

Hernia Emergencies

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KEYWORDS

• Hernia • Emergencies • Acute care surgery

KEY POINTS

- Hernia emergencies are commonly encountered by the acute care surgeon.
- Although the location and contents may vary, the basic principles are constant: address the life-threatening problem first, then perform the safest and most durable hernia repair possible.
- Mesh reinforcement provides the most durable long-term results.
- Underlay positioning is associated with the best outcomes.
- Components separation is a useful technique to achieve tension-free primary fascial reapproximation.
- The choice of mesh is dictated by the degree of contamination.
- Internal herniation is rare, and preoperative diagnosis remains difficult.
- In all hernia emergencies, morbidity is high, and postoperative wound complications should be anticipated.

INCARCERATED INGUINAL AND FEMORAL HERNIAS

Definitions

A hernia is a weakness or disruption of the fibromuscular tissues through which an internal organ (or part of the organ) protrudes or slides through. Collectively, inguinal and femoral hernias are often lumped together into groin hernias. Inguinal hernias can be indirect or direct. Indirect hernia protrudes through the internal inguinal ring, which is an opening in the transversalis fascia, located laterally to the inferior epigastric artery. Direct inguinal hernia, on the other hand, comes out through the Hesselbach triangle (bounded laterally by the inferior epigastric vessels, medially by the lateral border of the rectus muscle, and inferiorly by the inguinal ligament). Femoral hernias protrude through the femoral canal, which is located below the inguinal ligament on the lateral aspect of the pubic tubercle. It is bounded by the inguinal ligament anteriorly, pectineal ligament posteriorly, lacunar ligament medially, and the femoral vein laterally. This is a tight opening bordered by sturdy ligaments, which makes it more susceptible

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to strangulation. It is also located rather deep, which obscures the physical examination and often delays the diagnosis.

The following terms are important to clarify when discussing hernias: (1) reducible, which refers to a hernia that can go back into the body cavity easily (either manually or spontaneously); (2) irreducible/incarcerated, which refers to a hernia that cannot be reduced; it does not automatically mean that the hernia is strangulated or that obstruction is occurring (although both are possible); and (3) strangulated, which refers to a hernia in which the blood supply to the incarcerated contents is compromised.

Epidemiology

Hernias are among the oldest recorded afflictions of humans, and inguinal hernia repair is one of the most common general surgical procedures.¹ Inguinal hernias comprise 70% to 75% of all abdominal wall hernias and are more common in men, whereas femoral hernias account for less than 5% and are more common in women.^{2,3} Overall, 96% of groin hernias are inguinal and 4% are femoral. These hernias are more common in men. The lifetime risk of developing a groin hernia is 25% in men, but less than 5% in women. Men are also 20-fold more likely to need a hernia repair.

When to Repair?

Surgery remains the only effective treatment, but the optimal timing and method of repair remain controversial. Although strangulation rates of 3% at 3 months have been reported by some investigators,⁴ the largest prospective randomized trial (n = 720) of (watchful waiting) men with minimally symptomatic inguinal hernias showed that watchful waiting is safe.⁵ Frequency of strangulation was only 2.4% in patients followed up for as long as 11.5 years. Long-term follow-up shows that more than two-thirds of men using a strategy of watchful waiting cross over to surgical repair, with pain being the most common reasons. This risk of crossover is higher in patients older than 65 years.⁶ Once an inguinal hernia becomes symptomatic, surgical repair is clearly indicated. Femoral hernias are more likely to present with strangulation and require emergency surgery⁷ and are thus repaired even when asymptomatic. Because this article focuses on incarcerated hernias, nonoperative options are not discussed.

How to Repair?

Open versus laparoscopic

The laparoscopic approach has gained popularity for the repair of nonincarcerated groin hernias, but randomized trials have shown that this approach has a higher recurrence rate, more serious complications, requires a substantial learning curve, and is not cost-effective.^{8,9} A large European study showed that laparoscopic repair was no better than open, with a higher chance of technical errors.¹⁰ In expert hands it remains an attractive option, and often its selection for elective repairs is driven by patient demand. However, once the hernia has become incarcerated, an open approach is the safest, because it allows for proper evaluation of the hernia contents, safe reduction, resection (if needed), and a secure repair.

Mesh versus primary

In recent years, Lichtenstein tension-free mesh-based repair has become the criterion standard for elective hernia repair.¹¹ Numerous permanent meshes are available, with no convincing data establishing the superiority of any particular brand/mesh type. In the setting of bowel incarceration, if there is no ischemia and no need for resection, use of permanent mesh is still relatively safe.^{12,13} However, implantation of permanent synthetic mesh in the setting of bowel ischemia/resection can lead to an unacceptably

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