Journal of Chemical Health Risks

www.jchr.org

JCHR (2024) 14(3), 3450-3454 | ISSN:2251-6727

''A Comparative Study of the Efficacy and Advantages of Laparoscopic Repair of Umbilical and Paraumbilical Hernia Over Conventional Open Repair Among Patients Attending Meenakshi Medical College Hospital and Research Institute, Kanchipuram''

Dr. Dasari Sridhar yadav [1*],Dr. Ravi[2] ,Dr. Ganesh Kumar[3]

[1] Postgraduate *****

[2]Associate professor

[3]Assistant professor

Department of General Surgery

Meenakshi Medical College Hospital and Research Institute, Enathur, Kanchipuram.

Meenakshi Academy of Higher Education & Research (MAHER), Chennai.

[*]Correspondence: DR. DASARI SRIDHAR YADAV[1]

Postgraduate, Department of General Surgery Meenakshi Medical College Hospital and Research Institute, Enathur, Kanchipuram. Meenakshi Academy of Higher Education & Research (MAHER), Chennai.

(Received: 08 February 2024 Revised: 11 March 2024 Accepted: 08 April 2024)

KEYWORDS

Umbilical hernia, Paraumbilical hernia, Open repair, Laparoscopic repair.

ABSTRACT:

Introduction: Umbilical and paraumbilical hernias account for approximately 5% of all primary hernias. Approximately 90% of adult umbilical hernias are acquired rather than due to the persistence of infantile umbilical hernias. Often in adults, the hernia does not occur through the umbilical scar but is a protrusion through the linea alba, just above or sometimes just below the umbilicus, the so-called paraumbilical hernias. Predisposing factors for umbilical and paraumbilical hernias include any condition resulting in increased intra-abdominal pressure, such as obesity, multiparous women, ascites, and intra-abdominal malignancy, and as such, the incidence is reported to be up to five times higher in females compared to males. Biomechanically, the umbilical zone is naturally weaker because it allows more transverse stretch, hence the reason for the hernias.

Aim: To compare the outcomes of laparoscopic repair of umbilical and paraumbilical hernias (both primary closure and mesh repair) over the conventional open techniques used routinely.

Objectives: 1. To derive conclusions about the advantages of laparoscopic closure of the defect in umbilical and paraumbilical hernias over conventional open repair involving both primary suturing and the on-lay mesh technique with respect to the shorter return to normal activity, lesser risk of infection, fewer complications, a lower incidence of recurrences, and a longer-term outcome. . 2.To derive conclusions about the selection of surgical techniques for repair in selected scenarios.

Methods: A comparative study for the efficacy and advantages of laparoscopic repair of umbilical and paraumbilical hernias over conventional open repairs was conducted at Meenakshi Medical College Hospital & Research Institute in Kanchipuram, among 30 study participants, between September 2022 and August 2023.

Results&Conclusions

• Laparoscopic repair of umbilical and paraumbilical hernias is a safe and effective technique when compared with the conventional open methods of repair, even in the presence of multiple previous abdominal surgeries and large defects. It also allows for identification of previously undiagnosed secondary hernia defects. Laparoscopic method of repair clearly supersedes the conventional open method in terms of Early return to normal activities, lesser incidence of pain, sensory disturbances, wound infections and complications along with significantly reduced incidences of recurrences in the long run.

Journal of Chemical Health Risks

www.jchr.org

JCHR (2024) 14(3), 3450-3454 | ISSN:2251-6727

1. Introduction

Umbilical and paraumbilical hernias account for approximately 5% of all primary hernias. Approximately 90% of adult umbilical hernias are acquired rather than due to the persistence of infantile umbilical hernias. Often in adults, the hernia does not occur through the umbilical scar but is a protrusion through the linea alba, just above or sometimes just below the umbilicus, the so-called paraumbilical hernias. Predisposing factors for umbilical and paraumbilical hernias include any condition resulting in increased intra-abdominal pressure, such as obesity, multiparous women, ascites, and intra-abdominal malignancy, and as such, the incidence is reported to be up to five times higher in females compared to males. Biomechanically, the umbilical zone is naturally weaker because it allows more transverse stretch, hence the reason for the hernias

Aims

To compare the outcomes of laparoscopic repair of umbilical and paraumbilical hernias (both primary closure and mesh repair) over the conventional open techniques used routinely.

OBJECTIVES

1. To derive conclusions about the advantages of laparoscopic closure of the defect in umbilical and paraumbilical hernias over conventional open repair involving both primary suturing and the on-lay mesh technique with respect to the shorter return to normal activity, lesser risk of infection, fewer complications, a lower incidence of recurrences, and a longer-term outcome.

2. To derive conclusions about the selection of surgical techniques for repair in selected scenarios.

METHODS

A comparative study for the efficacy and advantages of laparoscopic repair of umbilical and paraumbilical hernias over conventional open repairs was conducted at Meenakshi Medical College Hospital & Research Institute in Kanchipuram, among 30 study participants, between September 2022 and August 2023.

ELIGIBILITY CRITERIA

A. Inclusion criteria:

1. Patients with an age more than 18 years in both sexes presenting as a case of umbilical or paraumbilical hernia in the surgery department at MMCHRI, Kanchipuram, from september 2022 to august 2023

2. Patients consented to inclusion in the study according to the designated proforma after giving informed written consent.

B. Exclusion criteria:

1. Patients with age less than 18 years.

2. Patients with coagulopathy, severe cardiopulmonary disease, ascites and renal failure are excluded.

3. Patients reluctant to undergo surgical correction by giving consent.

RESULTS& DISCUSSION:

The patients were then divided into four groups based on the repair they underwent.

GROUP I: Patients who underwent Primary Open Suture Repair (OSR)

GROUP II: Patients who underwent Open Repair with Mesh placement (ORWM)

GROUP III: Patients who underwent Laparoscopic Suture Repair (LSR)

GROUP IV: Patients who underwent Laparoscopic Repair with Mesh (LRWM)

Table 1: Distribution of study population according to the Age

AGE	MALES	FEMALES
<30 YEARS	5	3
31-45 YEARS	3	4
46-60 YEARS	4	6
>60 YEARS	3	2
TOTAL	15	15

Journal of Chemical Health Risks

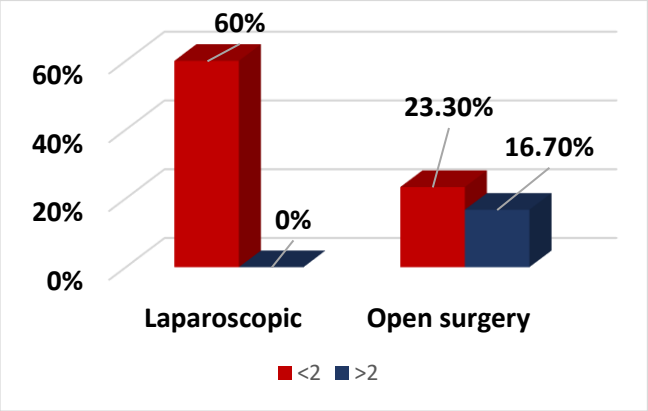
www.jchr.org

JCHR (2024) 14(3), 3450-3454 | ISSN:2251-6727

Table 2: Association between return of bowel (days) sounds and procedure

Return of bowel sounds	Laparoscopic	Open surgery	TOTAL
<2	18 (60%)	7 (23.3%)	25 (83.3%)
>2	0 (0%)	5 (16.7%)	5 (16.4%)
TOTAL	18 (60%)	12 (40%)	30(100%)

Fig 1: Association between return of bowel (days) sounds and procedure

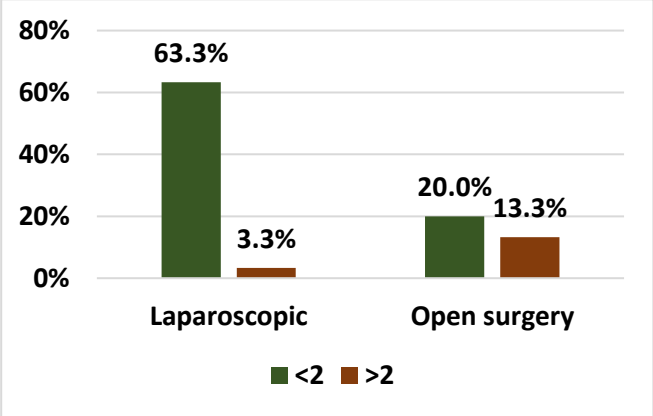


Majority of study population had returned bowel sounds with in < 2 days who had laparoscopic whereas 23.3% of them who had open surgery

Table 3: Association between Starting oral feeds(days) and procedure

Starting oral feeds(days)	Laparoscopic	Open surgery	TOTAL
<2	19 (63.3%)	6 (20%)	25 (83.3%)
>2	1 (3.3%)	4 (13.3%)	5 (16.7%)
TOTAL	20 (66.7%)	10(33.3%)	30 (100%)

Fig 2: Association between Starting oral feeds(days) and procedure



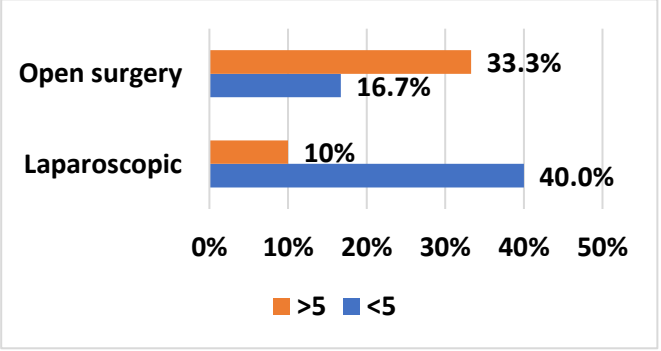
More than 2/3 rd of the population started oral feeds <2 days whereas only less than 1/3rd of population took > 2 days to start oral feeds

Table 4: Association between Pain as per rating scale and procedure

Pain	Laparoscopic	Open surgery	TOTAL
<5 days	12 (40%)	5 (16.7%)	17 (56.7%)
>5 days	3 (10%)	10 (33.3%)	13 (43.3%)
TOTAL	15 (50%)	15 (50%)	30 (100%)

Comparatively 33.3% of them had pain for more than 5 days after having open surgery whereas only 10% had pain for more than 5 days after laparoscopic surgery

Fig 3: Association between Pain as per rating scale and procedure



Journal of Chemical Health Risks

www.jchr.org

JCHR (2024) 14(3), 3450-3454 | ISSN:2251-6727

Table 5 : Association between Bladder/Bowel disturbances and procedure

Bladder/Bowel disturbances	Laparoscopic	Open surgery	TOTAL
YES	2 (6.7%)	10 (33.3%)	12 (40%)
NO	10 (33.3%)	8 (26.7%)	18(60%)
TOTAL	14 (46.6%)	18 (60%)	30 (100%)

Fig 4: Association between Bladder/Bowel disturbances and procedure

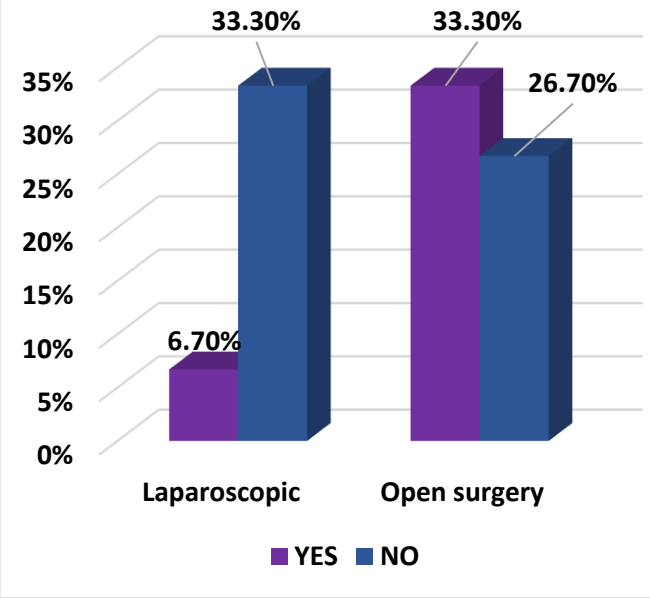


Table 5 : Association between Wound infection and procedure

Wound infection	Laparoscopic	Open surgery	TOTAL
YES	0 (0%)	5 (16.6%)	5 (16.6%)
NO	17(56.7%)	8(26.7%)	25(83.3%)
TOTAL	17 (56.7%)	13(43.3%)	30 (100%)

Fig 4: Association between Wound infection and procedure

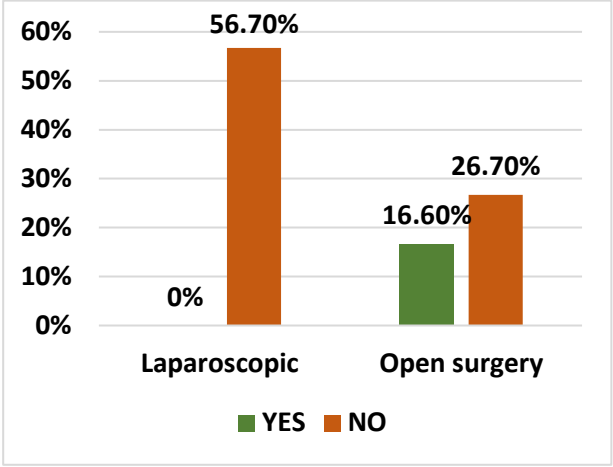


Table 6 : Association between Day of discharge and procedure

Day of Discharge	Laparoscopic	Open surgery	TOTAL
<5	12(40%)	4 (13.3%)	16 (53.3%)
>5	3(10%)	11(36.6%)	14 (46.6%)
TOTAL	15(50%)	15(50%)	30 (100%)

Table 7 : Association between Recurrence and procedure

Recurrence	Laparoscopic	Open surgery	TOTAL
NO	12(40%)	4 (13.3%)	16 (53.3%)
YES	3 (10%)	11(36.6%)	14 (46.6%)
TOTAL	15(50%)	15(50%)	30(100%)

Journal of Chemical Health Risks

www.jchr.org

JCHR (2024) 14(3), 3450-3454 | ISSN:2251-6727

CONCLUSION

• Laparoscopic repair of umbilical and paraumbilical hernias is a safe and effective technique when compared with the conventional open methods of repair, even in the presence of multiple previous abdominal surgeries and large defects. It also allows for identification of previously undiagnosed secondary hernia defects. Laparoscopic method of repair clearly supersedes the conventional open method in terms of Early return to normal activities, lesser incidence of pain, sensory disturbances, wound infections and complications along with significantly reduced incidences of recurrences in the long run.

ACKNOWLEDGMENT:

We are thankful to the entire study participants for their participation and full cooperation.We acknowledge the department of General surgery faculties for encouraging and supporting us.

Funding support and sponsorship:Nil

Conflict of interest: Nil

Refrences

[1] Wantz GE. Abdominal wall hernias. In: Schwartz SI, Shires GT, Spencer FC, editors. eds. Principles of Surgery. 7th ed. New York: McGraw-Hill; 1999:1585–1611

[2] Mayo WJ. An operation for the radical cure of umbilical hernia. Ann Surg. 1901;34:276.[PMC free article] [PubMed]

[3] Morris-Stiff GJ, Hughes LE. The outcomes of nonabsorbable mesh placed within the abdominal cavity. Literature review and clinical experience. J Am Coll Surg. 1998;186:352–367 [PubMed]

[4] Arroyo A, García P, Pérez F, Andreu J, Candela F, Calpeña R. Randomized clinical trial comparing suture and mesh repair of umbilical hernia in adults. Br J Surg. 2001;88:1321–1323 [PubMed]

[5] García-Ureña MA, Rico P, Seoane J, et al. Hernia umbilical del adulto. Cirugía Española. 1994;56:302–306

[6] Lamb JP, Vitale T, Kaminski DL. Comparative evaluation of synthetic meshes used for abdominal wall replacement. Surgery. 1983;93:643–648 [PubMed]

[7] Nguyen NT, Lee SL, Mayer KL, Furdui GL, Ho HS. Laparoscopic umbilical herniorrhaphy. J Laparoendosc Adv Surg Tech. 2000;10:151–153 [PubMed]99

[8] van't Riet M, teyerberg EW, Nellensteyn J, Bonjer HJ, Jeekel J. Meta-analysis of techniques for closure of midline abdominal incisions. Br J Surg. 2002;89:1350–1356 [PubMed]

[9] B. E. Wright, J. Beckerman, M. Cohen, J. K. Cumming, and J. L. Rodriguez, “Is laparoscopic umbilical hernia repair with mesh a reasonable alternative to conventional repair?” The American Journal of Surgery, vol. 184, no. 6, pp. 505–508, 2002.

[10] J.E.Carter, “A new technique of fascial closure for laparoscopic incisions,” Journal of Laparoendoscopic Surgery, vol. 4, no. 2, pp. 143–148, 1994.

[11] C. S.Joels, B. D. Matthews, C. E. Austin, et al., Evaluation of fixation strength and adhesion formation after ePTFE mesh placement with various fixation devices, Presented at SAGES Scientific Session, Denver, Colo, USA, April 2004

[12] Celdran A, Bazire P, Garcia-Urena MA, Mariguam JL. Hernioplasty: A tensionfree repair for umbilical hernia. Br J Surg. 1995; 82: 371–372 [PubMed]

[13] J. R. Eriksen, T. Bisgaard, S. Assaadzadeh, L. N. Jorgensen, and J. Rosenberg, “Randomized clinical trial of fibrin sealant versus titanium tacks for mesh fixation inlaparoscopic umbilical hernia repair,” British Journal of Surgery, vol. 98, no. 11, pp. 1537–1545, 2011100