European Journal of Molecular & Clinical Medicine

ISSN: 2515-8260, Volume 09, Issue 07, 2022

ORIGINAL RESEARCH

Comparison of Treatment Modalities for the Management of Umbilical Hernia in Pregnancy

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ABSTRACT

Background: To compare treatment modalities for the management of umbilical hernia in pregnancy**.**

Materials and Methods: 90 pregnant female patients with umbilical hernias were divided into 3 groups of 30 each. Group I were undergoing para-umbilical hernia repair by pre-peritoneal mesh insertion through CS incision, group II were undergoing paraumbilical hernia repair by infra- or supra-umbilical incision during CS incision and group III were undergoing paraumbilical hernia repair by infra- or supra-umbilical incision later on after healing of the CS wound. Each group had 30 patients. Complications were recorded in each group.

Results: Location was infraumbilical in 45%, 52% and 57% and supraumbilical in 55%, 48% and 43%. Surgical operative time (min) was 60 seen in 40%, 55% and 55%, 90 in 35%, 25% and 25%, 120 in 25%, 20% and 20%. Location of mesh was sublay in 100%, 42% and 25% and onlay in 0, 58% and 75%. Duration of hospital stay was 2 days in 30%, 35% and 38%, 3 days in 48%, 40% and 36% and 4 days in 22%, 25% and 26%. The difference was significant ($P< 0.05$). Complications in group I, group II and group III was wound infection in 1, 4 and 3, wound dehiscence in 1, 3 and 2, skin flaps ischemia in 0, 1 and 2 and seroma in 0, 2 and 1 respectively. The difference was significant ($P< 0.05$) (Table II).

Conclusion: Performing para-umbilical hernia repair by insertion of a pre-peritoneal mesh simultaneously during performing CS through the same skin incision is the best method of management of para-umbilical hernia in pregnant woman**.**

Keywords: supraumbilical, Hernia, Onlay.

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INTRODUCTION

Umbilical hernia is a common pathology in both developing as well as the developed countries and accounts for 6% of abdominal wall hernias in adults. In children, these hernias are usually congenital, its diagnosis is easy, as well as its surgical treatment, usually without recurrence. In addition, complications are not common and the hernia may close spontaneously and therefore may not require surgical intervention.[1] Umbilical hernia in

adults occurs long after closure of the umbilical ring and is due to a gradual weakening of the cicatricial tissue closing the ring. Predisposing factors to such hernias include obesity, multiple pregnancies with prolonged labor, ascites and large intra-abdominal tumors.[2]
Pregnancy may cause an umbilical hernia, or render a pre-existing one apparent, because of progressively increasing intra-abdominal pressure. Hernia symptoms present in the second trimester in most patients.[3] A hernia may be diagnosed during first, second, or third pregnancies. The incidence of an umbilical hernia in pregnant women has been reported to be as low as 0.08% in a very recent large series. However, it is possible to meet complicated cases, like a full-term pregnancy in umbilical hernia, peritonitis due to skin ulceration, or incarcerated pregnant uterus within the hernia rims. A proper repair technique for an umbilical hernia in a woman planning a pregnancy is also a question.[4] It has been shown that mesh repairs provide better outcomes than suture repairs. Repairing with only sutures may bring a recurrence during pregnancy.[5] Considering this, we selected present study to compare treatment modalities for the management of umbilical hernia in pregnancy.

MATERIALS & METHODS

We selected 90 pregnant female patients with umbilical hernias after obtaining approval from ethical review committee of the institute. All gave their written consent for the participation in the study.
Data such as name, age etc. was recorded. Patients were divided into 3 groups of 30 each. Group I were undergoing para-umbilical hernia repair by pre-peritoneal mesh insertion through CS incision, group II were undergoing paraumbilical hernia repair by infra- or supra-umbilical incision during CS incision and group III were undergoing paraumbilical hernia repair by infra- or supra-umbilical incision later on after healing of the CS wound. Each group had 30 patients. The diagnosis of umbilical hernia was confirmed by ultrasonography preoperatively. Clinical examination was carried out. Preoperative investigations included C.B.C, liver & renal function tests and plain x-ray chest. Parameters were compared in both groups. Complications were recorded in each group. The results were compiled and subjected for statistical analysis using Mann Whitney U test. P value less than 0.05 was set significant.

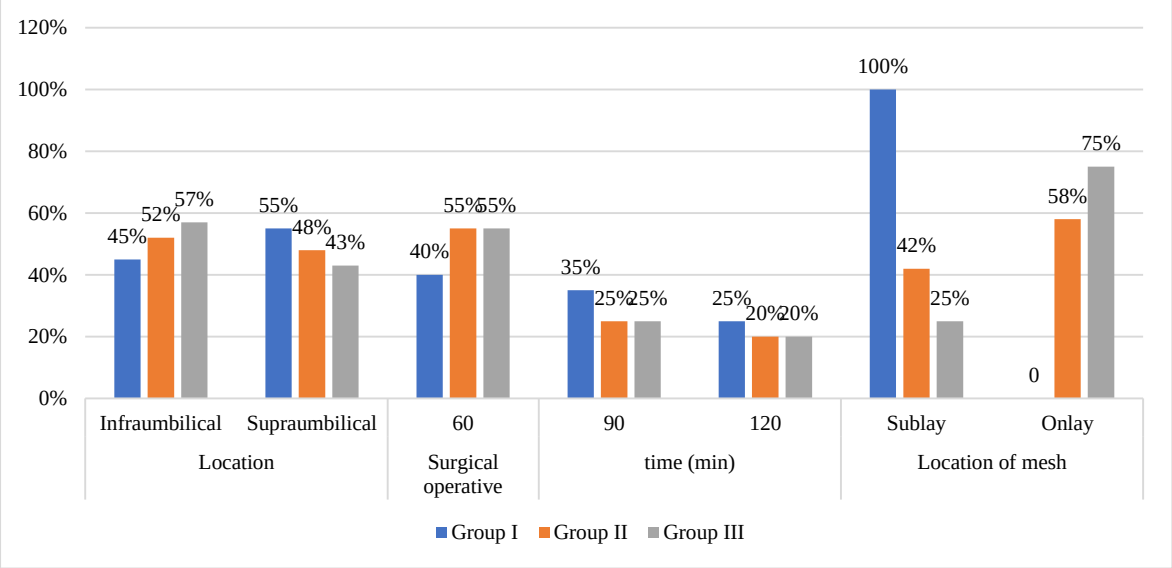
RESULTS

Table I Patients distribution

Parameters	Variables	Group I	Group II	Group III	P value
Location	Infraumbilical	45%	52%	57%	0.17
	Supraumbilical	55%	48%	43%	
Surgical operative time (min)	60	40%	55%	55%	0.05
	90	35%	25%	25%	
	120	25%	20%	20%	
Location of mesh	Sublay	100%	42%	25%	0.02
	Onlay	0	58%	75%	
Duration of hospital stay (Days)	2	30%	35%	38%	0.16
	3	48%	40%	36%	
	4	22%	25%	26%	

Location was infraumbilical in 45%, 52% and 57% and supraumbilical in 55%, 48% and 43%. Surgical operative time (min) was 60 seen in 40%, 55% and 55%, 90 in 35%, 25% and 25%, 120 in 25%, 20% and 20%. Location of mesh was sublay in 100%, 42% and 25%

and onlay in 0, 58% and 75%. Duration of hospital stay was 2 days in 30%, 35% and 38%, 3 days in 48%, 40% and 36% and 4 days in 22%, 25% and 26%. The difference was significant (P< 0.05) (Table I, Graph I).



Graph I Patients distribution

Table II Complications of procedures

Complications	Group I	Group II	Group III	P value
Wound infection	1	4	3	0.05
Wound dehiscence	1	3	2	0.02
Skin flaps ischemia	0	1	2	0.04
Seroma	0	2	1	0.04

Complications in group I, group II and group III was wound infection in 1, 4 and 3, wound dehiscence in 1, 3 and 2, skin flaps ischemia in 0, 1 and 2 and seroma in 0, 2 and 1 respectively. The difference was significant (P< 0.05) (Table II).

DISCUSSION

Para-umbilical hernias are most common in females than males. Pregnancy may lead to occurrence of umbilical hernia, or allow a pre-existing one to be more apparent, due to increasing intra-abdominal pressure progressively.[6,7] Para-umbilical hernia may be diagnosed during 1st, 2nd, or 3rd pregnancies and its presenting symptoms most probably present in the 2nd trimester in most patients.[8,9] Symptomatic umbilical hernias can emerge in every trimester of pregnancy, and they may get incarcerated or strangulated during pregnancy, although the exact rates of these complications have never been reported.[10,11] The present study to compare treatment modalities for the management of umbilical hernia in pregnancy.

We found that location was infraumbilical in 45%, 52% and 57% and supraumbilical in 55%, 48% and 43%. Surgical operative time (min) was 60 seen in 40%, 55% and 55%, 90 in 35%, 25% and 25%, 120 in 25%, 20% and 20%. Location of mesh was sublay in 100%, 42% and 25% and onlay in 0, 58% and 75%. Duration of hospital stay was 2 days in 30%, 35% and 38%, 3 days in 48%, 40% and 36% and 4 days in 22%, 25% and 26%. Eltokhy et al[12] conducted a study on 15 patients that undergoing paraumbilical hernia repair by pre-

peritoneal mesh insertion through CS incision, the second group of patients (B) included 15 patients that undergoing paraumbilical hernia repair by infra- or supra-umbilical incision during CS incision and the third group of patients (C) included 15 patients that undergoing paraumbilical hernia repair by infra- or supra-umbilical incision later on after healing of the CS wound. In group A there is shorter duration of hospital stay, no new skin incision ($p < 0.001$), low incidence of early complications like umbilical ischemia, wound infection, wound dehiscence, seroma, skin flaps ischemia ($p = 0.027$), low incidence of late complications like painful ugly scar and mesh rejection ($p = 0.05$). Group A showed the highest incidence of clinical recovery and patients' satisfaction ($p > 0.002$).

We observed that complications in group I, group II and group III was wound infection in 1, 4 and 3, wound dehiscence in 1, 3 and 2, skin flaps ischemia in 0, 1 and 2 and seroma in 0, 2 and 1 respectively. Oma et al[13] published the most recent series. In this series, 17 pregnant women with an umbilical hernia were recorded within 20,714 pregnancies in a single institution. There were five pregnant patients with an umbilical hernia. Two women noticed the hernia during previous pregnancies, one patient in the present gestation, and the other two at 5th week of pregnancy. All patients completed their pregnancies with no hernia complication.

Melkemichel et al[14] investigated the outcome of using a standardized 4×4 cm onlay-mesh for umbilical hernias ≤ 2 cm. A retrospective study was conducted at a single centre in Sweden on all umbilical hernia repairs during 2015–2019. The follow-up time was at least four months. Patients were identified using the hospital medical database. Repairs performed with suture or a sublay, ventral patch and laparoscopic mesh positioning were excluded. The patient's demographics, comorbidities, intra—and post-operative details were considered. The primary outcome was surgical site complications within 30 days. The secondary outcome was a recurrence. 80 patients were repaired with a small onlay-mesh for an umbilical hernia ≤ 2 cm. The median (range) follow-up time was 29.0 (4.3–50.1) months. The median age was 46 (26–76) years old. The median body mass index was 28 (19–38) kg/m2. The male to female ratio was 2:1. 4 patients were identified with a surgical site post-operative complication; three with seromas and one with a superficial wound infection. 3 of these were given antibiotics. 2 patients were treated with wound openings bedside. There were no registered cases of recurrence.

CONCLUSION

Performing para-umbilical hernia repair by insertion of a pre-peritoneal mesh simultaneously during performing CS through the same skin incision is the best method of management of para-umbilical hernia in pregnant woman.

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