

Inguinal Swellings Mimicking Hernia in Females: A Retrospective Study

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Abstract

Background: Inguinal hernia results from the failure of embryonic closure of the deep inguinal ring and is the most common cause of swelling in the groin region. However, an inguinal hernia is not the only cause for swelling in that region.

Objectives: The main aim and objective of this study were to evaluate female patients with swellings in the inguinal region in terms of incidence, clinical presentation, age distribution, and differential diagnosis.

Methods: The present clinical study was carried out at the Department of General Surgery; Shimoga Institute of Medical Sciences, Shimoga from March 2014 to March 2015. All the patients were thoroughly investigated, and surgical procedures were done.

Results: Among the 10 cases studied, 6 cases were the regular inguinal hernia and the rest 4 cases were a subcutaneous lipoma. The ultrasonography of the part had revealed it has hernias. Surgical procedures were done and specimens obtained were sent to histopathological examination.

Conclusion: The present study reveals that all inguinal swellings need not be a hernia and it can be due to other causes also and ultrasonography of the part is not the conclusive diagnostic tool.

Keywords: Inguinal hernia, Lipoma, Ultrasonography

INTRODUCTION

Inguinal hernia results from the failure of embryonic closure of the deep inguinal ring and are the most common cause of swelling in the groin region. About 27% of males¹ and 3% of females^{2,3} develop a groin hernia at some time in their life. Groin hernias occur most often before the age of one and after the age of 50.^{4,1} Inguinal hernias present with a lump in the groin that goes away with minimal pressure or when the patient is lying down. Most cause mild to moderate discomfort that increases with activity. A third of patients scheduled for surgery have no pain, and severe pain is uncommon (1.5% at rest and 10.2% on movement).⁵ About a third of patients

do not complain of symptoms directly attributable to a hernia.⁶

Indirect inguinal hernia is still the most common cause of the groin hernia for females.⁷ If a woman has the indirect inguinal hernia, her internal inguinal ring is patent which is abnormal for females. The eventual destination of the hernia contents for a woman is the labium majus on the same side, and hernias can enlarge one labium dramatically if allowed to progress. However, inguinal hernias are not the only cause for swelling in groin region;⁸ it can also be femoral hernia which may be mistaken for inguinal hernias and referred for surgical opinion on a non-urgent basis,⁹ subcutaneous lipoma, hydrocele or cyst of canal of Nuck,¹⁰ femoral artery aneurysm, inguinal lymphadenopathy, cold abscess, Bartholin's cyst, post-traumatic hematoma, rarely cystic lymphangioma, neuroblastoma metastasis in groin and ganglion.¹¹⁻¹³

Even though the indirect hernia is the most common cause of the groin hernia in females, all the groin hernia should

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be considered femoral hernia unless proved. Clinical examination of the swelling and necessary investigations must be done to differentiate the inguinal hernia from other causes of groin swelling in all cases.

Aims and Objectives

The main goal of this study was to evaluate female patients with swellings in inguinal region with extension up to labial fold in terms of:

1. Incidence, clinical presentation of cases, age distribution of cases
2. Differential diagnosis in the cases
3. Surgical procedures performed.

MATERIALS AND METHODS

The material for the clinical study of inguinal swellings in females was taken from 10 cases admitted to the Department of General Surgery; Shimoga Institute of Medical Sciences, Shimoga from March 2014 to March 2015. After admission, a detailed clinical history and physical examination were conducted. All patients were subjected to ultrasonography of the part after routine investigations. The patients were subjected to surgical procedures by an inguinal incision and specimens obtained were sent for histopathological examination.

RESULTS

A total of 10 cases were studied. People around 35-55 years formed the maximum numbers in the study. The age incidence is depicted in Figure 1 and Table 1.

The most common mode of presentation was swelling without pain. The distribution of presentation of the case is depicted in Table 2. The clinical finding of reducibility of the swelling is depicted in Figure 2. The reducible swellings were regular inguinal hernias, and irreducible swellings were found to be a subcutaneous lipoma. The inguinal hernia extended on to labia majora with reducibility and impulse on coughing. There was no evidence of the femoral hernia in any of these cases. But, ultrasonography of the part diagnosed these as inguinal hernias.

All the cases were operated through the inguinal incision. The specimen obtained after the surgery were sent for histopathological evaluation for confirmation. Figure 3 depicts the presentation and specimen of the lipoma cases.

DISCUSSION

Even though the femoral hernia is 20% common in females than males,¹⁴ the inguinal hernia is commonly seen in females. Some benign conditions such as lipoma

can occur in inguinal region and mimic inguinal hernia or obstructed inguinal hernia. Differentiation of groin hernias and swellings on clinical grounds is, therefore, unreliable; irrespective of the experience of the examining doctor.¹⁵ Clinical examination alone is inaccurate in differentiating groin swellings.¹⁵

Swellings in the inguinal region should be properly diagnosed pre-operatively for appropriate surgical

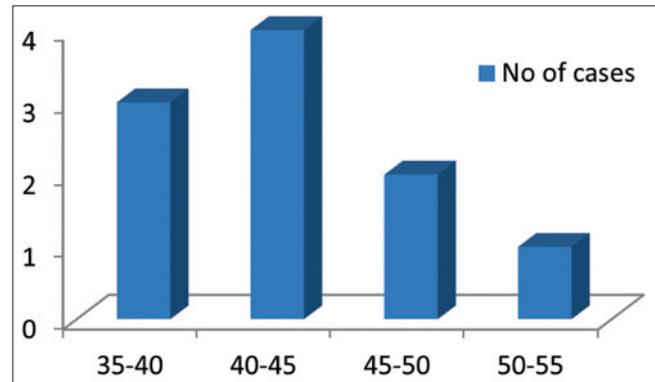


Figure 1: Age incidence

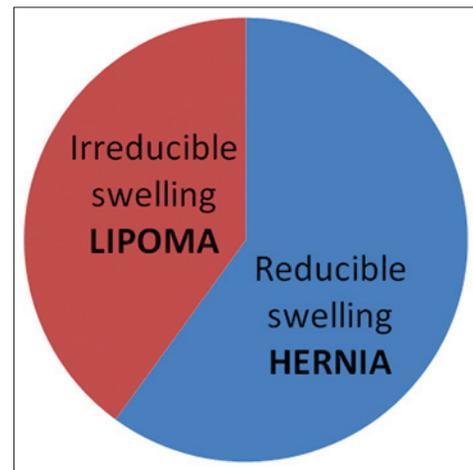


Figure 2: Clinical feature of swelling

Table 1: Age incidence of the cases

Age	Number of cases
35-40	3
40-45	4
45-50	2
50-55	1

Table 2: Presentation of the cases

Symptoms	Percentage of cases
Swelling with pain	20
Swelling without pain	70
No symptoms of hernia	10

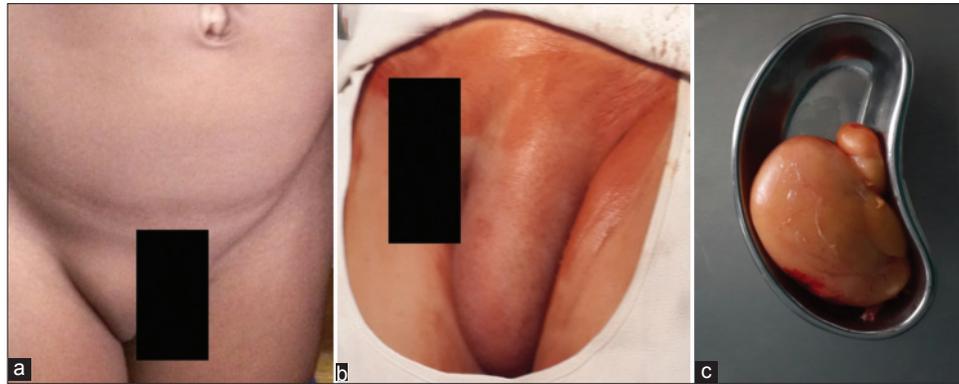


Figure 3: (a) Presentation, (b) presentation, (c) specimen

procedures.¹⁶ Ultrasonography, magnetic resonance imaging, and computed tomography (CT) have all been shown to be accurate in detecting and differentiating groin hernias.

Ultrasonography is widely available, non-invasive, and highly accurate in differentiating inguinal from femoral hernia with sensitivities and specificity of 100% being reported in two studies.^{17,18} Its accuracy is, however, operator dependent.

Magnetic resonance imaging has been reported to be more accurate than ultrasonography in detecting inguinal hernia.¹⁹ However, there is a lack of evidence for whether magnetic resonance imaging is better than ultrasonography in detecting and differentiating groin hernia. Therefore, ultrasonography should be the first choice for electively investigating suspected groin swellings as it is more widely available, less costly, and accurate.

CT scanning has been shown to be accurate in differentiating groin hernias. One retrospective study reports, the correct identification of 74 of 75 hernias (28 femoral and 47 inguinal), which were later confirmed at operation.²⁰ This is broadly comparable with the non-invasive modalities outlined above, but as there is a substantial radiation dose associated with CT scanning, it should not be used electively for investigating suspected groin hernia.

In the present study, the ultrasonography of the part revealed the swelling as hernias for all the 10 cases. So, ultrasonography is only a part of the investigative procedure and not the conclusive diagnostic tool. A detailed clinical evaluation and imaging study of the part will help in diagnosing these cases.

The results obtained in this study is in concurrence with studies done in this regard which also shows different rare diagnosis with patients presenting with inguinal

swellings.^{8,10} The aid of investigations is must for all the inguinal swellings but no one specific investigation can be chosen for a particular case. Therefore, all the necessary investigations should be done pre-operatively for avoiding the complications on the table. Establishing a definitive diagnosis on clinical examination is challenging, radiological imaging may assist in diagnosis, but surgical exploration is critical for final diagnosis.

CONCLUSION

Thus, from the present study and the records available it can be concluded that all inguinal swellings need not be the inguinal hernia, and it can be due to other causes also, and ultrasonography of the part is not the conclusive diagnostic tool.

REFERENCES

1. Fitzgibbons RJ Jr, Forse RA. Clinical practice. Groin hernias in adults. *N Engl J Med* 2015;372:756-63.
2. Gould J. Laparoscopic versus open inguinal hernia repair. *Sur Clin N Am* 2008;88:1073-81.
3. Kingsnorth A, LeBlanc K. Hernias: Inguinal and incisional. *Lancet* 2003;362:1561-71.
4. Domino FJ. The 5-Minute Clinical Consult 2014. 22nd ed. Philadelphia, PA: Wolters Kluwer Health/Lippincott Williams and Wilkins; 2014. p. 562.
5. Page B, Paterson C, Young D, O'Dwyer PJ. Pain from primary inguinal hernia and the effect of repair on pain. *Br J Surg* 2002;89:1315-8.
6. Hjaltason E. Incarcerated hernia. *Acta Chir Scand* 1981;147:263-7.
7. Rutkow IM. Epidemiologic, economic and sociologic aspects of hernia surgery in the United States in the 1990s. *Surg Clin North Am* 1998;78:941.
8. Husain F, Siddiqui ZA, Siddiqui M. A case of endometriosis presenting as an inguinal hernia. *BMJ Case Rep* 2015;2015. pii: Bcr2014208099.
9. McEntee GP, O'Carroll A, Mooney B, Egan TJ, Delaney PV. Timing of strangulation in adult hernias. *Br J Surg* 1989;76:725-6.

10. Janssen K, Klinkner D, Kumar T. Encysted hydrocele of canal of nuck: A case report with review of literature. *J Surg Tech Case Rep* 2011;3:97-8.
11. Ortenberg J, Collins S, Roth CC. Pediatric Hydrocele and Hernia Surgery. <http://emedicine.medscape.com/article/1015147>. [Last updated on 2009 Sep 21].
12. Poenaru D, Jacobs DA, Kamal I. Unusual findings in the inguinal canal: A report of four cases. *Pediatr Surg Int* 1999;15:515-6.
13. Pandit SK, Rattan KN, Budhiraja S, Solanki RS. Cystic lymphangioma with special reference to rare sites. *Indian J Pediatr* 2000;67:339-41.
14. Dahlstrand U, Wollert S, Nordin P, Sandblom G, Gunnarsson U. Emergency femoral hernia repair. A study based on a national register. *Ann Surg* 2009;249:672-6.
15. Hair A, Paterson C, O'Dwyer PJ. Diagnosis of a femoral hernia in the elective setting. *J R Coll Surg Edinb* 2001;46:117-8.
16. Zampieri N, Zuin V, Ottolenghi A, Camoglio FS. Contralateral exploration for unilateral inguinal hernia in females: Risk factors and surgical findings. *Hernia* 2008;12:511-4.
17. Bradley M, Morgan D, Pentlow B, Roe A. The groin hernia-an ultrasound diagnosis. *Ann R Coll Surg Engl* 2003;85:178-80.
18. Djuric-Stefanovic A, Saranovic D, Ivanovic A, Masulovic D, Zuvela M, Bjelovic M, *et al.* The accuracy of ultrasonography in classification of groin hernias according to the criteria of the unified classification system. *Hernia* 2008;12:395-400.
19. van den Berg JC, de Valois J, Go PM, Rosenbusch G. Detection of groin hernia with physical examination, ultrasound and MRI compared with laparoscopic findings. *Invest Radiol* 1999;34:739-43.
20. Kitami M, Takase K, Tsuboi M, Hakamatsuka T, Yamada T, Takahashi S. Differentiation of femoral and inguinal hernias on the basis of anteroposterior relationship to the inguinal ligament on multidimensional computed tomography. *J Comput Assist Tomogr* 2009;33:678-81.

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