



INGUINAL HERNIAS IN WOMEN – A CASE SERIES DECODING THE ENIGMA

General Surgery

Dr. Mohammed Sihab

MBBS, Postgraduate Student, Dept of General Surgery, ACS Medical College, Chennai.

Dr. Pratheep Karthick

MBBS, MS, Assistant Professor, Dept of General Surgery, ACS Medical College, Chennai.

Dr. Monisha Venugopal

MBBS, MS, Assistant Professor, Dept of General Surgery, ACS Medical College, Chennai.

Dr. Guru Prasad Ramasamy*

MBBS, MS, Mch, Surgical Oncologist, Associate Professor, Dept of General Surgery, ACS Medical College, Chennai. *Corresponding Author

Rohini

MBBS, MS, Assistant Professor, Dept of General Surgery, ACS Medical College, Chennai.

ABSTRACT

Inguinal hernias in women are relatively rare compared to men. All the more due to its varied presentations it is much more difficult to diagnose sometimes presenting only with pain. The aim of this study was to discuss the management of female inguinal hernias in adults. This was a retrospective study of adult females age > 18 years who had undergone inguinal hernia repair over a 4-year period between 2019 to 2023. The age, presenting symptoms, side of the hernia, interval between symptom and presentation, interval between presentation and surgery, operative procedure performed, intra-operative finding/content of the hernia sac, post-operative complications, and duration of hospital stay and outcome of treatment were assessed. A total of 26 cases of inguinal hernia repairs were undertaken during the study period. Out of this number, 16 were taken as elective cases, 4 as emergency cases and 6 as semi-emergency cases. 13 cases had omentum as content, 10 as small bowel, 2 as ovary and one as Appendix. Hernioplasty was performed in 19 cases while Herniorraphy was done in 4 cases and a combined Herniorraphy with Hernioplasty in 3 cases. Surgical site infection was the most common post-operative complication. Inguinal hernias in females may not be as common as inguinal hernias in males, but they pose a significant challenge both in diagnosis as well as in treatment. We require still more reporting and coordination to go further in understanding this complex entity.

KEYWORDS

Female hernias, Inguinal, Hernial contents, Herniorraphy, Hernioplasty.

INTRODUCTION

Groin hernias are a common entity in surgical practice with much higher percentage occurring in men than women. Of the groin hernias even though femoral hernias occur more in women than men, the most common groin hernia to occur in women is still Inguinal hernia. This data has been validated in few studies. Approximately 75% of abdominal wall hernias occur in the groin. The lifetime prevalence of groin hernias is 27% in men and 3% in women. The frequency of groin hernia repair rises from 0.25% in patients 18 years of age to 4.2% in patients 75 to 80 years of age [1]. Inguinal hernias in females were found to occur commonly in young girls who had other congenital anomalies and they often present early to Paediatric surgeons. But Inguinal hernias in adult women are a poorly understood entity who present with vague symptoms, considerable delay in reporting to a health care professional, the inability of investigations to pick up early, overlooking the diagnosis if it has covert symptoms and paucity of data makes Inguinal hernias in women a challenging enigma. We will try to decode it in this article.

Patients with a groin hernia may report a bulge in the groin that becomes progressively larger over time. Most patients with groin hernias report pain or vague discomfort, but up to one-third of patients have no symptoms [2]. The symptoms may worsen with standing, straining, lifting, or coughing. Patients may report having symptoms only at the end of the day or after prolonged activity and that the bulge disappears when they are lying flat. However, the absence of a reducible mass or palpable defect does not rule out a hernia. In a subset of patients, groin or pelvic pain is caused by an occult hernia.

MATERIALS AND METHODS

We collected the data of all female Inguinal hernia patients who reported to our hospital over the past four years from June 2019 to June 2023 retrospectively with a minimum follow up period of 6 months after intervention and analysed the data.

Inclusion Criteria

Patients attending surgical OPD who are:

1. 18 years or more

2. Only women patients included

3. Only Inguinal hernia patients

Exclusion Criteria

1. Below 18 years
2. Femoral hernias and incisional hernias
3. Previously treated at another centre.

Standard examination was carried out by an expert surgeon. During the entire period patients were properly evaluated and recorded by photography systematically for comparison in future. In total there were 26 female patients who were identified as having Inguinal hernias. They had undergone thorough clinical examination, imaging and other work up wherever necessary. The patients were subjected to surgery either as an emergent operation if it was obstructed or a strong suspicion of strangulation. Otherwise, the patients were taken as an elective procedure if it was an uncomplicated Inguinal hernia. All patient underwent surgical exploration. After inguinal exploration, hernial sac was identified; hernial sac was opened first to look for the contents. During surgical exploration we avoided manual reduction of hernia content before opening the hernial sac. Once contents were identified, contents were reduced manually and hernial sac was dissected up to the deep ring. It was then transfixed, ligated and divided at deep ring and rest of the sac was removed. After dealing with the hernia intraoperatively by reducing the contents the posterior wall of the Inguinal canal was strengthened by in either of the two ways; herniorraphy in emergency situation and hernioplasty by using a polypropylene mesh in elective scenarios. The patients had a postoperative hospital stay on a case-to-case basis which varied. All the patients were followed up regularly for a minimum of 6 months post intervention to record and address any complications.

Statistical analysis was performed using SPSS, version 18.0 software

RESULTS

Total Patients: 26

Age Distribution

Elucidated in Figure 1.

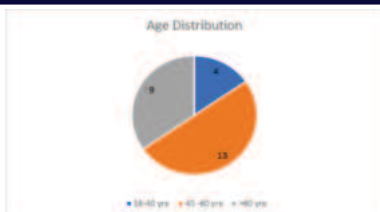


Figure 1: Age Distribution Of Patients

Symptoms: (Figure 2)
 Groin pain without swelling: 8
 Groin Swelling: 16
 Groin swelling with pain: 2

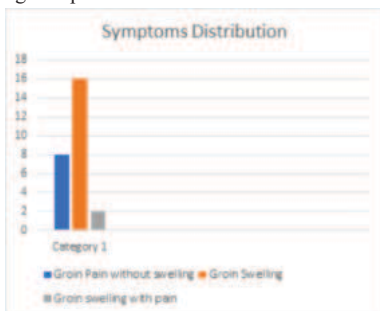


Figure 2: Symptom Distribution

Symptoms Duration:
 1 day – 2 patients
 Less than 1 week – 3 patients
 Less than a month – 11 patients
 More than a month – 10 patients

Median age of the patients is 47 years
 Mean interval between symptom and presentation is 2 months
 Interval between presentation to hospital and surgery is 3.1 days
 The mean duration of hospital stay is 2.4 days

Type of swellings: (Table 1)

Table 1:

S.No.	Swelling Type	Number of cases	Percentage
1	Inguinal swelling, reducible	11	42.3%
2	Inguinal swelling, irreducible	6	23%
3	Inguinal swelling, obstructed	4	15.3%
4	Only groin pain	5	19.2%
	Total	26	100%

Type of Setting of Surgery:

Emergency procedures - 4

Elective procedures - 16

Semi emergency – 6

We took the irreducible cases as semi emergency and operated on priority basis

Figures (1-4) show a 45 years old woman with an obstructed right inguinal hernia who clinically had visible intestinal peristalsis. She was taken for emergency surgery and the content was found to be small bowel which was congested. A herniorrhaphy was done as there was some dirty fluid in the inguinal canal and sac.

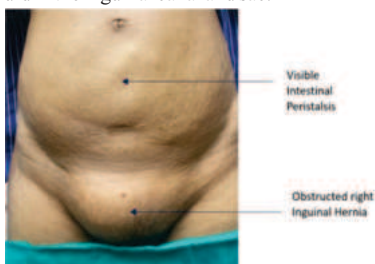


Figure 1: A Case Of Obstructed Right Inguinal Hernia



Figure 2: The Same Case On Emergency Exploration Showed Small Bowel As Content



Figure 3: Hernia Reduced And Sac Transfixed At The Level Of Deep Ring

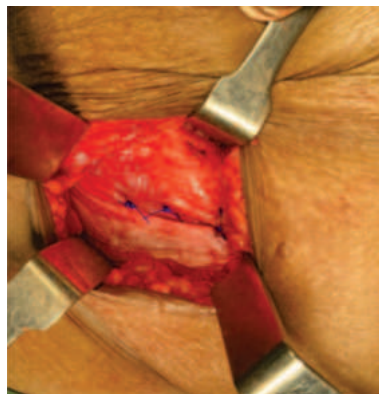


Figure 4: Herniorrhaphy (Modified Bassini's Repair) Was Done In Emergency Setting

Content of Hernia found during Surgery: (Table 2)

Table 2:

S.No.	Content	Number	Percentage
1	Omentum	13	50%
2	Small bowel	10	38.4%
3	Ovary	2	7.6%
4	Appendix	1	3.8%
	Total	26	100%

Type of Repair:

Herniorrhaphy - 4

Hernioplasty - 19

Combined approach – 3

In three cases of elective procedure, we resorted to a combination of both Herniorrhaphy (Modified Bassini's Repair) and a Mesh repair due to a very weak posterior inguinal canal wall.

Recurrence after 2 years happened in one of the cases done in emergency which we tackled with Hernioplasty.

Figures (5-8): A case of reducible inguinal hernia in a 62 year old which

on exploration had a right indirect sac. As it was a clean case we performed hernioplasty

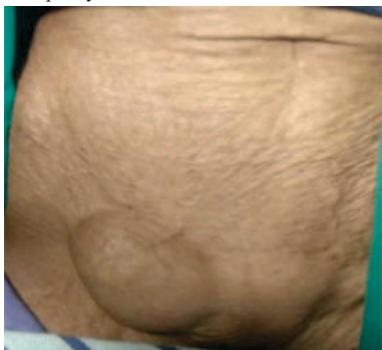


Figure 5: Right Reducible Inguinal Hernia

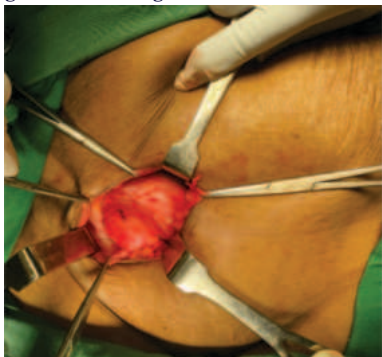


Figure 6: Showing The Right Indirect Sac Which Is The Commonest Type In Females



Figure 7: Separating The Sac, Reducing The Contents Of Inguinal Canal.



Figure 8: Hernioplasty With Prolene Mesh Is Preferred In Most Of The Cases To Prevent Recurrence

DISCUSSION

Data on groin hernias in women are less compared to that in men. One reason might be the low incidence but also due to inadequate reporting of these entities as they are scattered across geographically. As ours being a tertiary care hospital and referral centre we received patients over four years to establish this data. Various studies on inguinal hernia quote that the incidence in females is only 1.9% and the ratio of boys to

girls is 6:1. That being simplified as 1 male in 5 and 1 female in 50 eventually develop inguinal hernia in their lifetime [3]. The risk factors for inguinal hernia in females. Are still elusive. While few researchers point that high sports activity is protective in inguinal hernia. While the expected risk factors like appendectomy, abdominal operations, smoking and multiple deliveries are not associated with inguinal hernia in females [4]. As in males' obesity, chronic coughing, constipation and straining to pass stools are some of the factors associated with hernia. Some proponents opine that hernia in females occurs due to nonclosure of the processus vaginalis. In it tissue protrudes through the internal ring and passes down the inguinal canal a variable distance. The other content of the inguinal canal being the round ligament. Protective effects of sports activity in females can be rationalised by the fact that there is an increased resistance of the abdominal wall muscles protecting the relatively small inguinal weak point. Because of the stretching due to pregnancy, the transversalis fascia is stronger in the posterior wall of the inguinal canal and hence has protective effect, so direct hernia in females is quite rare [5].

Though the anatomy of a female Inguinal canal sounds simple without the cord structures as in males, it is only an illusion, the reason being the myriad presentations. In women, groin hernias sometimes do not present with a visible bulge. However, a bulge can be detected with straining, these are occult hernias [6]. Ultrasonography, is an easy tool for assessment but has a sensitivity of 33% to 86% and specificity of 77% to 90% for occult hernias [7,8]. Magnetic resonance imaging (MRI) may be considered if the clinical suspicion of a groin hernia is high despite negative ultrasound findings. MRI has a sensitivity of 91% and specificity of 92% [9]. In females who present only with pain without a visible groin swelling other differential diagnosis like Endometriosis, Pelvic Inflammatory Disease, Diverticulosis and Appendicitis should also be taken into consideration.

Even though asymptomatic hernias may be found incidentally on physical examination, groin pain as a dull aching or a pulling sensation often brings the attention to the patient. Localized discomfort may develop from stretching or tearing of the tissue at or around the site of the hernial defect. It can be irreducible, or obstructed at times posing a challenge even to the experienced surgeon. Severe pain could suggest that the hernia has become incarcerated and require emergent surgical intervention. In emergency situations which on exploration there was always dirty fluid in the sac and the it was not advisable to keep a mesh as the chances of infection and mesh extrusion are high. So, we resorted to Herniorrhaphy after weighing the risk benefit ratio. Herniorrhaphy when done meticulously in emergency scenario where obstruction was present which always had a congested bowel that required 100% oxygen and warm towels to revive the compromised bowel showed results equivalent to that of hernioplasty. In few cases of irreducible hernias, the content was omentum and almost three fourths of them were not healthy and we excised the portion of the omentum. In comparison to male hernias where the narrowest point in obstruction was often the deep inguinal ring, in women it was the superficial ring and found in older women where there was space in the pubic region for the bowel to get obstructed.

A wide range of contents can surprise the surgeon at the time of surgery apart from small bowel and omentum. Ovary as a content is reported commonly in girls but in women it was comparatively very less. Found naturally in those were still in premenopausal or perimenopausal age group. Inguinal hernia containing the ovary is a complex lesion necessitating a careful and meticulous dissection with least trauma to the ovaries. Apart of the ovaries, fallopian tube and part of uterus can also find its way in to the hernia sac [10,11]. Therefore, the hernial sac in a female patient is like a pandora's box. Usually in children with inguinal hernias about one quarter of the hernia sac contains the ovary or fallopian tube but as found in our study it is very rare in adults. Two cases that occurred in our study, both were 20-year-olds (Figure 9, 10)

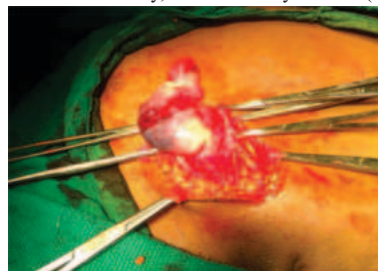


Figure 9: Patient With A Painful Inguinal Swelling – Congested Ovary As Content On Right Side



Figure 10: The Ovary With Precarious Blood Supply Was Excised.

In women, the percentage of femoral hernias is 16.7–37% out of all the groin hernias. So, they should also be ruled out in the presence of female inguinal hernias. The rate of emergency procedures in women, at 14.5–17.0%, is 3 to 4-fold higher than in men and at 40.6% is even higher for femoral hernia. Therefore, watchful waiting is not indicated in groin hernias in women [12]. So, during surgical repair of groin hernia in females the presence of a femoral hernia should always be excluded and if detected should be repaired along with it. In women above 50 years most of them had Malgagnian bulges on examination which denotes that it goes beyond a small area of weakness and requires careful repair. Though most of the times it is an indirect hernia it sometimes has a combination of direct and indirect hernias. In our study we found that over the age of 50 years the posterior wall of the Inguinal canal is often so weak even though technically there isn't a direct hernia we found it technically demanding to repair such a weak wall and that may be one of the reasons for recurrence in a 72-year-old we mentioned earlier. So that was the reason we excised the round ligament in those cases and placed a synthetic nonabsorbable polypropylene mesh in all the cases where it was warranted. The mesh extended right from the pubic symphysis to close to anterior superior iliac spine beyond the deep ring fixing it to pubic tubercle, inguinal ligament and internal oblique muscle. The mesh placement was comparatively easier than in males. The presence of spermatic cord in males serves as a guide to the surgeon while in female inguinal hernia the absence of cord makes the surgeon tread an unfamiliar territory. That's the reason sometimes surgeons might end up injuring the structures in the sac in females. If it is an injury to the bowel and we haven't realised it might have dire consequences.

The mean interval of 2 months between when the symptom was first noticed and the time of presentation to the hospital highlights the implications of ignorance, poverty, less priority given to women in low resource countries and less access to health care. Till date, there are less number of studies and hardly few systematic reviews specifically concentrating on groin hernia in women. All guidelines for the repair of groin hernia point to the special characteristics in women and these should be followed in hernia repair in women. But even when protocols are followed in females, the perioperative outcomes appear to be less favourable than in men [12]. Hence, we opine female Inguinal hernias are still an enigma and we have to pool in further data to decode it further.

CONCLUSION

Inguinal hernias should always be considered as a differential diagnosis in women with pelvic pain especially if the symptoms are odd and the preliminary investigations does not point towards a concrete pathology. A strong clinical suspicion will go a long way than a plethora of investigations. Inguinal hernias even with overt swelling, summons the anatomical knowledge of the surgeon to get best long-term outcomes.

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