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Research Article

Groin Hernia Repair in Female: Do we Need Mesh for the Repair?

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Abstract

Purpose: Laparoscopic inguinal hernia repair is associated with reduced post-operative pain and earlier return to work in men. However, the role of laparoscopic hernia repair in women is not well reported. The aim of this study was to review the outcomes of the laparoscopic versus open repair of inguinal hernias in women and to discuss patients' considerations when choosing the approach.

Methods: A retrospective chart review of all consecutive patients undergoing inguinal hernia repair from January 2018 to December 2022 at a single institution was conducted. Presentation characteristics and outcome measures including post-operative pain and complications were compared in women undergoing laparoscopic and open hernia repair.

Conclusions: Laparoscopic herniorrhaphy is as safe and efficacious as open repair in women and should be considered when the diagnosis is in question, for management of bilateral hernias or when concomitant abdominal pathology is being addressed.

Keyword: Chromic pain; Female hernia; Laparoscopic hernia repair

Introduction

Groin hernia repair has been advanced largely in the last decade however no single technique is considered standard for the management of all hernias and each approach should be tailored to accommodate the clinic scenario taking in consideration the risks and benefits of each of them. Hernia repair with mesh (Lichtenstein repair) has been widely shown in many studies to be tension-free with lower recurrence rate and hence, it became the generally accepted mode of repair despite its uncommon well-known mesh-based complications that includes chronic pain, erosion, foreign body sensation, or immunologic response to the mesh material [1]. Female hernia has been excluded from most of the hernia studies making the decision-making for female hernia even more difficult. Only 10 % of all inguinal hernia repairs are performed in women [2]. A possible factor in the decreased incidence in women may be that inguinal hernias are much more difficult to diagnose as the differential for groin pain in women is more robust. In fact, many women who have been found later to have inguinal hernias initially presented to their gynecologist with a diagnosis of chronic pelvic pain [3]. Laparoscopic herniorrhaphy in women has been reported in a single study to improve the detection rates of synchronous femoral hernias as well as contralateral hernias that might otherwise be missed, like men [4]. The aim of this study is to evaluate the pattern of presentation, repair, complication, and chronic pain in female patients post hernia repair in our center from January 2018 to December 2022.

Methods and Results

A retrospective chart review of all consecutive patients treated with inguinal hernia repair at a single institution from January 2018 through December 2022 was performed. Approval was granted by the institutional review board prior to conducting the study. A total of 680 hernias were performed during the study

period. Of these, 33 cases were females (5%). All subjects gave their informed consent for inclusion before they participated in the study. The study was conducted in accordance with our hospital policy and our protocol was approved by local IRB. One patient had surgery twice at different time intervals, one for left indirect inguinal hernia and the second for ipsilateral femoral inguinal hernia. The most common primary presenting symptom was pain (39.3%), and 30% of the cases were asymptomatic. The Laparoscopic approach was chosen in 28 cases (84.8%) and open repair in 5 (15.2%). All laparoscopic repair was performed via Trans-Abdominal Preperitoneal (TAPP) repair. Patients' characteristics are shown in Table 1. For those hernias diagnosed pre-operatively, 24% underwent Computed Tomography (CT) examination for investigation of symptoms or confirmation of examination finding, the rest of the cases were diagnosed clinically, and few hernias (9%) were discovered incidentally. While 51.5% of the cases were performed emergently, there was no need for bowel resection during any of the procedures. Two patients (6%) had ipsilateral femoral hernias diagnosed in addition to concurrent inguinal hernias (Figure 1).

Characteristic	N (± SD)
Age (mean, SEM)	43.2 ± 15
BMI	26.3 ± 4.8
Comorbidities and predisposing factors	
· Diabetes	7
· HTN	9
· COPD	2
· Constipation	3
· Chronic cough	4
· Urinary symptoms	2

Table 1: Patients' characteristics.

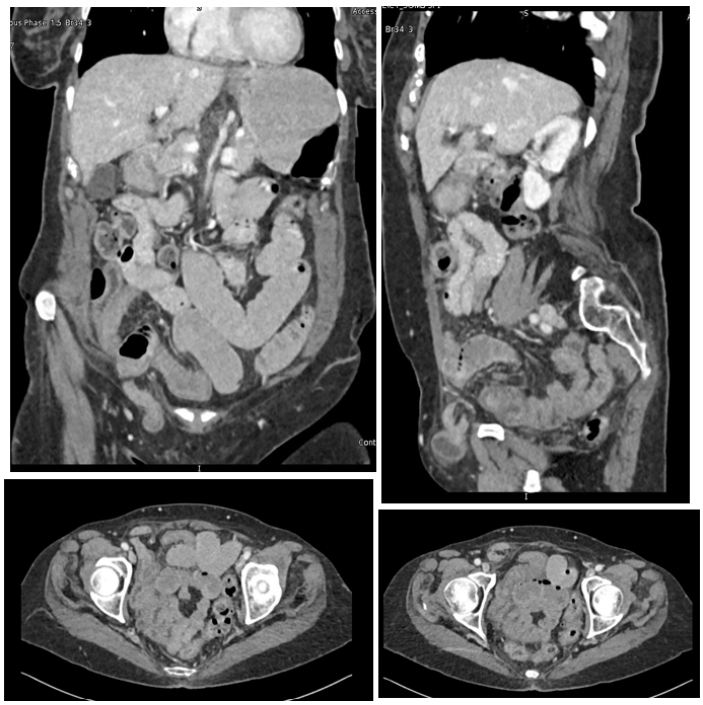

Figure 1: Preoperative CT scan for some of the cases.

Table 2 shows the how the clinicopathologic characteristics, complications, and recurrence rates. The most frequently utilized mesh with the laparoscopic approach was Progrip (self-adhering mesh) and Ultrapro mesh. Regarding length of hospital stay, the overall mean length (in days) was 1.4± 1.2 and 6 patients had their surgery as day care. Median follow-up was 23.3 months (range 5- 28 months). The first follow up visit after 13.5 days±6.9 during which mild pain was reported by 34% of them and moderate pain was reported in 6% of the patients. Chronic pain was reported in 13 patients (39.3%) (Table 3).

Characteristic	N (%)
Primary symptoms	
· Pain	13 (39.3%)
· Bulge	4 (12%)
· Pain and bulge	6 (18%)
· Asymptomatic	10 (30%)
CT diagnosis	8 (24%)
Recurrent hernia at diagnosis	1 (3%)
Hernia characteristics for (n= 32)	
· Indirect	24 (72.7%)
· Direct	3 (9%)
· Femoral	5 (15.3%)
· Bilateral	2 (6%)
Type of repair	
· Laparoscopic TAPP	28 (84.8%)
· Open repair	5 (15.2%)
Hernia sac contents	
· Omentum	3 (9%)
· Round ligament/cyst of round ligament	6 (18%)
· Small bowel	2 (6%)
· Fallopian tube	1 (3%)
· Cecum/appendix	1 (3%)
Emergency cases	17 (51.5%)
No mesh	5 (15.2%)
Mesh	28 (84.8%)
Post operative complications.	
· Seroma	3 (9%)
· Hematoma	1 (3%)
· Acute post operative pain	5 (15%)
Length of hospital stay (days)	1.4± 1.2
Chronic pain	13 (40.6%)
Follow up period (months)	23.3± 5.7

Table 2: Presentation, treatment, and outcomes.

Mesh type	Laparoscopy	Open
Progrip	11	2
Ultrapro	8	
Dextile/3D	5	1
Others	2	
No mesh	2	2

Table 3: Choice of mesh/product for each procedure (n=33).

Discussion

The lifetime risk for developing the hernia is 3% in female and 27 % in males. Patients presenting with groin swelling, pain or picture of intestinal obstruction needs to be examined for inguinal hernia. Having a high index of suspicion is important especially in female is important to avoid delay in management as the diagnosis is done usually with physical examination. Ultrasound (US) can help assisting the diagnosis as seen in another meta-analysis which showed that US carries sensitivity of 96.6% and PPV of 92 % in the diagnosis of such conditions [1]. The risk for incarceration of inguinal hernia among females thought to be much higher when compared to male hernia. Among our patients, 51.5% of the cases presented with incarceration which is largely more than the rate of incarceration in males (0.27% at 2 years and 0.55% at four years), making the watchful waiting option valid for male hernia but not for a female [2,5]. Risk factors for hernia including chronic cough, chronic constipation and urinary straining was not documented in any of the female hernia.

Although there are no guidelines for the surgical approach to repair the groin hernia which needs to be tailored based on individual characteristics, MIS approach using laparoscopic/ robotic with TEP or TAP is generally recommended for any female hernia to address the femoral hernia that occurs at higher incidence in female. A cohort analysis from Danish Database showed that recurrence rate in femoral hernia exclusively existed after anterior open primary operation [2]. Laparoscopy was used in 85% of our patients while open approach was used in the rest. Upon exploration, indirect inguinal hernia was the most common detected defect (78%) followed by direct inguinal hernia (4 patients) and femoral hernia (4 patients). One patient had both femoral and direct inguinal hernia at the same time and bilateral inguinal hernia was found in one patient. Women have higher postoperative pain than men [6]. Female gender is a strong risk factor for Chronic Postoperative Inguinal Pain (CPIP) [6,7]. In a comparative study in elective inguinal hernia repair in TAPP technique, women experienced significantly more pain, discomfort, and fatigue [8]. The risk of complicated presentation and unfavorable outcome in patients with groin hernia is significant in female sex [9,10].

Conclusion

Our study is limited by the small sample size and retrospective analysis. Further prospective studies are needed to evaluate the safety and effectiveness of laparoscopic repair of hernia in women. In conclusion, the age of onset of groin hernia in women and the range of presenting symptoms may differ from that of men. If a woman has persistent or undiagnosed hernia pain, she should be suspected of a possible occlusive hernia. Laparoscopy appears to be just as safe and effective as open repair for hernia in women, although there was no statistically significant improvement in

complication rates or recurrence rates. It is important to consider laparoscopy when: diagnosis is in doubt; Bilateral inguinal Hernia is present; or concomitant abdominal pathology is being addressed simultaneously.

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