



## A STUDY OF TOTAL PERITONEAL (TEP) MESH PLACEMENT BY OPEN METHOD IN GROIN HERNIAS IN A TERTIARY CARE HOSPITAL.

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**ABSTRACT** AIM- THE AIM OF THE STUDY IS TO FIND OUT MERITS AND DEMERITS OF EXTRA PERITONEAL MESH PLACEMENT IN GROIN HERNIAS IN OPEN METHOD

**OBJECTIVE** - A prospective study of management of groin hernias by of extra peritoneal mesh placement in open method in Department of general surgery ,king George hospital ,Andhra medical college for a period of one year i.e from april 2017 to april 2018

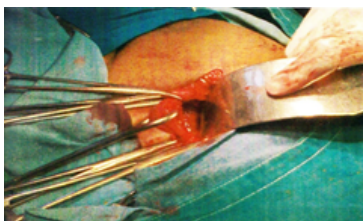
**MATERIALS AND METHODS-Inclusion criteria** – patients complaints of inguinal hernia either direct or indirect , unilateral or bilateral , reducible or irreducible cases of primary or recurrent cases who required repair.

**Exclusion criteria** – patient with congenital inguinal hernia, obstruction/strangulated/incarcerated hernia and those who opted for laparoscopic surgery

### KEYWORDS :

#### SURGICAL PROCEDURE -EXTRA PERITONIAL MESH PLACEMENT IN OPEN METHOD

An oblique incision parallel to the groin crease gives the best exposure for all inguinal hernias. The incision begins 2 cm medial and inferior to the anterior superior iliac spine at running 2 cm caudal and parallel to the groin crease, towards the pubic tubercle. Extending the incision on both sides increases the risk of bleeding from following vessels tie epigastric, ascending branches of the superficial circumflex iliac on the lateral aspect and superficial external pudendal on the medial aspect. The incision depended and the external oblique is incised along the direction of its fibers taking care to prevent injury to the ilio inguinal and ilio hypogastric nerves. The superior and inferior leaves of the external oblique are dissected to expose the internal oblique muscle laterally and the rectus muscle medially. The dissection of the inferior leaf is continued to expose the shelving edge of the inguinal ligament. The spermatic cord along with its fascia is readily identified. A longitudinal incision is made over the outer layer (cremasteric muscle) of cord structures. Once the cord has been separated from separated from its outer layers, we look for the presence of an indirect sac. The sac is carefully separated from cord structures without injuring its contents. The dissection of the sac from the cord structures is continued upto the level of the internal ring. Small indirect sac do not require ligation and can be invaginated. In case of large indirect hernias the sac is transfix and ligated at the level of the internal ring. If the sac is adherent to the cord structures then it is opened initially to aid in separation. In presence of sliding hernias, we do not attempt to open the sac as this might jeopardize the blood supply of the viscera.



#### Dissection of preperitoneal space

#### 15 x 15cms Mesh Placement in preperitoneal space

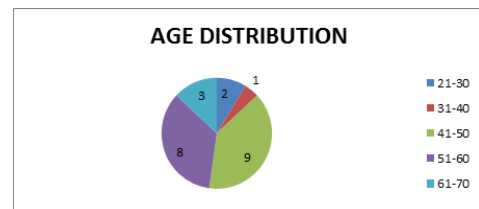
#### Results And Analysis

The Details of all the 23 cases were drawn as master chart with regard of relevance. All the cases were analyzed and the result of the study were as follows:

**Table 1: Age Incidence**

Age group (Years)	No. of Cases	Percentage
21-30	2	8.69%
31-40	1	4.34%
41-50	9	39.13%
51-60	8	34.785
61-70	3	13.04%

In the study, maximum number of patients presented between 41 and 60 years of age.

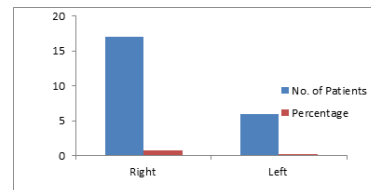


Over the period of study only male patients are presented. Even through females are not excluded.

**Table 2: Location Hernia**

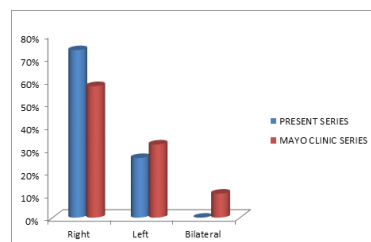
Location	No. of Patients	Percentage
Right	17	73.91%
Left	6	26.08%

In present study 73.91% had right-sided hernias, 26.08% had left sided hernias. None of the Patients had bilateral Hernias.



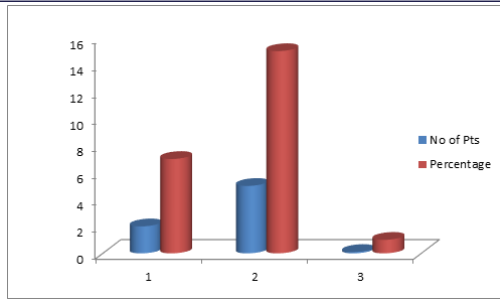
**Table 3: Comparison Of Side Hernia With Mayo Clinic Series**

Location	PRESENT SERIES	MAYO CLINIC SERIES
Right	73.19%	57.5%
Left	26.08%	32%
Bilateral	0%	10.5%



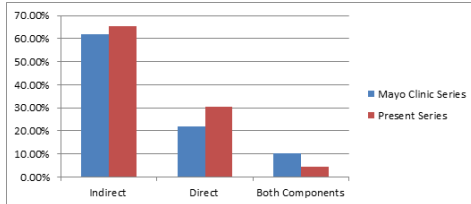
**Table 4: Types Of Hernia**

Location	PRESENT SERIES	MAYO CLINIC SERIES
Indirect	15	65.21%
Direct	7	30.43%
Both Components	1	4.34%



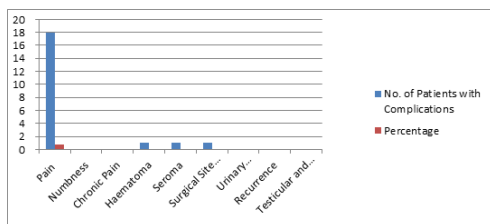
**Table 5: Comparison Of Side Of Hernia With Mayo Clinic Series**

Location	Mayo Clinic Series	Present Series
Indirect	61.8%	65.21%
Direct	21.8%	30.43%
Both Components	10.4%	4.34%



**TABLE 6: Post-Operative Complications**

Post Operative Complications	No. of Patients with Complications	Percentage
Pain	18	78.26%
Numbness	0	0%
Chronic Pain	0	0%
Haematoma	1	4.34%
Seroma	1	4.34%
Surgical Site Infection	1	4.34%
Urinary Retention	0	0%
Recurrence	0	0%
Testicular and Scrotal Complications	0	0%



**TABLE 7: Various Mean Duration of Data Collected**

<b>Mean Duration of Surgery (Mins)</b>	<b>65.21</b>
<b>Mean duration of Hospital Stay (Days)</b>	<b>2.52</b>
<b>Mean Duration of Return to normal work (Days)</b>	<b>10Days</b>

In our Study Complications Like Recurrence, ischemic Orchitis, Scrotal Swelling and Hydrocele were not recroded. May be the sample size was too small.

**DISCUSSION**

The present study is to evaluate the advantages and disadvantages of the Total extra peritoneal mesh placement in open method procedure in management of groin hernias. A total of 23 patients underwent this procedure in management of groin hernias. Preoperative workup was done. In this present study all patients are male and no females patients are attended, although females are not in exclusion criteria. In the present study the age of the patients ranged between 22-70 years and maximum no of patients presented between 4-50 years of age

**Type of Hernia**

Type	Palanivelu study	R.H.R. Study	Mayo clinic series	Present study
Direct	122(24%)	349(37%)	21.8%	30.43
Indirect	386(76%)	595(63%)	61.8%	65.21
Both	0%	0%	10.4%	4.34

The above table shows the numbers and percentages of direct and indirect hernias in three previous studies and the present study. In present study indirect hernia are 65.21% , direct are 30.43% and both components are 4.34%

**Location of Hernia**

As can be expected the incidence of hernia is more common on the right side owing to the embryological fact the right testis descends later than the left and higher incidence of patent process us vaginalis on the right side. The following table compares the findings of the present study with previous three studies

Location	Bholla Singh Sidhu et al. (1999)	Bahadir Kulah et al. (2001) <sup>45</sup>	MAYO CLINIC SERIES	PRESENT SERIES
RIGHT	60%	63%	57.5%	73.91
LEFT	36%	37%	32%	26.08
BILATERAL	4%	-	10.5%	0

**Intra Operative Complications:**

Out of 23 cases no pt involved intraoperative complication or life threatening Complications. A study by N.Eumayar L, Giobbie-Hurder A, Jonassen 0, et al<sup>46</sup> 2004.

Compare open mesh versus laproscopic repair of inguinal hernia shows intraoperative complications more with laproscopic repair(4.8%),when compare With open repair(1.9). Life threatening complications more with LAP (1.1) when compare with open(0.1). In present study no such complications happened.

**Post operative complications:**

The post operative complications like pain, haematoma, seroma, surgical site infections are treated accordingly. In this study out of 23 patients 1 pt get haematoma 4.34%, 1 pt have seroma 4.34%, 1 pt have superficial infections 4.34% .No pt developed Deep infections, numbness, shooting pain, urinary retention scrotal swellings, Scrotal or Testicular complications, recurrences.

**A Prospective Randomized Trials Comparing Laparoscopic Inguinal Hernia Repair with Open Tension-Free Repairs and our study**

Study	Year	Approach (N)	Complications (%)	Mean Follow Up(Mo)	Recurrence (%)
Bringman et al <sup>47</sup>	2003	TEP 92	9.8	20	2.2
		Plug 104	15.4		1.9
		Lichtenstein 103	20.4		0
Lal et al <sup>48</sup>	2003	TEP 25	12	13	0
		Lichtenstein 25	4		0
Neumayer et al <sup>49</sup>	2004	TEP (90%)/TAPP (10%) 989	39	24	10
		Lichtenstein	33		5
Our Study	2011	Open TEP 23	13.04	6	0

TAPP, transabdominal preperitoneal; TEP, totally extra peritoneal. There is no case was reported for recurrence in present study, the overall complications for this present study is 13.04%(3 pts).As post operative pain subsides within 24-48 hrs only, 3 patients had other complications.

**Prospective Randomized Trials Comparing Various Open Tension-Free Inguinal Hernia Approaches**

Study	Year	Patients	Complications (%)	Mean Follow-up(mo)	Recurrence (%)
Nienhuijs et al <sup>50</sup>	2005	PHS 111	14	15	1
		Plug 113	9		3.5
		Lichtenstein 110	10		2.7
Vironen et al <sup>51</sup>	2006	PHS 150	26	12	0
		Lichtenstein 150	28		0.6

Kingsnorth et al <sup>52</sup>	2002	PHS 103	N/A	12	0
		Lichtenstein 103	N/A		2
Kingsnorth et al	2000	Lichtenstein 68	9	1.5	0
		Plug 73	0		0
Total		PHS 364	33	10	0.25
		Lichtenstein 431	12		1.3
		Plug 186	4.5		1.8
Our study		Open TEP23	13.4	6	0

In the present study 78.12% patients complained immediate postoperative pain. In our study 4.34% of patients developed haematoma .In present study hospital stay is 2.52 day. In this study mean duration of return to normal work is 2.5days.

## CONCLUSION

In the present study, 23 patients with groin hernia who had undergone surgery of Total extra peritoneal mesh placement by open method were studied and analyzed and the following conclusions are drawn.It commonly seen in males, peak incidence is between 41-50years,Incidence of Indirect hernias was almost twice than that of direct hernias, Right sided hernias are the commonest than Left sided hernias, Learning curve for this procedure is short and can be learned easily,Average duration of the procedure is nearly 65 min,Fixation of mesh can be checked intraoperatively, Can identify other hernias like femoral hernias,obturator hernias, Post operative complications like post operative pain, haematoma, wound infection, seroma were almost same as other conventional methods,Recurrence of hernia for this procedure is less when compared with other conventional methods and laproscopic procedures.As in in open TEP the entire myopectineal line is strengthened by big mesh,The average duration of hospital stay for this open TEP is 2.5 days, Early to work is possible with this procedure,the mean duration for return to normal work is 10 days, With the above results, open extra peritoneal mesh placement is very effective as entire defect is covered with mesh so recurrence is very low and early to work is possible. The limitations of study are relatively small number of patients and relatively short period of study and follow-up,

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