

Rare Inguinal Hernia Cases with Minimal Dissection

Dr. Chandrkant Paliwal¹, Dr. Surendra Kumar Jain², Dr. Kannomal Garg³

¹Associate Professor, ³Professor and Unit Head, ²Professor & Head,
Department of Surgery, Institute for Medical Sciences and Research Centre, JNU, Jaipur, Rajasthan, India.

Corresponding Author: Dr. Surendra Kumar Jain

ABSTRACT

Inguinal hernias are the most common type of hernia. These hernias result through a weak spot or tear in the lower abdominal wall, often in the inguinal canal. The main aim of the study is to assess the rare cases after the surgery of inguinal hernia. Data extracted from these papers included authors, country, year of publication, age and sex of patients, epidemiology, pathogenesis, risk factors for development of inguinal hernias, racial distribution, presenting symptoms, surgical treatment and unusual findings in inguinal hernia surgery were included in the study. Unusual cases of Inguinal Hernia Surgery and Risk factors for reoccurrence of Inguinal Hernia were discussed in the present study correlating it with the similar studies done in the past in various parts of the world. It may be concluded that even though hernia is a common surgical problem, up to date knowledge of herniology is important for proper repair of inguinal hernias to reduce recurrence rate, and careful handling of these unusual contents of inguinal hernias, to avoid damage to some of these structures.

Keywords: Inguinal Hernia, Rare cases, Risk factors, Proper repair

INTRODUCTION

Inguinal hernia is an important complication of abdominal surgery. Procedures for the repair of these hernias with sutures and with mesh have been reported, but there is no consensus about which type of procedure is best.

Inguinal hernias are the most common type of hernia. These hernias result through a weak spot or tear in the lower abdominal wall, often in the inguinal canal. This type of hernia is more common in men than in women. This is because a man's testicles descend through the inguinal canal shortly after birth, and the canal is supposed to close almost completely behind them. Sometimes, the canal does not close properly and leaves a weakened area prone to hernias.

In prospective studies with sufficient follow-up, primary Inguinal hernia occurred

in 11 to 20 percent of patients who had undergone laparotomy. [1-3]

Such hernias can cause serious morbidity, such as incarceration (in 6 to 15 percent of cases) [4,5] and strangulation (in 2 percent). If the hernia is not reduced promptly, small bowel that is strangulated in the hernia may become ischemic and necrotic and perforation may ultimately occur.

Inguinal hernia repair remains a source of passionate debate today. Despite advances in techniques and materials, high complication rates, patient discomfort, chronic pain, and recurrence of hernia are associated with the surgical procedure. [1,2] The large variety of techniques and materials employed in the treatment of inguinal protrusions demonstrate that no gold standard exists. Moreover, there is an overall lack of current knowledge on the pathogenesis of inguinal hernia; we

hypothesize that this paucity of data is due to the fact that the physiology and biodynamics of the groin did not currently warrant sufficient research funding, when compared to other competitively funded areas.

METHODOLOGY

Objectives

The main aim of the study is to assess the rare cases after the surgery of inguinal hernia.

Data

Publications in English language on inguinal hernias from 1959 to 2015 were obtained from both reprint requests and by searching PubMed database. Data extracted from these papers included authors, country, year of publication, age and sex of patients, epidemiology, pathogenesis, risk factors for development of inguinal hernias, racial distribution, presenting symptoms, surgical treatment and unusual findings in inguinal hernia surgery were included in the study.

RESULTS

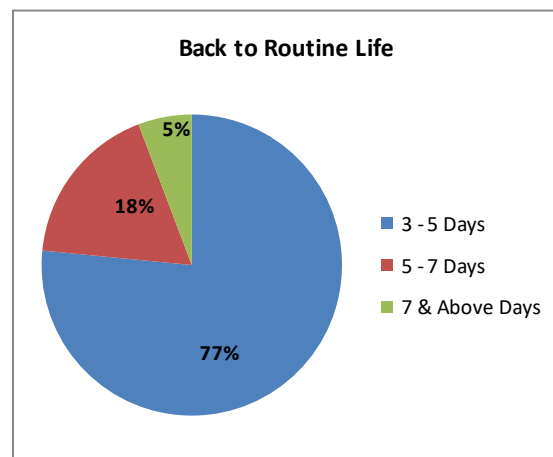
Mesh Hernioplasty was observed to have some advantages like:

- Low Recurrence Rate
- Low Postoperative Pain
- Early Resumption to Work
- Easy to Learn
- Can be Done Under Local / Spinal Anesthesia
- Shorter Operative Time
- Less Post-Operative Complications

Repair Type	USA (2010)	Europe (2010)
Total Inguinal Hernia Repair	842 000	703 000
Tension Repair	41 000 (4.8%)	92 000 (13%)
Tension Free Repair	801 000 (95.2%)	611 000 (87%)
Open	635 000 (80.3%)	491 000 (69.8%)
Laparoscopic	207 000 (19.7%)	120 000 (17%)

Hernias are among the oldest recorded afflictions of mankind and they are most commonly seen in the groin. [1,2] A hernia is defined as a protrusion, bulge or projection of an organ or a part of an organ through the body wall that normally contains it. In an inguinal hernia the

protrusion occurs through the inguinal canal. Groin hernias are the most common conditions for which primary care physicians refer patients for surgical management. [3] Approximately 96% of groin hernias are inguinal and 4% are femoral. [3] Inguinal hernia repair is therefore one of the most common operations in surgical practice. [2] They constitute an important public health problem. [4] In spite of its great incidence, hernias can pose a surgical dilemma, even for the skilled surgeon, because many pathologic entities can masquerade as inguinal hernia. The unexpected hernial content and pseudohernias constitute some of these cases. [5] The incidence of inguinal hernia is unknown, but about 500,000 cases come to medical attention each year. [6] This paper is intended to make readers, especially young surgeons surgical residents and general practitioners, aware of current thinking in the management of inguinal hernias.



In inguinal hernia repair, e. g., other preoperative chronic pain conditions not related to the groin [5-7] as well as severe early postoperative pain [6-8] after groin hernia repair is significant risk factors for chronic pain. Ventral hernia recurrence was reported as a risk factor for chronic pain in a large Veteran's Affairs Medical Centers survey. [9] A nonmidline (e.g. lumbar) location is accompanied by both more pre- and postoperative pain.

Risk factors for reoccurrence of Inguinal Hernia

In addition to male sex and increased age, a major risk factor for a groin hernia is a family history of groin hernias. [10] Other conditions reported to be associated with increased risk for both sexes include smoking, which causes a defective connective tissue metabolism, and chronic obstructive pulmonary disease. [10] Among women, rural residence, greater height, and umbilical hernia were in additional risk factors for inguinal herniation. [11] Lower body-mass index, high intra-abdominal pressure, collagen vascular disease, thoracic or abdominal aortic aneurysm, patent processus vaginalis, history of open appendectomy, and peritoneal dialysis are also risk factors. [10]

Patients with matrix metalloproteinase (MMP) abnormalities, (increased MMP-2 expression and MMP tissue inhibitor 2 activity) such as Ehlers-Danlos, Marfan's, Hurler's, and Hunter's syndromes, also have increased risks of having direct hernias. Matrix metalloproteinase is a family of proteolytic enzymes that degrade protein components of the extra-cellular matrix. Such increased proteolytic activity may cause weakness in structural tissue and abnormal connective-tissue homeostasis. [12]

Whether heavy lifting is also a risk factor remains controversial. A recent systematic review showed data concerning the relationship between occasional heavy lifting, repeated heavy lifting, or a single strenuous lifting episode and the development of a groin hernia to be inconclusive. [10] Of note, is that weight lifters do not have an increased incidence of inguinal hernias. [11]

Unusual cases of Inguinal Hernia Surgery

It had been stated that unusual hernia contents or findings in the inguinal canal can pose a surgical dilemma. [2] A lipoma of the cord on round ligament is one such finding. It can cause groin pain in both sexes, but more so in females, probably due to the size of the internal ring in women.

Such lipomas have occasionally been shown to grow very large, mimic irreducible hernia, and in males can grow into the scrotum to cause diagnostic confusion. [2] An inflamed swollen epiploic appendage of the sigmoid colon has been found in inguinal hernia sac. This epiploic appendagitis as it called, causes irritation symptoms and mass formation, without a cough impulse. [2]

Herniation of the ovary is rare and occurs in <3% of hernias in women. [12] Entrapment of the adnexa in an indirect hernia is rare in adult women. [2] Most reported cases concern the paediatric population and 30% occurs in adolescents of reproductive age. [2] Complications include ovarian torsion, incarceration or salpingitis.

Although rare, a hernia sac may contain vermiform appendix; it is called an Amyand's hernia and exceptionally, an acutely inflamed appendix which constitutes 0.07-0.13% of all cases of acute appendicitis. [13] Inflammation of the appendix is caused by pressure at the neck of the hernia. When the sac contains a Meckel's diverticulum, it is called a Littre's hernia, [2]

Benign tumors have been reported in the inguinal canal as lumps usually masquerading as inguinal hernias. Examples are Schwannoma, [14] and benign mesothelial cyst; the latter could be confused with a malignant myxoma and may lead to the performance of radical cancer surgery. [15]

Ectopic nephrogenic rests (ENR), which develop from a persisting nephrogenic blastema have been reported in the inguinal canal, but this is rare. Most of these were associated with patent processus vaginalis. Some undergo neoplastic transformation into benign adenomas or Wilms tumor. [16]

Ectopic adrenal tissue remnants are encountered incidentally in 1%-9.3% of children undergoing inguinal operations. These rests present as bright yellow nodules, and should be removed, as they may undergo marked hyperplasia or

neoplastic changes. [17]

Standard texts do not mention the occurrence of primary or metastatic tumors of the hernia sac, but they are seen in less than 0.4% of excised sacs, and most of them are metastatic. [18] These tumors have been classified as saccular or intrasaccular tumors, based on their relationship with the inguinal sac. Intra-abdominal malignancies like colonic cancers, presenting as inguinal hernias are known to occur. However, less than 1 out of 200 cases of these malignant colonic carcinomas is localized within an inguinal hernia, and have been known to cause colonic obstruction. [16-19] Liposarcoma makes up 7% of all paratesticular sarcomas, of which 12% occur in the inguinal canal. [20]

Parts of the urinary tract can present as sliding hernias. Ureteral hernia occurs, though uncommonly in males without urinary symptoms. [21] Oruç, *et al.* indicated that there are 64 cases of inguinoscrotal herniation of the ureter in the English language literature. [22] The incidence of inguinal hernia containing urinary bladder is 0.36%. [23] It is important to be aware of these conditions to avoid damage these structures when managing this rare hernia. [22]

Indirect inguinal hernia is a common finding in small infants. Early surgical intervention is usually recommended to avoid the development of obstruction. Infarcted testes have been found in hernia sac of such obstructed hernias. [23] Incomplete descent of the testis into the scrotum occurs in 2-8% of males at birth. [24] An atrophic, cryptorchid testis has been reported in the hernia sac of a 50-year-old man. [22] One other uncommon content of inguinal hernia sac is an abscess. Collections of the infected ascites can remain in recesses of the peritoneal cavity after peritonitis. This may lead to inflammation and the formation of an abscess in the hernia sac. [19]

CONCLUSION

Therefore, it may be concluded that even though hernia is a common surgical problem, up to date knowledge of herniology is important for proper repair of inguinal hernias to reduce recurrence rate, and careful handling of these unusual contents of inguinal hernias, to avoid damage to some of these structures.

REFERENCES

1. Eker HH, Langeveld HR, Klitsie PJ, van'tRiet M, Staseen LP, et al. (2012) Randomized clinical trial of total extraperitoneal inguinal herniorrhaphy vs Lichtenstein repair: a long term follow-up study. *Arch Surg* 147: 256-60.
2. Koning GG, de Vries J, Borm GF, Koeslag L, Vriens PWHE, et al. (2013) Health status one year after TransInguinal Preperitoneal inguinal hernia repair and Leichtenstin's method: an analysis alongside a randomized clinical study. *Hernia* 17: 299-306.
3. Tongaonkar RR, Reddy BV, Mehta VK, Sihgh NS, Shivade S (2003) Preliminary multicentric trial of cheap indigenous mosquito-nel cloth for tension-free hernia repair. *Indian J Surg* 65: 89-95.
4. Clarke MG, Oppong C, Simmermacher R, Park K, Kurzer M, et al. (2008) The use of sterilised polyester mosquito net mesh for inguinal hernia repair in Ghana. *Hernia* 13: 155-9.
5. Ansaloni L, Catena F, Coccolini F, Gazzotti F, D'Alessandro L, et al. (2009) Inguinal hernia repair with porcine small intestine submucosa: 3-year follow-up results of a randomized controlled trial of Lichtenstein's repair with polypropylene mesh versus Surgisis Inguinal Hernia Matrix. *Am J Sur* 198: 303-12.
6. Manyilirah W, Kijjambu S, Upoki A, Kiryabwire J (2011) Comparison of non-mesh (Desarda) and mesh (Lichtenstein) methods for inguinal hernia repair among black African patients: A short-term double-blind RCT. *Hernia* 16: 133-44.
7. Guarnieri A, Moscatelli F, Guarnieri F, Ravo B (1992) A new technique for indirect inguinal hernia repair. *Am J Surg* 164: 70-3.
8. Hynes DM, Stroupe KT, Luo P, Giobbie-Hurder A, Reda D, et al. (2006) Cost effectiveness of Laparoscopic versus open mesh hernia operation: results of a

- Department of Veterans Affairs randomized clinical trial. *J Am CollSurg* 203: 447-57.
9. Bittner R, Arregui ME, Bisgaard T, Dudai M, Ferzli GS, et al (2011) Guidelines for laparoscopic (TAPP) and endoscopic (TEP) treatment of inguinal hernia International Endohernia Society (IEHS). *SurgEndosc* 25: 2773-843.
 10. Langeveld HR, van'tRiet M, Weidema WF, Stassen LP, Steyerberg EW, et al. (2010) Total extraperitoneal inguinal hernia repair compared with Lichtenstein (the LEVEL-Trial): a randomized controlled trial. *Ann Surg* 251: 819-24.
 11. Eklund A, Montgomery A, Bergkvist L, Rudberg C, Swedish Multicentre Trial of Inguinal Hernia Repair by Laparoscopy (SMIL) study group (2010) Chronic pain 5 years after randomized comparison of laparoscopic and Lichtenstein inguinal hernia repair. *Br J Surg* 97: 600-8.
 12. Gurer A, Ozdogan M, Ozlem N, Yilidirim A, Kulacoglu H, et al. (2006) Uncommon content in groin hernia sac. *Hernia* 10: 152-5.
 13. Ivashchuk G, Cesmebasi A, Sorenson EP, Blaak C, Loukas M, et al. (2014) Amyand's Hernia: a review. *Med SciMonit* 20: 140-6.
 14. Ninos A, Douridas G, Liapi G, Ajazi E, Iordanou C, et al. (2004) Schwannoma in the inguinal canal masquerading an inguinal hernia. *Hernia* 8: 73-5.
 15. Rhone D, Gifford S, Drake CT, Nyhus LM (1980) Pseudotumor of the hernia sac- a case report. *Am Surg* 46: 187-93.
 16. Sharma AK, Al-Khaffaf HS (1985) Omental injury in a hernia sac. *Injury* 16: 493.
 17. Antoniou D, Loukas I, Papadakis V (2012) Ectopic nephrogenic rest in the inguinal canal in a 6-month-old girl and a review of published studies. *Ann Saudi Med* 32: 649-51.
 18. Yoell JH (1959) Surprises in hernial sacs; diagnosis of tumors by microscopic examination. *Calif Med* 91: 146-8.
 19. Meniconi RL, Vennarecci G, Lepiane P, Laurenzi A, Santoro R, et al. (2013) Locally Advanced Carcinoma of the Cecum Presenting as a Right Inguinal Hernia. A Case Report and Review of the Literature. *J Med Case Reports* 7: 206.
 20. Slater R, Amatya U, Shorthouse AJ (2008) Colonic carcinoma presenting as a strangulated inguinal hernia: report of two cases and review of the literature. *Tech Coloproctol* 12: 255-8.
 21. Montgomery E, Buras R (1999) Incidental liposarcomas identified during hernia repair operations. *J SurgOncol* 71: 50-3.
 22. Michowitz M, Schujman E, Solowiejczyk M (1979) Abberant adrenal tissue in the wall of a hernia sac. *Am Surg* 45: 67-9.
 23. Oruç MT, Akbulut Z, Ozozan O, Coşkun F (2004) Urological findings in inguinal hernias: a case report and review of the literature. *Hernia* 8: 76-9.
 24. Chakravartty S, Singh JC, Jayamanne H, Shah V, Williams GL, et al. (2011) Peritoneal mesothelioma masquerading as an inguinal hernia. *Ann R CollSurgEngl* 93: e107-8.

How to cite this article: Paliwal C, Jain SK, Garg K. Rare inguinal hernia cases with minimal dissection. *International Journal of Research and Review*. 2019; 6(7):164-168.
