

# Comparison of Mayo's Repair with Mesh Repair for Paraumbilical Hernia in Adults

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## Introduction

Paraumbilical hernia is an uncharacteristic protrusion of abdominal contents that pushes through the abdominal wall surrounding the umbilicus.<sup>1</sup> Strenuous activities usually cause the bulge to appear around the umbilicus.<sup>2</sup> Paraumbilical hernia is routinely seen in our patients. The recommended treatment for this condition is undoubtedly surgery. The choice of appropriate surgical procedure is still subject to debate. In adults the surgery for paraumbilical hernia is associated with a high recurrence rates of 10 – 30%.<sup>3</sup> Obesity and multiparity are important predisposing factors not only for primary but also for recurrent cases.<sup>4</sup> The simplest and the most established method is Mayo's overlap technique using non-absorbable suture material with or without a drain but unfortunately is troubled with high recurrence.<sup>5</sup> The use of mesh regarding treatment strategy is not new and has been reported to cause reduction in recurrence rates.<sup>6</sup> In this study an attempt was made to compare the results of mayo's repair with onlay mesh repair in patients presenting with this problem.

## Aims and Objectives

The aim and objective of this study was to find out the recurrence rates following mayo's repair and mesh repair for paraumbilical hernia in our set of population.

## Patients and Methods

This prospective randomized study was conducted in Lahore General Hospital over a period of one year from July 2009 to July 2010. A total of 50 patients presenting in the surgical outpatient department were enrolled in the study. Patients were randomly allocated to 2 groups (group A and B). Group A (total number of 25 patients) underwent Mayo's repair while group B (total number of 25 patients) underwent onlay mesh hernioplasty with polypropylene mesh. Drains were placed in all patients of both groups. Patients were followed up at 10 days, 4 weeks, 6 months and 1 year interval.

## Inclusion Criteria

1) All patients of paraumbilical hernia with no age limit were included in the study.

## Exclusion Criteria

- 1) Patients with obstructed / strangulated paraumbilical hernia were excluded from the study.
- 2) Patients with co-morbid cardiorespiratory conditions like ischemic heart disease and COPD were not included in the study.

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3) Patients with recurrence of paraumbilical hernia.

	Group A (Mayos Repair)	Group B (Onlay Mesh Repair)
Age (ranging)	25 – 40 years	30 – 55 Years
Mean Age		
Duration of Drain	3 – 4 Days	1 – 2 Days
Male: Female Ratio	4:1	1:7.5
Hospital Stay	4 – 5 Days	2 – 3 Days
Recurrence at 6 Months	1 Female	None
Recurrence after 1 Year	6 Females (24%)	2 Females (8%)

## Results

In group A patients (Mayo's repair) the age ranges of the patients were from 25 – 40 years with the mean age of 30.9 years. Majority of the patients were females i.e. 80% (20 out of 25), obese, multiparous women and the remaining 10 patients were males i.e. 20% (5 out of 25). All of the patients had an in situ drain which was removed on the 3<sup>rd</sup> or the 4<sup>th</sup> post-op day. The duration of hospital stay was on the average 4 or 5 days after surgery. Patients were followed up at 10 days interval for wound care and examination. They were advised diet restriction and weight reduction. After an interval of 6 months 1 female patient out of 25 (4%) reported back with recurrence of symptoms and another 6 female patients out of 25 (24%) reported back at 1 year interval with recurrence. All of these patients were obese, multiparous females. None of the male patients reported back with recurrence of symptoms.

Group B patients underwent onlay mesh repair only. In group B (mesh repair) the age limits of the patients were in the range of 30 – 50 years with the mean age of 39.08 years. Most of the patients were females i.e. 88% (22 out of 25) and only 3 were males i.e. 12% (3 out of 25). These patients also had in situ drain placement which was removed on either the 1<sup>st</sup> or 2<sup>nd</sup> post-op day. The duration of hospital stay in these patients was 2 – 3 days following surgery. These patients were advised to restrain with strenuous activities. None of these patients presented with recurrence at 6 months interval. Only 2 patients (8%) reported with recurrence at 1 year interval. Both were again obese, multiparous females.

## Discussion

Para-umbilical hernia is a commonly seen in our society. A study by M. Kensarah in Saudi Arabia reveals that umbilical hernias account for 12% of all hernias seen in adults.<sup>7</sup> The treatment of paraumbilical hernia is entirely surgical. The traditional Mayo's repair is less costly, easy to perform but unfortunately is associated with a high recurrence rate which is in comparison

with our study with a recurrence rate of 24%. Predisposing factors leading to recurrence include multiparity, increased intra-abdominal pressure and single midline decussation<sup>8</sup> which is again in comparison with our study in which all the recurrent patients were obese multiparous females (24% in group A and 8% in group B). Kings North et al in UK reported the recurrence rates to be 3.4% for mesh repair and double the recurrence rates for double overlap repair which again stands in comparison with our study.<sup>9</sup> A similar study by Aslani et al in 2010<sup>10</sup> and by Arroyo et al in 2001<sup>11</sup> showed few recurrence rates for mesh repair as compared with suture repair which is again in comparison with our study of recurrence rate of 8% for mesh and 24% for Mayo's repair.

## Conclusion

We conclude that onlay mesh repair is associated with low recurrence rates for paraumbilical hernia repair as compared with Mayo's overlap technique. Recurrence most commonly occurs in obese and multiparous women.

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