Investigating Laparoscopic Approaches To Incarcerated, Strangulated Inguinal Hernias

Inguinal hernias are common presentations to general surgery clinics to be reduced and emergency units when they incarcerate or strangulate. While elective surgery for inguinal hernia has a low mortality rate of less than 1 death per 10,000 operations, the risks of post-operative complications following emergency surgery are high. In elderly patients, mortality can be as high as 5 percent. According to literature, the probability of the hernia getting incarcerated varies from 0.29 percent to up to 2.9 percent, a recent paper published in the Journal of the Society of Laparoendoscopic Surgeons reports.

Traditionally, the approach to these presentations is open surgery in which the hernia is reduced after induction of anesthesia and muscle relaxation, or during surgery where the sac is dissected or the hernia defect is widened.

Despite increasing advancements in minimally invasive surgical techniques in many realms of surgery, the laparoscopic approach to inguinal hernias has been controversial. Through a systematic review of the literature assessing laparoscopic approaches to inguinal hernia repair, the JSLS paper states laparoscopy is feasible for these procedures, but efficacy needs further assessment.

To come to these findings, the researchers carried out a systematic literature review of sources such as Medline with Pubmed as the search engine, Ovid, Embase, Cochrane Collaboration and Google Scholar. They identified 43 articles reporting laparoscopic treatment, reduction and repair of incarcerated or strangulated inguinal hernias from 1989 to 2008.

Of the 43 articles found, 16 were reviewed in full. From the studies, 328 cases were reported, including 6 conversions. The average operating room time was 61.3 minutes; the average hospital stay was 3.8 days. Thirty-four complications were reported—25 reported to be minor—and 17 bowel resections either laparoscopically or through a minilaporatomy incision guided laparoscopically.

After reviewing the literature, researchers concluded that the laparoscopic approach to these procedures has been well-documented, but skepticism still exists among surgeons. Literature comparing the laparoscopic approach with open surgery suggests that laparoscopy is superior to open; however, the laparoscopic approach to incarcerated or strangulated inguinal hernias is still scarce.

According to the study, the first successful treatment of an incarcerated hernia with laparoscopic-guided intestinal resection was in 1993. In 1996, the study found, Ishihara et al reported on a series using the TAPP approach for the reduction of incarcerated hernias and then to assess for bowel viability. Published studies of the

TAPP approach report operating times of 88 minutes with 1 complication, in one study for example, and 55 minutes and 7 complications in another study.

Meanwhile, the researchers report the TEP approach is more often published in cases with incarcerated or strangulated inguinal hernias. An exclusive TEP series published in 2004 reporting on 11 patients with acute hernias resulted in 3 conversions, average operating time of 50 minutes and an average hospital stay of 5.4 days with 2 complications and 1 bowel resection. Further, bowel resection can be done completely laparoscopically, as published studies report, or laparoscopically guided by a minilaparotomy.

In the end, the researchers of this paper concluded that no matter if TEP or TAPP is used, laparoscopic approach is feasible in these procedures—from exposing the sac and its contents, reduction and repairing the hernia with mesh. Further, it can be used for bowel resection “if the segment is deemed nonviable after the repair has been completed and gives ample time to the bowel to manifest as viable or nonviable to the surgeon.”

According the paper, complication, recurrence and hospital stay are extremely close to those documented in open surgeries; therefore, the approach is safe and feasible for inguinal hernia repair.

Source: S. Deeba, S. Purkayastha, P. Paraskevas, T. Athanasiou, A. Darzi, E. Zacharakis "Laparoscopic Approach to Incarcerated and Strangulated Inguinal Hernias." JSLS (2009) 13:327-331.

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