

ORIGINAL RESEARCH

Evaluation of outcome of management of Morgagni's hernia

¹Dr. Spandan Yadav, ²Dr. Shekhar Singh Jadon^{1,2}Assistant Professor, Department of Surgery, RG Medical College and Research Centre, Hathras, UP, India**Corresponding Author**

Dr. Shekhar Singh Jadon

Assistant Professor, Department of Surgery, RG Medical College and Research Centre, Hathras, UP, India

Received date: 22 January, 2024

Acceptance date: 27 February, 2024

ABSTRACT

Background: Morgagni's hernia, also known as a retrosternal or parasternal hernia, is a type of congenital diaphragmatic hernia characterized by the protrusion of abdominal organs, typically the stomach, small intestine, or omentum, through a defect in the anterior diaphragmatic hiatus. The present study was conducted to evaluate the outcome of management of Morgagni's hernia. **Materials & Methods:** 74 patients of Morgagni's hernia of both genders were divided into 2 groups of 37 each. Group I were treated with open operation and group II laparoscopically. Parameters such as hernia side, method, procedure, and duration of hospital stay were recorded. **Results:** Out of 74 patients, males were 40 and females were 34. Methods used was elective operation 28 in group I and 25 in group II, and emergency operation 9 in group I and 12 in group II. Hernia side was left in 19 in group I and 20 in group II, and right in 18 in group I and 17 in group II. Procedure was mesh in 18 and 26 in group I and II respectively, suture 14 in group I and mesh+ suture in 7 and 11 in group I and II respectively. Postoperative stay was 10.1 days in group I and 5.2 days in group II respectively. The difference was significant ($P < 0.05$). **Conclusion:** Surgical intervention is necessary in cases of Morgagni's hernias since the hernia may result in consequences including colon strangulation. Compared to open surgery, laparoscopic surgery offers the advantage of a shorter hospital stay.

Key words: Morgagni's hernias, hospital stay, laparoscopic surgery

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution- Non Commercial-Share Alike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

INTRODUCTION

Morgagni's hernia, also known as a retrosternal or parasternal hernia, is a type of congenital diaphragmatic hernia characterized by the protrusion of abdominal organs, typically the stomach, small intestine, or omentum, through a defect in the anterior diaphragmatic hiatus. Unlike the more common posterolateral diaphragmatic hernias, which occur through the posterolateral or posteromedial foramina of the diaphragm, Morgagni's hernias occur anteriorly, near the sternum.¹

Morgagni's hernias typically occur on the right side of the anterior diaphragm, adjacent to the xiphoid process of the sternum. However, they can occasionally occur on the left side or bilaterally.² Morgagni's hernias are typically congenital and result from incomplete closure or weakness of the retrosternal diaphragmatic hiatus during embryonic development. Rarely, they can also occur as acquired hernias due to trauma, surgery, or weakening of the diaphragm over time. Many Morgagni's hernias are asymptomatic and discovered incidentally during imaging studies for unrelated conditions. However, symptomatic cases may present with nonspecific symptoms such as abdominal pain, chest pain,

dyspnea (difficulty breathing), or gastrointestinal symptoms such as nausea and vomiting. In severe cases, bowel obstruction or incarceration of abdominal organs within the hernia sac may occur, leading to acute symptoms and complications.³

Although congenital diaphragmatic hernias (MHs) make up a very small percentage of all forms of hernias, it is frequently difficult to diagnose MHs because of vague respiratory and gastrointestinal symptoms.⁴ Because the herniated contents provide a rising risk of strangulation, surgical correction is the primary therapy for both symptomatic and incidentally discovered asymptomatic instances of MH once they are detected. There has been discussion of a number of thoracic and abdominal surgical techniques, but there isn't a unanimous agreement on the best method for operational repair.⁵ The present study was conducted to evaluate outcome of management of Morgagni's hernia.

MATERIALS & METHODS

The present study comprised of 74 patients of Morgagni's hernia of both genders. All patients were informed regarding the study and their consent was obtained.

Data such as name, age, gender etc. was recorded. Patients were divided into 2 groups of 37 each. Group I were treated with open operation and group II laparoscopically. Parameters such as hernia side,

method, procedure, and duration of hospital stay were recorded. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total-74		
Gender	Males	Females
Number	40	34

Table I shows that out of 74 patients, males were 40 and females were 34.

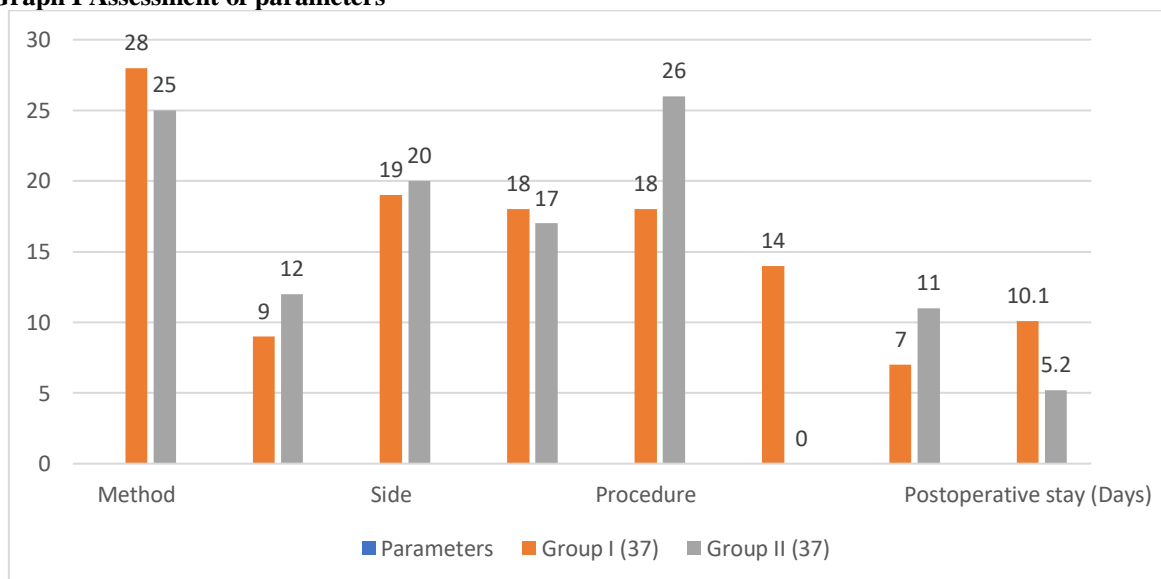
Table II Assessment of parameters

Variables	Parameters	Group I (37)	Group II (37)	P value
Method	Elective operation	28	25	0.74
	Emergency operation	9	12	
Side	Left	19	20	0.68
	Right	18	17	
Procedure	Mesh	18	26	0.05
	Suture	14	0	
	Mesh+ Suture	7	11	
Postoperative stay (Days)		10.1	5.2	0.01

Table II, graph I shows that methods used was elective operation 28 in group I and 25 in group II, and emergency operation 9 in group I and 12 in group II. Hernia side was left in 19 in group I and 20 in group II, and right in 18 in group I and 17 in group II.

Procedure was mesh in 18 and 26 in group I and II respectively, suture 14 in group I and mesh+ suture in 7 and 11 in group I and II respectively. Postoperative stay was 10.1 days in group I and 5.2 days in group II respectively. The difference was significant (P< 0.05).

Graph I Assessment of parameters



DISCUSSION

A congenital abnormality located in the front side of the diaphragm between the sternal and costal segments of this muscle is known as a Morgagni's hernia.⁶ Based on his observations made during the postmortem examination of a patient who had died from a head injury, Giovanni Batista Morgagni initially documented the substernal herniation of abdominal organs into the thoracic cavity in 1796.⁷ The retrosternal area is known as the space of Larrey, after Napoleon Bonaparte's surgeon who first

identified it as a treatment pathway for pericardial tamponade. Of the four forms of congenital diaphragmatic hernia, hernia of Morgagni accounts for 2%–3% of instances, making it the rarest. Adults typically experience nonspecific symptoms first, like excessive flatulence and indigestion. In extreme situations, symptoms like strangling or intestinal blockage may appear. Most children who have it present with recurrent chest infections; in rare cases, it may manifest as acute respiratory distress syndrome in the newborn stage.⁸ When patients are being looked

at for unrelated issues, more than half are found. A computed tomography or barium enema are used to confirm the diagnosis, which is made using a lateral chest radiograph. Some writers mention both the left and right Morgagni's or Larrey's hernias. There is a diaphragmatic hernia at the posterolateral and parasternal areas (Morgagni-Larrey).⁹The present study was conducted to outcome of management of Morgagni's hernia.

We found that out of 74 patients, males were 40 and females were 34. Loong et al¹⁰a total of 47 case reports on children and 93 case reports on adults were found. Fourteen percent of children (seven out of 47) presented acutely compared with 12% of adults (12 out of 93). Repair at laparotomy was the method of choice but if uncertain, laparoscopy would be a useful diagnostic tool before attempted repair. Laparoscopic repair was favoured in adults especially in non-acute cases.

We found that methods used was elective operation 28 in group I and 25 in group II, and emergency operation 9 in group I and 12 in group II. Hernia side was left in 19 in group I and 20 in group II, and right in 18 in group I and 17 in group II. Procedure was mesh in 18 and 26 in group I and II respectively, suture 14 in group I and mesh+ suture in 7 and 11 in group I and II respectively. Postoperative stay was 10.1 days in group I and 5.2 days in group II respectively. Ridai et al¹¹ in their study two patients underwent laparoscopic surgery for Morgagni-Larrey hernia. The first, aged 17 exhibited a chromosomal abnormality (trisomie 21). The second was 18 years old. Both patients underwent surgery by laparoscopy. In both cases, the surgical act performed was resection of the hernia and closure of the orifice with separate sutures. Their post-surgical courses were uneventful, even two years later.

Twelve patients underwent laparoscopic surgery, while the remaining nine underwent open abdominal surgery, according to Arikian et al.'s¹² findings. In all but four of the patients, hernia sacs were found and removed. The two organs most frequently observed in hernia sacs were the omentum and the transverse colon. Six patients (four laparoscopic, two open) and four patients with hernia defects treated with primary sutures (all open cases) had their primary closure maintained by mesh. Synthetic meshes were used to close hernia defects in the remaining 11 patients (8 laparoscopic cases and 3 open cases). 9.8 days was the average postoperative hospital stay. None of the patients experienced a recurrence. During follow-up, only one of our patients passed away.

Asymptomatic or minimally symptomatic Morgagni's hernias may not require immediate treatment and can be managed conservatively with observation. However, symptomatic or complicated hernias may require surgical repair to reduce the risk of complications such as bowel obstruction or strangulation.¹³ Surgical repair of Morgagni's hernias typically involves open or laparoscopic techniques to

reduce the herniated contents, close the diaphragmatic defect, and reinforce the repair with sutures or a mesh patch. The prognosis for patients with Morgagni's hernia depends on various factors, including the size and contents of the hernia, the presence of symptoms or complications, and the timing and success of surgical intervention.¹⁴ With timely diagnosis and appropriate management, most patients can expect favorable outcomes with resolution of symptoms and prevention of complications.

CONCLUSION

Authors found that surgical intervention is necessary in cases of Morgagni's hernias since the hernia may result in consequences including colon strangulation. Compared to open surgery, laparoscopic surgery offers the advantage of a shorter hospital stay.

REFERENCES

1. Durak E, Gur S, Cokmez A, Atahan K, Zahts E, Tarcan E (2007) Laparoscopic repair of Morgagni's hernia. *Hernia* 2007;11:265–270.
2. Iso Y, Sawada T, Rokkaku K, Furihata T, Shimada M, Kita J, Kubota K. A case of symptomatic Morgagni's hernia and a review of Morgagni's hernia in Japan (263 reported cases). *Hernia* 2006;10:521–524
3. Fagelman D, Caridi JG. CT diagnosis of hernia of Morgagni. *GastrointestRadiol* 1984;9:153–5.
4. Collie DA, Turnbull CM, Shaw TR, et al. Case report: MRI appearances of left sided Morgagni hernia containing liver. *Br J Radiol* 1996;69:278–80.
5. Comer TP, Clagett OT. Surgical treatment of hernia of the foramen of Morgagni. *J Thorac Cardiovasc Surg* 1996;52:461–8.
6. Hitch DC, Carson JA, Smith EI, et al. Familial congenital diaphragmatic hernia is an autosomal recessive variant. *J PediatrSurg* 1989;24:860–4.
7. Berman L, Stringer D, Ein SH, et al. The late presenting pediatric Morgagni hernia: a benign condition. *J PediatrSurg* 1989;24:970–2.
8. Catalona WJ, Crowder LW, Chretien PB, et al. Occurrence of hernia of Morgagni with filial cervical lung hernia: A hereditary defect of the cervical mesenchyme? *Chest* 1972;62:340–2.
9. Paris F, Tarazona V, Casillas M, et al. Hernia of Morgagni. *Thorax* 1973;28:631–6. 14
10. Loong TPF, Kocher HM. Clinical presentation and operative repair of hernia of Morgagni. *Postgrad Med J* 2005;81:41–44.
11. Ridai M, Boubia S, Kafih M, Zerouali ON. Larrey or Morgagni hernias treated by laparoscopy. *Presse Med* 2002;31:1364– 1365.
12. Arikian S, Dogan MB, Kocakusak A, Ersoz F, Sari S, Duzkoylu Y, Nayci AE, Ozoran E, Tozan E, Dubus T. Morgagni's hernia: analysis of 21 patients with our clinical experience in diagnosis and treatment. *Indian Journal of Surgery*. 2018 Jun 1;80(3):239–44.
13. Ipek T, Altinli E, Yuceyar S, Erturk S, Eyuboglu E, Akcal T. Laparoscopic repair of a Morgagni Larey hernia; report of three cases. *Surg Today* 2002;32(10):902–905.
14. Tyrel D, Mohamed F, Paulides C, Kutalek S, Mulhern C, Nunes LW. Half-fourier acquisition single-shot turbo spin echo imaging in the diagnosis if Morgagni hernia. *J Magn Reson Imaging* 2001;14: 653–657.