



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**Available online at: <http://www.iajps.com>

Research Article

**A RESEARCH STUDY TO ASSESS THE ONLAY AND SUBLAY
TECHNIQUE TO REPAIR VENTRAL HERNIA**¹M Haris Baloch, ²M Hamza Khawaja, ³M Salman Baig¹BHU Rattar Laal Ahmed Pur East Bahawalpur, ²RHC Thatha Sadiqabad Tehsil Jahanian District Khanewal, ³RHC Chak No 53/M, Lodhran.**Article Received:** March 2019**Accepted:** April 2019**Published:** May 2019**Abstract:**

Objective: The objective of this research was to compare sublay and onlay technique for the repair of ventral hernia in terms of postoperative drain removal time and wound infection.

Methods: This randomized controlled study was held from June 2017 to March 2018 at Mayo Hospital, Lahore. The hernia patients were divided into two equal groups A and B. Group A was subjected to onlay technique while the latter was given sublay repair technique. After 1 year of index surgery operative repair was performed. This time period was necessary for scar maturation. After the experiment, data were analyzed using SPSS and time taken for drain removal of both the groups was compared.

Results: There were 100 patients, half in each group. Mean age of patients present in group A was 40.30 ± 0.23 days. The condition in terms of wound infection was also important.

Conclusion: For repairing ventral hernia, sublay hernia repair was a good alternative to onlay repair of ventral hernia.

Keywords: Ventral Hernia, Sublay, Onlay.

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Please cite this article in press Haris Baloch et al., *A Research Study To Assess The Onlay And Sublay Technique To Repair Ventral Hernia.*, Indo Am. J. P. Sci, 2019; 06(05).

INTRODUCTION:

A hernia is an abnormal exit of sac covered organ or part of an organ through a naturally or artificially formed opening. For hernia repair, Jorgen through knowledge about the internal structure of the body and skilled expertise is required. A ventral hernia can also be called as interior abdominal wall hernias, umbilical, paraumbilical, epigastric, spigelian and incisional hernias are included in it. Incidence varietal hernia is estimated to be 15-20% prosthetic meshes are being used for sinusoidal ventral hernia repair. with its advent, recurrence rate has decreased up to 10%. More recently, techniques have been developed to lace prosthetic mesh intraperitoneally. Due to this, the recurrence rate has dropped less than 5%. Outcomes are influenced by the position of reinforcement by the position of reinforcement. Only and sublay are the two techniques for an operation

PATIENTS AND METHODS:

This randomized controlled study was held from June 2017 to March 2018 at Mayo Hospital, Lahore. With the concert of the institute ethics committee. A written agreement was taken from all patients undergoing surgery for abdominal hernia. Patients were selected using non-probability consecutive sampling technique. Size of the sample was calculated using the WHO 'sample size calculator. Level of significant was 5% and power of test 90%. For making the following calculation drainage for onlay group was taken as (7.4 ± 1.7) days and in sublay group as (4.5 ± 1.1) days. Patients of both genders were included. Their age group was 28-25 years. They had epigastria, Para umbilical or incisional ventral abdominal hernia. Patients with strangulation removed from the experiment.

The sample was divided into 2 groups. In group A, sublay repair was given to patients whereas, in group B, patients were subjected to onlay repair. This division was made using the method. Relevant investigation and clinical examination were given to

RESULTS:

There were total 100 patients 50% in each group. Mean age in group A was (40.30 ± 4.52) years and (39.12 ± 4.58) years in group B mean WHR was taken as (0.84 ± 0.06) and (0.84 ± 0.06) and (0.78 ± 0.05) respectively in both groups. In overall result 18 (18%) patients had hypertension, 8(8%) had diabetes

that are mostly used. However, it is still unclear that which technique is more effective.

In onlay repair mesh is placed b/w the subcutaneous tissues of the abdominal wall and anterior rectus sheath. However, in sublay repair preperitoneal plane is made b/w rectus muscle and posterior rectus sheath. In sublay repair, to prevent the chance of infection pans mission, the mesh is laid deep. A study made by Eker HH proved that wound infection was 5% in open repair and 4% in laparoscopic repair.

The main reason for getting a surgical case is the improvement of quality of life-related to health and to get relief from distress. This was made for comparison of sublay versus onlay meshplasty in terms of its effect on drainage time after operating and wound infection in the final result.

the patients. For incisional hernia complications faced in previous surgery and the data was used. After 1 year of index surgery, the operative repair was started. This time was required for maturation healing of sear trained surgeons performed various operative techniques of sublay and onlay mesh repair. Data were arranged in dabbler form and co-existing and co-morbid conditions and predisposing risk factors were identified. Before the operation, the patient's waist-hip ratio was measured to estimate the presence of the fat abdominal wall. Women with $HHR > 0.85$ and men with $WHR > 0.90$ were defined as obese, according to classification data was analyzed using SPSS. Mean \pm standard radiation was used for qualitative data like age, WH ratio and drain removal time for qualitative data like hypertension diabetes mellitus obesity, gender and wound infection, frequency and percentage were calculated. Chi-square test was used for comparison of wound infection and T-test was for comparing drainage time b/w groups. $P < 0.05$ was taken as reference.

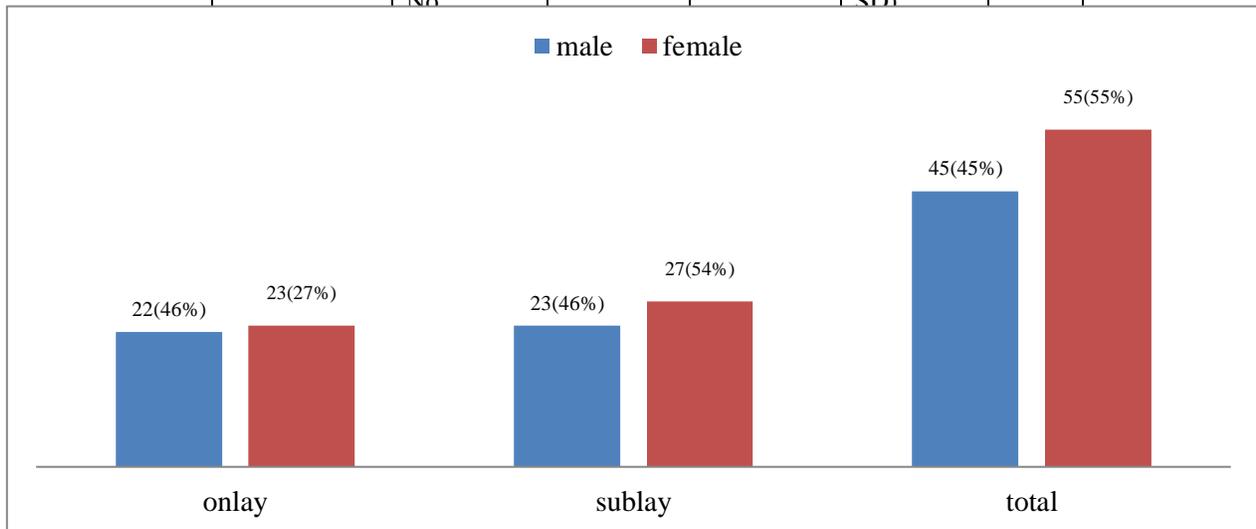
mellitus and 18 (18%) were obese. Besides, there were 28 (56%) and 27 (54%) females in A and B group respectively. 14 (28%) patients suffered from wound infection in group A and 6 (12%) in group B. Means drain removal time in group A was (4.40 ± 1.53) days and (3.06 ± 0.23) days in group B.

Table – I: Characteristics of study variables (100)

	Onlay (n=50)	Sublay (n=50)	Total (n=100)
Age	40.30±4.52	39.12±4.58	39.71±4.57
WH ratio	0.84±0.06	0.78±0.05	0.81±0.06
Hypertension			
Yes	11(22%)	7(14%)	18(18%)
No	39(78%)	43(86%)	82(82%)
Diabetes Mellitus			
Yes	6(12%)	2(4%)	8(8%)
No	44(88%)	48(96%)	92(92%)
Obesity			
Yes	5(10%)	13(26%)	18(18%)
No	45(90%)	37(74%)	82(82%)

Table – II: Comparison of wound infection & Mean drain removal time between both groups

Technique	Wound infection	P-value	Technique	Drain Removal Time (Mean ± SD)	P-value
	Yes				
	No				

**DISCUSSION:**

After an abdominal operation, the interior abdominal was contained both spontaneous and most commonly incisional hernia. About 2-11% of all abdominal operations resulted in an incisional hernia. These days tension free prosthetic mesh is being used. Its use has decreased the risks of recurrence to negligible level. Primary tissue repairs can be used for closing small hernias less than 2.5cm in diameter. However, in case larger hernia only the user of tissue repair can increase the risks of recurrence from up to 30-50%. The recurrence of hernia is a source of stress for a person as it disturbs the thinking of patient

related to result of repair and it also causes a financial burden on them. These circumstances have led to the acceptance of mesh repair. A study has proved that use mesh has increased from 34.2% in 1987 to 65.5 in 1999.

Mesh placement in a preoperational, retro-muscular sublay position overlapping the hernia defect in all directions was first time used in the late 1980s. The betterment of sublay technique has required the recurrence rates and gave better results. This has made it the best cure for ventral hernia.

Research has given different induction rates among various mesh materials. No difference has been recorded b/w onalay and sublay repairs. Once when the bacteria's reach alloplastic material, it becomes difficult for the immune system to target them. It is highly applicable for micro porous meshes, but to a lesser extent, also for meshes with larger pores that allow immune cells to enter into them. One randomized clinical test recently proved that meshes with low molecular weight can prevent some specifically determined infections at the implantation site. It was also noticed that patients who received fresh mesh material experienced less pain and mesh awareness. Wound infection can be defined as a attachment of pathogenic microorganisms and other multiplication of wound site. This invasion may result in tissue injury and a possibility of aiding disease by various cellular or toxic mechanisms. In mesh hernioplasty, it is a terrifying problem sometimes it becomes so severe that it becomes compulsory to remove the mesh. But fortunately, mostly small wounds are observed in the research. According to its risks of infections was 10% to 40%. At the local level, many studies have recorded an infection rate of 5% to 10%. Which was comparatively toousles. One study recorded it like 12% while the other reported the wound infection as 6%. In our experiment wound infection observed in sublay was 12% and in onalay was 28%. Sublay mesh repair can be considered as the best alternative to applied to all types of ventral hernia.

CONCLUSION:

A better and effective technique for repairing ventral hernia was sublay mesh repair. After operation the time complication regarding drainage and wound infection was much low.

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