Original Article

New Indian Journal of Surgery
Volume 15 Number 3/July - September 2024
DOI: https://dx.doi.org/10.21088/nijs.0976.4747.15324.2

Clinical Presentation and Outcome of Adult Groin Hernia

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How to cite this article:
Sumit Salve, Anitha Kandi, Avinash Surwade, *et al*. Clinical Presentation and Outcome of Adult Groin Hernia. New Indian J Surg. 2024; 15(3):101-105.

Abstract

Aims & Objectives: To study the groin hernias in adult and its outcome in terms of clinical presentation, precipitating factors, intra-operative findings & complications.

Materials and Methods: This prospective clinical observational study was carried out in 400 patients with complaints related to the groin region to the department of general surgery in a tertiary care center over a period of 2 years after ethical committee approval.

Observation & Results: In this study inguinal swelling was the most common presentation in (77.25%), followed by localized pain in swelling (12%), localized pain in swelling with vomiting (2.25%) localized pain, vomiting And constipation in (5.75%) and distention in (1.25%) patients.The male-to-female ratio of groin hernia was 13.3, indicating a male preponderance. Unilateral groin hernias (83.5%) with right sided preponderance (49.75%) were more common than bilateral cases (16.5%) Uncomplicated groin hernias were seen in 86.75% patients while complications were seen in 12.25% patients as irreducible (6.75%), obstructed (4.25%) and strangulated (2.25%) In emergency operated case 1 patient had anastomostic leak in post-operative period and patient later succumbed. In 2.25% emergency and 1.5% elective patients had surgical site infection.

Conclusion: In this study we found an association between groin hernias&various precipitating factors, comorbidities and occupation .Both complicated and uncomplicated groin hernias are most common in males. Uncomplicated groin hernias are more prevalent than complicated ones. Uncomplicated groin hernias are posted for elective hernia repair &are managed by Lichtenstein's tension free mesh repair while incidence of complicated groin hernias is low and requires emergency surgical management &is associated with high morbidity and mortality.

Keywords: Groin hernias; hernia repair.

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Received on: 29-08-2024

Accepted on: 16-10-2024

INTRODUCTION

Hernia is defined as a protrusion of a viscus or part of viscus through an opening in the wall of the cavity in which it is contained. Groin hernias are the most common types of hernia and account of 75% of all abdominal wall hernia. Inguinal hernias account for 95% of these and femoral hernias the rest.[1] Groin hernias are a very common problem in surgical practice.

Longer duration of symptoms, late presentation, concomitant diseases and high ASA class are found to be significant factors linked with unfavorable outcomes.[1,2]

Groin hernia has varied presentation and treatment depends upon duration and type of presentation.[3,4] Irreducibility, obstruction and strangulation are its commonest complications which presents as acute emergencies. The treatment of hernia is surgery. Different techniques such as Bassini's, Stopa's, Shouldice's, Darning, Lichtenstein and Laparoscopic repair have been evolved for repair of inguinal hernias.[5] The mainstay of surgery is tension free repair of posterior wall of inguinal canal.[2,3]

Strangulation, the most common serious complication of a hernia, occurs in only 1% to 3% of groins and is more common at the extreme of age.[4,6,7] Most strangulated hernias are indirect inguinal hernias, however femoral hernias have the highest rate of strangulation.[2,3,4] Emergency repair of complicated hernias is associated with poor prognosis and a high rate of post-operative complications even with better care and improved anaesthetic management.[6,7] Co-morbid conditions, short duration of symptomatology and old age group are the major risk factors which predict complications in elder adults with groin hernia.[3,4,5]

Thus, the purpose of this research was to study the various modes of presentation, clinical and operative findings and post operative outcome in adult groin hernia in tertiary care centre.

MATERIALS AND METHODS

Present prospective clinical observational study was carried out in 400 patients admitted with groin hernia to department of general surgery in a tertiary care center from 1 November, 2018 to 31 March, 2020 after ethical committee approval.

AIM AND OBJECTIVES

Aim: To study the clinical presentation of groin hernia in adult and its outcome.

Objectives

- To study the clinical presentations of groin hernia in terms of:
  1. Site and side
  2. Precipitating factors
  3. Type of hernia
  4. Clinical features
- To study the intra-operative diagnosis and surgical intervention for each hernia
- To study the outcomes in terms of intra-operative and post-operative complications

Inclusion Criteria

- All patients of groin hernia above 18 years age.

Exclusion Criteria

- All patients of groin hernia below 18 years age.
- Those who are not willing to enroll in study.

Data Collection and Clinical Evaluation

This was a prospective clinical observational study carried out in 400 patients with complaints of groin swelling. On presentation history was taken& a detailed examination was performed. If the patient had irreducible swelling & an absent cough impulse patient was admitted immediately & was posted of emergency surgery after adequate resuscitation & laboratory investigation. Other patients with reducible swelling were sent for routine blood (CBC, KFT, LFT, HHH, etc.) & radiological (Ultrasonography was done to rule out BPH & X-ray abdomen erect) investigations & followed up. Per rectal examination was done in all cases to rule out prostate enlargement. These patients were admitted after complete anaesthetic evaluation & were posted for routine hernia repair surgery.

Any underlying risk factor or medication if any were enquired.

Almost all patients wereoperated under spinal anaesthesia. Occasionally general anaesthesia was given.

An appropriate incision was taken for thetype of hernia, sac was dissected out and was opened. The

site of constriction was noted and the contents of the sac were seen. The bowels were examined for viability. When doubtful or nonviable bowel was seen, oxygen was administered for 3-4 minutes and a warm saline mop was placedon the intestinal loops. If the color returned, peristaltic waves seen on stimulation and mesenteric pulsations felt, the bowel was returned to the abdomen. When the bowel was non-viable, it was resected and end to end anastomosis was done. Appropriate repair of the hernia was done. The resected specimen was sent for histopathologic examination. Hernia repair was done with mesh placement whenever possible. Sutures were removed on the 7th or 8th day and were discharged. Patients were advised for follow-up and also advised against lifting heavy objects for 3 months.

RESULTS

Table 1: Distribution of patients according to side of hernia

Side	Type of hernia		No. of patients
	Inguinal	Femoral	
Right	197	2	199
Left	135	0	135
Bilateral	66	0	66
Total	398	2	400

Table 2: Distribution according to precipitating factors

Precipitating factor	Type of hernia		No. of patients
	Inguinal	Femoral	
COPD	34	0	34
Urethral stricture	21	0	21
TB	26	0	26
BPH	50	0	50
COPD+BPH	12	0	12
None	255	2	257
Total	398	2	400

Table 3: Distribution according to clinical presentation

Symptom	Type of hernia		Total
	Inguinal	Femoral	
Swelling alone	309	0	309
Localized pain in swelling	52	0	52
Localized pain in swelling with vomiting	9	2	11
Localized pain in swelling with vomiting and constipation	23	0	23
Localized pain in swelling with vomiting, constipation and abdominal distension	5	0	5
Total	**398**	**2**	**400**

Table 4: Distribution according to type of hernia on clinical examination

Type of hernia	Type of hernia		No. of patient
	Inguinal	Femoral	
Reducible	347	0	347
Irreducible	27	0	27
Obstructed	15	2	17
Strangulated	9	0	9
Total	398	2	400

Table 5: Distribution according to type of hernia on Intra-operative Diagnosis

Intra-operative diagnosis	Management		Total
	Emergency	Elective	
Direct hernia	0	128	128
Indirect hernia	33	213	246
Pantaloons hernia	4	20	24
Femoral hernia	2	0	2
	39	261	400

Table 6: Distribution according to intervention

Surgery done	Management		Total no of patients
	Emergency	Elective	
Lichtenstein Tension free mesh repair	0	345	345
Hernia contents reposited in abdomen with herniorraphy	3	8	11
Release of adhesion with reposition of Saccontentin abdomen with herniorraphy	15	6	21
Omentectomy and herniorraphy	10	0	10
Omentectomy, bowel resection, end to end anastomosis and herniorraphy	9	0	9
Laparoscopic hernia repair	0	2	2
Femoral hernia repair	2	0	2
Total	**39**	**361**	**400**

Table 7: Distribution of cases according to complications

A	Complication	Management		Total
	Intra-operative	Emergency	Elective	
1.	Bleeding	10	14	24
2.	Spermatic cord injury	0	1	01
3.	Bowel perforation	1	0	01
4.	None	28	346	374
	Total	39	361	400

Table cont...

B	Post-operative			
1.	Surgical site infection	13	6	19
2.	Cord oedema	8	8	16
3.	Anastomotic leak	1	0	1
4.	Death	1	0	1
5.	None	16	347	353
		39	361	400

DISCUSSION

Demography

In the present study out of 400 patients, the youngest patient was 19 year old and eldest patient was 89 years old and the mean age was 56.85 years. Maximum patients were found in age group 61-70 years in uncomplicated as well as complicated cases of operated for groin hernias. Present study correlates with Ratan *et al.* and Sushanta *et al.*[8] and Agrawal S N *et al.*[9]

The male to female ratio was 13:1 showing male preponderance. Present study correlates with Rao SS *et al.*[10], and Sushanta and Ratan R, Singh S *et al.*[11]

There was right sided preponderance 49.75% in groin hernia and 16.5%. (Table 1). Present study correlates with Rao SS *et al.*[10] and Singh S *et al.*[11] and Sushanta Tripathy and Ratan *et al.*[8]

Precipitating factors: (Table no.2)

Benign Prostatic Hyperplasia (12.5%) was the most common precipitating factor in groin hernia followed by COPD (8.5%). Present study correlates with M ceresoli *et al.*, Rao SS *et al.*[10] and Susanta Tripathy and Ratan R study.[8]

Clinical presentation: (Table 3)

In the present study swelling was present in 309 (77.25%) cases of inguinal Hernia. Localized Pain in hernia swelling was present in 52 (13%) cases of inguinal hernia. Localized Pain in hernia swelling with vomiting was present in 9 (2.25%) cases of inguinal and 2 (0.50%) cases of femoral hernia. Localized Pain in hernia swelling, vomiting and constipation was present in 23 (5.75%) cases of inguinal. Localized Pain in hernia swelling, vomiting and constipation, abdomen distention was present in 5 (1.25%) cases of inguinal hernia. Present study correlates with Singh *et al.*[11] sushanta and Ratan[8] and Dr Vinaykumar Teradal *et al.*[12] study.

Type of hernia on clinical examination and intra-operative evidence (Table no. 4 and 5 respectively)

In the present study of Groin hernia 347 (86.75%) were uncomplicated and 53 (13.25%) were complicated groin hernia. Out of 400 groin hernia cases 347 (86.75%) cases were reducible type, 27 (6.75%) were irreducible type, 17 (4.25%) were obstructed groin hernia in which 15 (3.75%) was inguinal hernia and 2(0.50%) had femoral hernia, and rest of the 9 (2.25%) cases were of strangulated hernia. Present study correlate with Rao *et al.*[10] and Dr. Devalik chowlek shyam *et al.* Susanta Tripathy and Ratan R *et al.*[8]

In both uncomplicated and complicated cases of inguinal hernias, indirect inguinal hernia (61.5%) was the most common finding where as Pantaloons hernia was seen in 20 cases (5%) of uncomplicated hernias. Both the cases of femoral hernias presented as complicated groin hernia and were seen in females.

In the present study, 213 (53.25%) indirect inguinal hernia, 128 (32%) direct inguinal hernia and 20 (5%) pantaloons hernia were managed electively. the remaining 33 (8.25%) indirect inguinal hernia and 4 (1%) pantaloons hernia, 2(0.50%) femoral hernia were managed by emergency intervention. The above results correlate with Singh S *et al.*[11] and Susanta Tripathy and Ratan R[8], Joseph B mabula *et al.*[4]

Type of intervention

In the present study in elective cases Lichtenstein tension free mesh repair was done in 345 (86.25%) cases and 2 (0.50%) cases were managed by laparoscopic hernia repair. Electively, hernia contents reposition in abdomen with herniorraphy was considered in 3 (0.75%) cases and release of adhesion with reposition of sac content in abdomen with herniorraphy was performed in 6 (1.5%) cases .In emergency management, hernia contents reposition in abdomen with herniorraphy was performed in 8 (2%) cases, release of adhesion with reposition of sac content in abdomen with herniorraphy was performed in 15 (3.75%) cases. Omentectomy and herniorraphy was performed in 10 (2.5%) cases .Omentectomy, bowel resection, end to end anastomosis and herniorraphy was performed in 9 (2.25%). Two patients with obstructed femoral hernia were managed by high inguinal approach with femoral hernia repair in emergency. Present study correlates with Rao SS *et*

al.[10] and Makio Mike al and Milivoje Vukovic *et al*.

Intra-operative complications (Table 7A)

In the present study Intra-operative bleeding present in 8 (2%) cases of emergency and 12 (3%) cases of elective management. Spermatic cord injury in 1 (0.25%) cases of uncomplicated case of inguinal hernia surgery. Iatrogenic bowel perforation seen in 1 (0.25%) case of complicated presentation of groin hernia. While rest of the uncomplicated 346 (86.5%) and complicated 28 (7%) groin hernia there was no Intra-operative complications present. Present study correlates with Rao SS *et al*.[10] study

Post-operative complications: (Table 7 B)

In the present study surgical site Infection was present in 13 cases (3.25%) of emergency and 6 cases (1.5%) of elective surgical management. Cord oedema was present in 8 cases (2%) of emergency and 8 cases (2%) of elective surgical management. Mortality due to septicaemia secondary to anastomotic leak was seen in 1 operated case of strangulated inguinal hernia who underwent emergency surgical treatment. Of the 400 cases, 347 (86.75%) cases of uncomplicated groin hernias and 16 cases (4%) of complicated hernias had no post operative complications. Present study correlates Susanta Tiwari and Ratan R[8], Goddam padmasree *et al*.

Conflicts of Interest

The authors declare that there were no conflicts of interest regarding the publication of this paper.

CONCLUSION

In this study we found an association between groin hernias & various precipitating factors, comorbidities and occupation. Both complicated and uncomplicated groin hernias are most common in males. Uncomplicated groin hernias are more prevalent than complicated ones. Uncomplicated groin hernias are posted for elective hernia repair & are managed by Lichtenstein's tension free mesh repair while incidence of complicated groin hernias is low and requires emergency surgical management & is associated with high morbidity and mortality.

REFERENCES

1. Malangoni MA, Gagliardi RJ (2004) Hernias: Townsend CM, Beauchamp RD, Evers BM, Mattox KL editors. Sabiston's Textbook of Surgery. (17th edn.), Elsevier-Saunders, Philadelphia, London, 1199-1218.
2. Fitzgibbons RJ, Jr; Forse, RA(19 February, 2015)."Clinicalpractice.Groinherniasinadults". The New England Journal of Medicine.372(8):756–63.
3. Primatesta P, Goldacre MJ. Inguinalherniarepair: Incidenceofelective and emergency surgery, readmission and mortality. Int J Epidemiol 1996; 25:835-9.
4. Mabula JB, Chalya PL. Surgical management of inguinal hernias at Bugando Medical Centre in Northwestern Tanzania: Our experiences in a resource-limited setting. BMC Res Notes 2012; 5:585.
5. QuinnTH. Anatomy of the Groin: A view from the Anatomist. Chapter In: Fitzgibbons R, Greenberg G, editors. Nyhus and Condon's Hernia: Philadelphia USA: Lippincott Williams and Wilkins, 2002, 55.
6. Kingsnorth AN, LeBlanc KA. Management of Abdominal Hernias. 3rd ed. London, New York: Edward Arnold; 2003. p. 40-7.
7. Vincent PJ, Singh Y (2000) Modern Management of Inguinal Hernia. Med J Armed Forces India 56:323-327.
8. Susanta Tripathy & Raj Ratan. Presentation & Clinical Outcome of Inguinal Hernia in Elderly Adults in 5th Decade or Later: A Prospective Descriptive Study! New Indian J Surg. 2018; 9(6):771-80.
9. Agrawal SN. A Study of the Demography, Clinical Features and Management of Inguinal Hernia in a Tertiary Care Hospital. J Surgery. 2018; 6(2):5.
10. Rao SS, Singh P, Gupta D, Narang R. Clinicoepidemiologic profile of inguinal hernia in rural medical college in central India. J Mahatma Gandhi Inst Med Sci 2016; 21:116-21.
11. Singh S, Prakash R, Singh V. A clinical study of inguinal hernia with special reference to laparoscopictrans-abdominal preperitoneal repair. Int Surg J 2017; 4:282-90.
12. Dr. Vinaykumar Teradal, Dr. Bharat Kumar Bidinahal and Dr. Jyoti Karegoudar. Clinical profile of patients with inguinal hernia. International Journal of Surgery Science 2019; 3(1): 197-200.