

## Two Different Approaches in the Management of Small Paraumbilical Hernias

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### ABSTRACT:

**Background:** Para-Umbilical Hernia (PUH) is one of the most common surgical problems with rise in the repair rate annually. The present study two different approaches in the management of small paraumbilical hernias.

**Materials & Methods:** 80 patients of paraumbilical hernias were divided into 2 groups. In group I (Hernioplasty), mesh was then inserted and fixed with interrupted polypropylene sutures and in group II (Herniorrhaphy) only anatomical suture repair was done without mesh use. Both groups were compared according: size of incision, time of operation, occurrence of wound complications were compared.

**Results:** Group I had 24 males and 16 females and group II had 18 males and 22 females. Operation time (min) time was 42.7 in group I and 31.6 in group II, incision size (cm) was 11.2 in group I and 8.2 in group II, recurrence rates at 3rd month was none and at 6th months was 4 in group I and II respectively. Complications were infection in 2 in group I and 4 in group II, seroma seen in 1 in group I and 3 in group II and wound dehiscence in 3 in group I and 5 in group II. The difference was significant ( $P < 0.05$ ).

**Conclusion:** Anatomical non-mesh repair of minor paraumbilical hernias found to be better in paraumbilical hernias repair.

**Key words:** Hernioplasty, paraumbilical hernias, recurrence

### Introduction

Para-Umbilical Hernia (PUH) is one of the most common surgical problems with rise in the repair rate annually. Previously PUHs were repaired by tension-free suture technique.<sup>1</sup> Due to a high unacceptable recurrence rate this procedure lost popularity.<sup>2</sup> A real change in view of PUH repair came with the introduction of meshplasty. Nowadays, meshplasty is the most commonly performed procedure for PUH.<sup>3</sup> An increased incidence of wound infection and wound-related complications in open mesh repair lead to continuing research into the optimal method of treatment of PUH which lead the surgeons to adopt laparoscopic approach. Conventionally, smaller PUH.<sup>4</sup>

A paraumbilical hernia can be categorised as small, medium, or big according to the European Hernia Society, with sizes ranging from 2cm to 2-4cm and 4cm, respectively. For many years, an open suture repair, such as the Mayo repair, was considered the gold standard for treating para-umbilical hernias.<sup>5</sup> Minor stress can be used to heal the majority of paraumbilical hernias, which are modest to medium-sized in size. Small para-umbilical hernias, on the other hand, have a significant recurrence risk of around 30% after being repaired with sutures. Since the advent of mesh treatment into the contemporary therapy of para-umbilical hernias, there has been a significant reduction in complications.<sup>6</sup>

When it comes to placing the mesh, there are a variety of ways to choose from, but no prospective evidence has decisively shown that one technique is clearly superior than another. Mesh implantation options include bridging the defect with mesh, inserting a preperitoneal underlay of mesh reinforced with suture repair, and installing it laparoscopically, among other techniques.<sup>7</sup>The present study two different approaches in the management of small paraumbilical hernias.

### Materials & Methods

The present study comprised of 80 patients of paraumbilical hernias of both genders. All were informed regarding the study and their written consent was obtained.

Data such as name, age, gender etc. was recorded. All patients were divided into 2 groups. In group I (Hernioplasty), mesh was then inserted and fixed with interrupted polypropylene sutures and in group II(Herniorrhaphy) only anatomical suture repair was done without mesh use. Both groups were compared according: size of incision, time of operation, occurrence of wound complications including infection and seroma, recurrence rate and overall cost during the period of follow-up which was six months.Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

### Results

**Table I Distribution of patients**

Groups	Group I	Group II
Method	Hernioplasty	Herniorrhaphy
M:F	24:16	18:22

Table I shows that group I had 24 males and 16 females and group II had 18 males and 22 females.

**Table II Comparison of parameters**

Parameters	Variables	Group I	Group II	P value
Operation time (min)		42.7	31.6	0.05
Incision size (cm)		11.2	8.2	0.02
Recurrence rates	3 <sup>rd</sup> month	0	0	0.01
	6 <sup>th</sup> month	0	4	
Complications	infection	2	4	0.04
	Seroma	1	3	
	Wound dehiscence	3	5	

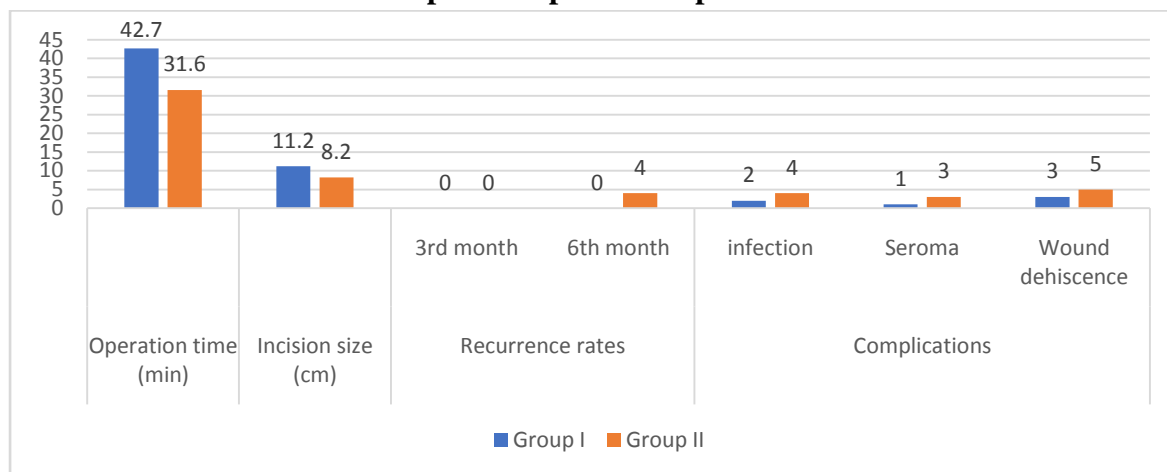
**Graph I Comparison of parameters**

Table II, graph I shows that operation time (min) time was 42.7 in group I and 31.6 in group II, incision size (cm) was 11.2 in group I and 8.2 in group II, recurrence rates at 3rd month was none and at 6th months was 4 in group I and II respectively. Complications were infection in 2 in group I and 4 in group II, seroma seen in 1 in group I and 3 in group II and wound dehiscence in 3 in group I and 5 in group II. The difference was significant ( $P < 0.05$ ).

## Discussion

The recent introduction of laparoscopic repair of ventral hernias is gaining popularity and is being practiced by many surgeons all over the world.<sup>8,9</sup> There are increasing evidences that laparoscopic repair of PUH is superior to open mesh repair regarding operative and postoperative complications, postoperative pain and overall morbidity and mortality.<sup>10,11</sup> Very few studies are available comparing the open versus laparoscopic para-umbilical mesh repair and most of these are retrospective.<sup>12</sup> The present study two different approaches in the management of small paraumbilical hernias.

In present study, group I had 24 males and 16 females and group II had 18 males and 22 females. Korukonda et al<sup>13</sup> compared the early complications of open repair with laparoscopic repair of PUH. Out of 40 patients with PUH, 20 received open meshplasty and 20 patients received laparoscopic meshplasty. Postoperative pain and length of hospital stay is significantly less in laparoscopic PUH repair. Postoperative complications like wound infection, seroma, and haematoma are relatively less in laparoscopic group though statistically not significant.

We observed that operation time (min) time was 42.7 in group I and 31.6 in group II, incision size (cm) was 11.2 in group I and 8.2 in group II, recurrence rates at 3rd month was none and at 6th months was 4 in group I and II respectively. Complications were infection in 2 in group I and 4 in group II, seroma seen in 1 in group I and 3 in group II and wound dehiscence in 3 in group I and 5 in group II. Kumar et al<sup>14</sup> included 120 patients divided into two groups. Group 1 was included 60 patients randomized to paraumbilical hernioplasty with mesh insertion. Group 2 was included 60 patients randomized to paraumbilical herniorrhaphy. Paraumbilical hernia patients aging 20-60 years old with small defect size (less than 3 cm) by preoperative ultrasound. Gender of patients in both groups: In group (1): 25 males (41.67% of

group) and 35 females (58.33% of group), while in group (2): 28 males and 32 females with  $p=0.45$ . Comparison of age of patients in both groups, it was found that: In both groups the range of age was 24-57 years old with  $p=0.632$ . There were significant differences between both groups as regarding operative details. Drain was inserted in only 40 patients of group (2) while all patients of group (1) had drains inserted  $p\leq 0.001$ . Incision size mean in group (1) was about  $11.07\pm 1.26$  cm. while in group (2) it was only  $8.87\pm 0.82$  cm with  $p\leq 0.001$ . Also, operation time was reduced in herniorrhaphy group with a mean  $31.15\pm 3.11$  minutes while in hernioplasty group was  $41.23\pm 3.17$  minutes with  $p\leq 0.001$ . In comparison between both groups in wound complications, it was found that seroma occurred in 4 patients of group (1) and 2 patients in group (2)  $p=0.298$ . Infection occurred in 6 patients in group (1) while only 2 patients in group (2) had wound infection  $p=0.177$ . Dehiscence occurred in only 2 patients in group (1) with  $p=0.336$ . As regarding recurrence rates, both groups had no statistically significant differences during the 6-month follow-up period; only 2 cases had hernia recurrence, which was identified clinically and by ultrasonography after 5 months of operation in group (2) while no cases in group (1) had hernia recurrence during the period of follow-up with  $p=0.336$ .

### Conclusion

Authors found that anatomical non-mesh repair of minor paraumbilical hernias found to be better in paraumbilical hernias repair.

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