

A Retrospective Study on Prevalence of Recurrent and Primary Inguinal Hernia in a Tertiary Care Teaching Hospital

Prabodh Bansal¹, Anil Mongia^{2*}

¹Assistant Professor, Department of Surgery,
Saraswathi Institute of Medical Sciences, Hapur Rd, Anwarpur, Uttar Pradesh, India.

^{2*}Assistant Professor, Department of Surgery,
Shrived Suman Subharti Medical College, Dehradun, Uttarakhand, India.

ABSTRACT

Background: Inguinal hernia is defined as invagination of abdominal cavity along with its contents through the inguinal canal. Both primary and recurrent inguinal hernia is frequently encountered problems in the outpatient department. Present study was conducted with the aim of identifying the incidence of primary and recurrent inguinal hernia and to determine whether any specific risk factors are associated with it.

Materials and Methods: The present retrospective study was conducted in the Department of Surgery, Saraswathi Institute of Medical Sciences, Anwarpur, UP (India). This study was based on data of last 4 years. A data collection sheet containing salient points of recurrence and repair was prepared. All the data was collected in these sheets. Information regarding patient's history, type of hernia, time of repair and time of recurrence were noted. Information on the type of surgical repair was also noted. All the data thus obtained was arranged in a tabulated form and SPSS software was used for analysis. Student T test was used for evaluating the results.

Results: Present study included 320 subjects but there was inadequate information available for 2 patients, so they were excluded from the study. The mean age of subjects in this study was 29.27±11.8 years. There were majority of males (72.9%) and rest of females. There were 68.5% cases (n=218)

of primary inguinal hernia and 31.4% cases (n=100) of recurrent inguinal hernia. There were 38.1% cases (n=121) of early recurrence i.e. recurrence occurring within 2 years of primary repair. There were 61.7% cases (n=197) of late recurrence i.e. recurrence after two years of primary repair.

Conclusion: In our present study, the prevalence of recurrent hernia was 31.4% with 87.7% of the males being involved. Repeated hernial surgeries increase the morbidity of the patient and also become a burden for the hospital. Steps should be taken to decrease the recurrence of the disease.

Keywords: Inguinal, Hernia, Surgical, Recurrence.

*Correspondence to:

Dr. Anil Mongia,
Assistant Professor, Department of Surgery,
Subharti Medical College, Dehradun, Uttarakhand, India.

Article History:

Received: 02-04-2017, **Revised:** 27-04-2017, **Accepted:** 18-05-2017

Access this article online	
Website: www.ijmrp.com	Quick Response code 
DOI: 10.21276/ijmrp.2017.3.3.084	

INTRODUCTION

Inguinal hernia is defined as invagination of abdominal cavity along with its contents through the inguinal canal. Both primary and recurrent inguinal hernia is frequently encountered problems in the outpatient surgical department.¹ It is more common in men as compared to women, 27% of the men during their lifetime and 3% of women during their lifetime suffer from this.² There are about 500,000 cases of abdominal hernia that are reported every year.³

The exact etiology behind inguinal hernia is unknown and there is little epidemiologic data available regarding its occurrence. There are different varieties of inguinal hernia that occur at a variable rate and they vary with age, it is seen that in children indirect inguinal hernia is most common.⁴ The most common and frequent problem while operating inguinal hernia is its recurrence, in spite of various advancements in the treatment modality. It has been

reported that 13% of all the groin hernia cases are of recurrent hernia.⁵ According to a survey conducted in US, the prevalence of non-surgically operated inguinal hernia was 5-7%.³ The various other complications associated with inguinal hernia include bowel strangulation, obstruction of bowel and incarceration. Surgical repair of inguinal hernia is the most commonly performed surgery for both adults and children. Inguinal hernia represents 95% of groin hernias.⁴ There is paucity of data on the recurrence rates of inguinal hernia. In today's era, there has been a tremendous rise in the number of septic complications, even with so much advancement in sterilization techniques.⁶ Different types of surgical repair offer different recurrence rate.⁷ The present study was conducted with the aim of identifying the incidence of primary and recurrent inguinal hernia and to determine whether any specific risk factors are associated with it.

MATERIALS AND METHODS

The present retrospective study was conducted in the Department of Surgery, Saraswathi Institute of Medical Sciences, Anwarpur, UP (India). This study was approved by Institute's ethical board and male and female patients who were aged more than 12 years, belonging to ASA grade I and II were included in the study. Patients who underwent emergency repair for strangulation were excluded from study. The demographic details of patient's were collected. A data collection sheet containing salient points of recurrence and repair was prepared. All the data was collected in

these sheets. Information regarding patient's history, type of hernia, time of repair and time of recurrence were noted. Information on the type of surgical repair was also noted. All the patients who came for follow up were also included in the study, if the patient was unable to come for follow up then telephonic communication were established.

All the data thus obtained was arranged in a tabulated form and SPSS software was used for analysis. Student T test was used for evaluating the results.

Table 1: Prevalence of recurrent and primary inguinal hernia

S. No	Type	Frequency	Percentage	P Value
1	Primary inguinal hernia	218	68.5	>0.05
2	Recurrent inguinal hernia	100	31.4	

Table 2: Prevalence of type of recurrent inguinal hernia

Type	Frequency	Percentage
Early recurrent inguinal hernia	121	38.1
Late recurrent inguinal hernia	197	61.9

Table 3: Gender variation in the prevalence of inguinal hernia

Sex	Primary Inguinal Hernia		Recurrent Inguinal Hernia		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Male	190	87.15	89	89	279	87.7
Female	28	12.84	11	11	39	12.26
Total	218	100	100	100	318	100

RESULTS

Present study included 320 subjects but there was inadequate information available for 2 patients, so they were excluded from the study. The mean age of subjects in this study was 29.27±11.8 years. There were majority of males (72.9%) and rest of females.

Table 1 shows the prevalence of recurrent and primary inguinal hernia amongst the patients. There were 68.5% cases (n=218) of primary inguinal hernia and 31.4% cases (n=100) of recurrent inguinal hernia. There was no significant difference in the prevalence of primary and recurrent inguinal hernia (p>0.05).

Table 2 shows the types of recurrent inguinal hernia depending on the time of recurrence. There were 38.1% cases (n=121) of early recurrence i.e. recurrence occurring within 2 years of primary repair. There were 61.7% cases (n=197) of late recurrence i.e. recurrence after two years of primary repair.

Table 3 shows the variation in prevalence according to gender. Out of total 218 cases of primary inguinal hernia, 87.15% cases (n=190) occurred in males and 12.84% cases (n=28) occurred in females. Out of 100 cases of recurrent inguinal hernia, 89% cases were seen in males and 11% cases were seen in females. Majority of the males (87.1%) were affected by inguinal hernia.

DISCUSSION

Hernia is basically an opening in muscle or tissue through which various anatomic tissues protrude. These protrusions are most commonly seen in abdominal wall. Abdominal wall hernias account for 15-18% of all the surgical cases.^{8,9} The major factor of

concern for a surgeon while performing hernia surgery is recurrence. It is most important complication and it varies depending on the types of repair. According to our present study, the recurrence rate was found out to be 31.4%, which is high compared to the other studies on prevalence of recurrent hernia. In a study conducted by Indranil Basu et al¹⁰, in Kolkata, studying over 498 cases of inguinal hernia, they found that prevalence of recurrent hernia was 30.72%. In a study conducted by Shengulwar¹¹ to determine the prevalence of inguinal hernia, they found that there were 71.11% cases of primary inguinal hernia and 28.29% cases of recurrent inguinal hernia.

According to a study also males were more commonly affected as compared to females. The male to female ratio in this study was 7.25:1. In our study also there was male predominance, 87.7% of the males were involved. This male predominance could be due to anatomical variation and occupational differences amongst males and females. In a study conducted by Balram¹² to determine the predominance of inguinal hernia in Bundelkhand district, he also found that males were more frequently affected than females and the age group of 41-50 years was more susceptible to inguinal hernia.

In a study conducted by Basu et al¹⁰, there were higher chances of recurrence (60%) in case of indirect inguinal hernia. The major risk factor for inguinal hernia was heavy weight lifting due to this, laborers and construction workers are more prone to hernias. In our study there were many cases of early recurrence, this high

incidence of early recurrent hernia is majorly due to technical errors. Late recurrences are due to local tissue failure.¹³⁻¹⁵ Genetics play an important role in this disease. Family history plays a key factor in the type of hernia¹⁶ and recurrence of hernia.¹⁷ This increase in the incidence of hernia is becoming a burden for the patient and hospital by increasing the morbidity and length of hospital stay. Various immediate measures should be taken to curb this recurrence. Advancements in surgical technique with trained and experienced surgeons need to be adopted to decrease the recurrence rate.

CONCLUSION

In our present study, the prevalence of recurrent hernia was 31.4% with 87.7% of the males being involved. Repeated hernial surgeries increase the morbidity of the patient and also become a burden for the hospital. Steps should be taken to decrease the recurrence of the disease.

REFERENCES

1. A.P. Toms, A. K. Dixon, J. M. P. Murphy and N. V. Jamieson. *British Journal of Surgery*; 86, Issue 10, Pages 1243-1249, October 1999.
2. John T Jenkins, Patrick J O'Dwyer. Inguinal hernias. *British Medical Journal*. BMJ 336 (7638): 269–272.
3. Everhart JE. Abdominal wall hernia. In: Everhart JE, ed. *Digestive diseases in the United States: epidemiology and impact*. US Government Printing Office, Washington, DC; 1994:469–507 (NIH publication no. 94-1447).
4. Ein SH, Njere I, Ein A. Six thousand three hundred sixty-one pediatric inguinal hernias: a 35-year review. *J Pediatr Surg* 2006;41:980–6.
5. Kehlet H, Bay-Nielsen M. Nationwide quality improvement of groin hernia repair from the Danish Hernia Database of 87,840 patients from 1998 to 2005. *Hernia* 2008;12:1–7.
6. Bendavid R. Complications of groin hernia surgery. *Surg. Clin. North Am.* 78:1089–1103, 1998.
7. Haapaniemi S., Gunnarsson U., Nordin P., Nilsson E. Reoperation after recurrent groin hernia repair. *Ann Surg.* 234:122-126, 2001.
8. Mebula, J.B. and Chalya, P.L. Surgical management of inguinal hernias at Bugando medical centre in northwestern Tanzania: Our experience in a resource-limited setting. *Mebula and Chalya BMC Research.* 2012; 5: 585.
9. Primatesia P. and Golacre M.J. Inguinal hernia repair, incidence of elective and emergency surgery. *International Journal of Epidemiology.* 1996; 25: 835-839.

10. Basu I, Bhoj SS, Mukhopadhyay AK. Retrospective Study on Prevalence of Primary and Recurrent Inguinal Hernia and its Repairs in Patients Admitted to a Tertiary Care Hospital. *Indian Medical Gazette*; June 2013; 203-13.

11. Sayanna S. Prevalence of inguinal hernia in Indian population: a retrospective study. *Med Pulse Int Med Journal.* 2015;2(2):75-8.

12. Balram. Prevalence of Inguinal Hernia in Bundelkhand Region of India. *Annals of International Medical and Dental Research,* 2016; Vol (2), Issue (3),137-138.

13. Petra Lynen Jansen, Uwe Klinge, Marc Jansen and Karsten Junge. Risk factors for early recurrence after inguinal hernia repair; *BMC Surgery.* Volume 9, Published: Number 1, 18, DOI: 10.1186/1471-2482-9-18, 9th December, 2009.

14. E. H. Phillips, R. Rosenthal, M. Fallas, B. Carroll, M. Arregui, J. Corbitt, R. Fitzgibbons, A. Seid, L. Schultz, F. Toy, R. Wadell and B. McKernan. Reasons for early recurrence following laparoscopic hernioplasty; *Surgical Endoscopy.* Volume 9, Pages 140-145, Number 2 / February, 1995.

15. Lowham A.S., Filipi C.J., Fitzgibbons R.J. Jr, Stoppa R., Wantz G.E., Felix E.L., et al. Mechanisms of hernia recurrence after preperitoneal mesh repair: Traditional and laparoscopic. *Ann. Surg.* 225:422-431, 1997.

16. Lau H., Fang C., Yuen W.K., Patil N.G. Risk factors for inguinal hernia in adult males: A case-control study. *Surgery.* 141:262-266, 2007.

17. Junge K., Rosch R., Klinge U., Schwab R., Peiper Binnebosel M., et al. Risk factors related to recurrence in inguinal hernia repair: a retrospective analysis. *Hernia.* 10:309-315, 2006.

Source of Support: Nil.

Conflict of Interest: None Declared.

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Cite this article as: Prabodh Bansal and Anil Mongia. A Retrospective Study on Prevalence of Recurrent and Primary Inguinal Hernia in a Tertiary Care Teaching Hospital. *Int J Med Res Prof.* 2017; 3(3):408-10. DOI:10.21276/ijmrp.2017.3.3.084