, and abdominal wall resistance after the procedure. The Lichtenstein technique is widely recognized for its low recurrence rate, due to the use of a polypropylene mesh that reinforces the posterior wall of the inguinal canal. Studies indicate that the recurrence rate varies between 0.5% and 4%, depending on factors such as surgeon experience, quality of mesh fixation, and patient characteristics. A study published in SciELO Brazil analyzed 649 hernioplasties performed using the Lichtenstein technique and identified only 5 cases of recurrence, resulting in a rate of 0.77%. This data reinforces the effectiveness of the technique, especially when the mesh is well-positioned and correctly fixed (Peres, Lavrada, & Andreollo,

2008). The McVay technique, since it does not use mesh, relies exclusively on the fixation of the transversal fascia to the Cooper ligament to reinforce the abdominal wall. However, this approach can generate excessive tension in the suture, increasing the risk of structural failure over time. Studies indicate that the recurrence rate of the McVay technique can vary between 5% and 15%, being significantly higher than the Lichtenstein technique. The absence of mesh makes the abdominal wall more vulnerable to intra-abdominal pressure, especially in patients with muscle weakness or obesity, factors that contribute to hernia recurrence.

The Lichtenstein technique has a lower recurrence rate, while the McVay technique has a higher risk of recurrence because it relies exclusively on anatomical sutures. The choice between the techniques should consider the patient's profile, the type of hernia, and the surgeon's experience, ensuring effective and long-lasting treatment.

Regarding postoperative pain, the Lichtenstein technique can irritate local nerves, leading to a greater risk of chronic pain. Studies indicate that 32% of patients undergoing this technique report persistent pain and paresthesia 12 months after surgery.

In the first few days after the procedure, pain is moderate and tends to gradually decrease. However, in some cases, the presence of the mesh can generate chronic inflammation, resulting in prolonged discomfort. The McVay technique avoids complications related to the prosthetic material, but it can generate excessive tension in the suture, increasing pain in the first few days of recovery. Although the initial pain is more intense, the incidence of chronic pain is lower compared to Lichtenstein. Studies indicate that the rate of chronic pain in the McVay technique is less than 10%, being less frequent than in the Lichtenstein technique. However, due to the need for a suture under tension, postoperative discomfort may be greater in the first few days. Despite presenting a higher risk of chronic pain, the Lichtenstein technique presents less initial pain, while the McVay technique presents greater pain in the first few days, but a lower incidence of chronic pain. The main advantage of the Lichtenstein technique is the low recurrence rate. However, some complications may occur in addition to chronic pain, such as infection of the mesh, which, although rare, may occur in 1 to 2% of cases, requiring surgical removal in severe cases. Seromas and hematomas may also occur due to the accumulation of fluid in the operated region, occurring in 5 to 8% of patients and may prolong recovery time and rejection of the mesh in rare cases, where the body may react negatively to the synthetic material, causing chronic inflammation and the need for further intervention.

Complications in the McVay technique may include a higher recurrence rate, which may vary between 5 and 15%, being significantly higher than in the Lichtenstein technique; tension in the suture where the transversal fascia is fixed to the Cooper ligament may generate excessive tension, increasing the risk of prolonged pain and discomfort; and vascular complications, where the proximity of the Cooper ligament to blood vessels may increase the risk of vascular injuries, which may occur in 2 to 4% of cases. Slower recovery is also a complicating factor in this technique, as it depends on the natural healing of the tissues and, for this reason, recovery may take longer.

The Lichtenstein technique allows a faster return to daily activities due to less tension on the suture. Studies indicate that 80% of patients can resume light activities in 7 to 10 days. Return to work occurs, on average, between 2 and 4 weeks, depending on the nature of the professional activity. Full recovery, including intense physical activities, occurs in 6 to 8 weeks.

The McVay technique depends exclusively on the natural healing of the tissues, which may prolong recovery time. Studies indicate that 60% of patients can resume light activities in 10 to 14 days. Return to work occurs, on average, between 4 and 6 weeks, which is slower than with the Lichtenstein technique. Full recovery, including intense physical activities, can take 8 to 12 weeks.

Discussion

The Lichtenstein technique is widely used due to its low recurrence rate and the fact that it involves the placement of a polypropylene mesh that reinforces the posterior wall of the inguinal canal. However, this approach can lead to chronic postoperative pain, reported in up to 9.15% of patients, due to irritation of local nerves by the mesh. On the other hand, the McVay technique relies exclusively on the fixation of the transversal fascia to the Cooper ligament to reinforce the abdominal wall. Although it avoids complications related to the prosthetic material, it has a higher recurrence rate, ranging from 5% to 15%, due to tension in the suture and the fragility

of the abdominal wall (AlMarzooqi et al., 2019). Chronic postoperative pain in the Lichtenstein technique is one of the most relevant challenges in the treatment of IH. Although this approach is widely used, the presence of a mesh can lead to nerve irritation, prolonged inflammation, and persistent discomfort. Studies indicate that the incidence of chronic pain after Lichtenstein hernioplasty varies between 9.15% and 32% of patients, depending on factors such as the surgical technique used, location of the mesh, and patient profile. Pain can be neuropathic, caused by injury or compression of the inguinal nerves, or somatic, related to tissue fibrosis and inflammatory reaction to the synthetic material (Chen, & Morrison, 2019).

Compared to minimally invasive techniques, such as laparoscopic hernioplasty, the rate of chronic pain in the Lichtenstein approach is considerably higher. Studies show that laparoscopic surgery has a chronic pain rate of less than 2.63%, while the Lichtenstein technique can result in prolonged paresthesia and hypersensitivity in up to one-third of patients. The medical literature suggests some strategies to minimize chronic pain in this technique, such as careful identification of the inguinal nerves during surgery, use of low-density meshes, and fixation without excessive tension. In severe cases, pain may require treatment with nerve blocks, prolonged analgesia, or even surgical reintervention to remove the mesh (Claus et al., 2019). Although the Lichtenstein technique is effective in preventing hernia recurrence, its impact on chronic postoperative pain reinforces the need for careful patient selection and consideration of alternative approaches. The choice between this technique and other surgical approaches should take into account the patient's profile, the surgeon's experience, and tolerance to the risks and benefits of each method (Guillaumes et al., 2021). Postoperative pain is a crucial factor in choosing the technique. Studies indicate that the McVay technique may generate greater initial discomfort due to tension on the suture, but has a lower incidence of chronic pain compared to Lichtenstein. The Lichtenstein technique, despite providing a faster recovery, may result in paresthesia and persistent pain in some patients. Unlike the Lichtenstein technique, the McVay technique relies exclusively on the fixation of the transversal fascia to the Cooper ligament, which can generate greater tissue inflammation and prolonged discomfort (Hori, & Yasukawa, 2021). Chronic pain after McVay hernioplasty can be divided into neuropathic pain and somatic pain, where neuropathic pain arises when there is injury or irritation of the inguinal nerves, such as the II, IHG and genital branch of the femoral nerve, due to the proximity of the suture. Compression of these nerves can result in paresthesia, hypersensitivity and burning pain, hindering the patient's recovery, and somatic pain is related to fibrosis and chronic inflammation in the operated region, due to the need for anatomical reinforcement without mesh support. The healing process can generate tissue adhesions, making the area more sensitive and painful over time. Medical literature indicates that the rate of chronic postoperative pain in the McVay technique ranges from 8% to 15%, being more frequent in patients with poor muscle quality in the abdominal wall (Guillaumes et al., 2021). Studies show that suture tension may be one of the main factors associated with persistent pain, directly influencing recovery. In comparison, the Lichtenstein technique has a higher rate of chronic pain. However, the McVay technique may present greater discomfort in the first months after surgery (AlMarzooqi et al., 2019). Although the McVay technique is mainly used for femoral hernias, its application in IH has been increasingly less frequent due to the high recurrence rate and the risk of prolonged pain. The literature suggests that chronic pain can be reduced through careful identification of the inguinal nerves during surgery, in addition to the use of less tensioned suture techniques (Chen, & Morrison, 2019).

Studies on minimally invasive alternatives, such as transabdominal preperitoneal laparoscopy (TAPP), indicate that the rate of chronic pain may be significantly lower compared to the McVay technique, due to less manipulation of the inguinal nerves and better distribution of intra-abdominal pressure (Claus et al., 2019). The Lichtenstein technique has a lower risk of recurrence and vascular complications and is recommended for patients with primary IH and no contraindication to the use of mesh. The McVay technique may be indicated in specific cases, such as femoral hernias, where fixation on the Cooper ligament provides greater stability (Guillaumes et al., 2021). Several studies indicate that the recurrence rate in the Lichtenstein technique varies between 0.5% and 4%, depending on factors such as the surgeon's experience, quality of mesh fixation, and individual patient characteristics (Hori, & Yasukawa, 2021). Studies have identified that only 5 cases present recurrence, which shows that the recurrence rate with this technique is very low. The occurrence of recurrence is directly associated with factors such as inadequate fixation

of the mesh, allowing the return of the protrusion of the abdominal contents; use of an insufficiently sized mesh, leaving areas vulnerable to intra-abdominal pressure; and significant muscle weakness, especially in elderly patients or those with a history of multiple hernias (Claus et al., 2019).

The literature reinforces that the Lichtenstein technique has one of the lowest recurrence rates among hernioplasty methods. However, some comparative studies indicate that the laparoscopic technique, such as TAPP and Totally Extraperitoneal (TEP), may have even lower rates. Data indicate that the recurrence rate in laparoscopic techniques is around 2.32%, while in the open Lichtenstein technique, this rate can reach 4.45% in certain clinical scenarios (Hori, & Yasukawa, 2021).

Another important aspect is the influence of patient factors on the recurrence rate. Conditions such as obesity, collagen diseases, smoking, and repetitive physical exertion can increase the chance of hernia recurrence, regardless of the surgical technique used (Chen, & Morrison, 2019). The recurrence rate in the McVay technique varies between 2.67% and 8.5%, depending on factors such as the type of hernia, suture quality, and patient profile. A prospective study conducted in Brazil analyzed patients undergoing different hernioplasty techniques, including Bassini, Shouldice, and McVay. The results showed that the McVay technique had a recurrence rate of 8.5%, higher than the Shouldice technique, but lower than the Bassini technique, which had a recurrence rate of 35.7% (Claus et al., 2019). Another prospective study evaluated 75 hernias repaired using the McVay technique and identified only two recurrences (2.67%), reinforcing that, when performed by experienced surgeons, this technique can produce good results. However, the literature highlights that, compared to the Lichtenstein technique, which has a recurrence rate of less than 4%, the McVay technique may be less effective in terms of recurrence, especially in patients with significant muscle weakness (AlMarzooqi et al., 2019).

In addition to the recurrence rate, the McVay technique, despite avoiding complications related to the use of mesh, may present a higher risk of excessive tension on the suture, which compromises the resistance of the abdominal wall over time. This may result in slower recovery and greater vulnerability to hernia recurrence. For this reason, some research suggests that minimally invasive approaches, such as TAPP laparoscopy, may provide lower recurrence rates and better distribution of intra-abdominal pressure (Guillaumes et al., 2021).

The McVay technique, although still a viable option for specific cases, has gradually been replaced by techniques that use mesh, due to its higher recurrence rate. The choice between McVay, Lichtenstein or minimally invasive techniques should consider the patient's profile, the available infrastructure and the need for effective and safe treatment, ensuring better long-term results (Hori, & Yasukawa, 2021).

Conclusion

The comparison between the Lichtenstein and McVay inguinal hernioplasty techniques shows significant differences in terms of recurrence rate, postoperative pain, complications and recovery time. The Lichtenstein technique has a low recurrence rate due to the use of mesh, providing greater stability to the abdominal wall. However, this approach can result in chronic postoperative pain. On the other hand, the McVay technique avoids complications related to synthetic material but has a higher recurrence rate and slower recovery. The literature suggests that the choice between these techniques should consider the patient's profile, type of hernia and surgeon's experience. While Lichtenstein is preferred for cases of primary hernia, McVay may be indicated in specific situations, such as femoral hernias. Thus, it is concluded that both techniques have advantages and limitations, and an individualized evaluation is essential to ensure better clinical outcomes and quality of life for the patient. In addition, future studies may explore minimally invasive approaches, such as laparoscopy, to optimize surgical results.

Abbreviations

SC – Spermatic Cord, **GHI** – Iliohypogastric Nerve, **GNF** - Genitofemoral Nerve, **II** - Ilioinguinal Nerve, **IH** - Inguinal Hernias, **IHG** - Iliohypogastric Nerve, **EOM** - External Oblique Muscle, **IOM** - Internal Oblique Muscle, **SUS** – Sistema Único de Saúde, **TAPP** - Transabdominal Preperitoneal, **TEP** - Totally Extraperitoneal.

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Declaration of Conflict of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

What do we already know about this topic?

The Lichtenstein hernioplasty technique is a widely used surgical approach for the repair of inguinal hernias. It is considered a tension-free technique, as it uses a polypropylene mesh to reinforce the posterior wall of the inguinal canal, avoiding the need for sutures that could cause tension and increase the risk of recurrence.

The McVay technique is a more traditional approach, which involves fixation of the Cooper ligament and reconstruction of the posterior wall without the use of mesh. Although effective, it can be associated with a greater risk of tension in the tissues and, consequently, greater postoperative discomfort.

The Lichtenstein technique is currently one of the most widely used in the world, being recommended by several medical guidelines due to its effectiveness and lower complication rate. Studies indicate that, despite its popularity, there are still variations in the way surgeons apply this technique, which can impact clinical results.

What is the main contribution to evidence-based practice in this article?

The main contribution of this article to evidence-based practice is the detailed comparison between the Lichtenstein and McVay techniques for inguinal hernia repair. It provides a critical analysis of the clinical outcomes, complication rates, and efficacy of each approach, helping surgeons make more informed decisions about which technique to use in different scenarios.

In addition, recent studies indicate that the Lichtenstein technique, because it is tension-free, has lower recurrence rates and postoperative complications. On the other hand, the McVay technique may be more appropriate in specific cases, depending on the patient's anatomy and the surgeon's experience.

What are the implications of the article for theory, practice, or policy?

This article has significant implications for theory, practice, and policy in the area of inguinal hernia surgery:

It contributes to the understanding of the biomechanical differences between the Lichtenstein and McVay techniques, helping to improve theoretical models of hernia repair and the impacts of tension on tissues. In addition, it reinforces the importance of an evidence-based approach to choosing the most effective surgical technique.

The study findings can directly influence surgeons' decision-making, providing data on recurrence rates, complications, and postoperative recovery. The Lichtenstein technique, for example, has been widely adopted due to its lower rate of chronic pain and recurrence. The McVay technique, on the other hand, may be more indicated in specific cases, depending on the patient's anatomy and the surgeon's experience.

The results can impact medical guidelines and hospital protocols, encouraging the standardization of surgical techniques and the adoption of practices that minimize postoperative complications. Furthermore, they can influence public health policies related to the training of surgeons and the choice of more effective surgical materials.

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