



ROLE OF EFFICACY OF PRESSURE GARMENTS FOR PREVENTION OF SEROMA FORMATION AFTER LAPAROSCOPIC HERNIOPLASTY.

Dr. Shyam Bhagat* MBBS, PG Resident (General Surgery), *Corresponding Author

Dr. Snehal Purandare MBBS, MS General Surgery

Dr. Harshal Tambe MBBS, MS General Surgery

ABSTRACT

Hernias of the abdominal wall constitute an important public health problem. Laparoscopic inguinal hernia repairs Total Extra-peritoneal (TEP) and Trans-abdominal pre-peritoneal (TAP) techniques are minimal access procedures for inguinal hernia repair. Seroma formation is a frequent complication of laparoscopic inguinal hernia surgeries. This is a prospective, observational comparative study to evaluate the efficacy of pressure garments in prevention of post-operative seroma formation after laparoscopic hernioplasty conducted at a tertiary care hospital.

KEYWORDS : Post operative Seroma, Laparoscopic inguinal hernioplasty.

INTRODUCTION

Inguinal hernia repair is one of the commonest surgeries performed all over the world. Over the last one decade, the field of hernia surgery has had a significant transformation, because of innovations in mesh technology and surgical techniques. Elective operative repair is the only acceptable method for treatment of inguinal hernias. Transabdominal pre- peritoneal (TAPP) and Total extra peritoneal (TEP) techniques are the two commonly adopted laparoscopic surgical procedures for inguinal hernia repair.

As with any surgery, laparoscopic hernia repair is also associated with different complications such as bleeding, infection, seroma formation, scrotal swelling, recurrence, etc. However, one of the most frequent complication after laparoscopic repair is seroma formation at the hernia site.

Seroma formation occurs whenever dead space is created. In literature the rate of seroma formation reported after laparoscopic inguinal hernia repair is 0.5%-15%.^{1,2} There is an increase in the volume and frequency of seroma formation in complete hernias.^{3,4} During physical examination in post-operative follow up, seroma is detected clinically and in most of the cases seromas do not pose a problem but may cause minimal discomfort during normal daily activity.

The seroma often fills the previous hernia site and inguinal canal; thus, a suspicion of recurrence would be raised by the patient, and also often puts the surgeon in a dilemma as to whether it is a real recurrence or just a seroma.

AIMS & OBJECTIVES

1. To study the clinical correlation between the use of pressure garments in the form of scrotal support and post-operative seroma formation.
2. To study the effects of post-operative seroma in the patients of laparoscopic hernioplasty.

MATERIALS & METHODS

This is a prospective, observational comparative study of patients treated at tertiary health care Hospital, Pune, Maharashtra. The patients identified from the admission starting from April 2019 to September 2020 [18 months] with complete knowledge and consent of the patient. Type of study is Prospective observational comparative study. Patient randomized into two groups, **Group A :-** Patient given pressure garment i.e. scrotal supporters. **Group B :-** Patient not given pressure garment i.e. scrotal supporters. Samples were selected by simple random sampling by a computer-generated list of random numbers.

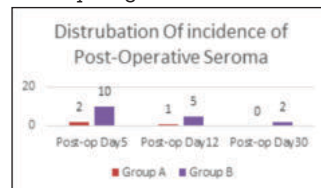
The pressure garments used were standard scrotal supporters in four different sizes (S, M, L, XL & XXL) with standard height and width. Scrotal supporters were given to the patients as per the recommendation from the manufacturer depending on their waist measurement.

Patient then follow up in OPD on postoperative Day 5, Day 12 and Day 30 for postoperative follow up.

All patients were evaluated with the help of visual analogue scale based on parameters viz., palpable seroma, localized tenderness, superficial skin changes, local rise in temperature, associated signs and symptoms systemic infection.

OBSERVATIONS & RESULTS

The data on categorical variables is shown as n (% of cases). The inter-group statistical comparison of distribution of categorical variables is tested using Chi-Square test or Fisher's exact probability test if more than 20% cells have expected frequency less than 5. (1) In the entire study, the p-values less than 0.05 are considered to be statistically significant. Inter-Group Distribution of incidence of palpability of seroma among the cases distributed. The distribution of incidence of post-operative seroma at post-operative day 5, post-operative day 12 & 30 is higher in Group B as compared to group A. P-value for seroma formation after post operative day 5 is 0.03 which is statistically significant.. On other hand, on post operative day 12 & 30, P value is 0.26 & 0.49 which is statically insignificant.

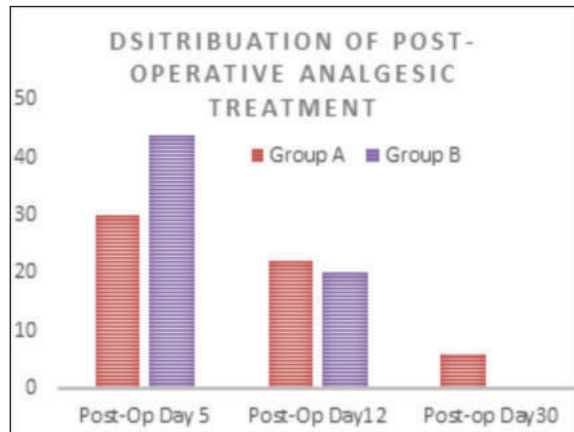


Graph 1:-Inter-Group Distribution of incidence of seroma among the cases distributed.

Table No 1 :- Inter-Group Distribution of incidence of seroma among the cases distributed.

Seroma	Group A (N=50)		Group B (N=50)		P value
	N	%	N	%	
POD5	Yes	02	4	10	0.03
	No	48	96	40	80
POD12	YES	1	2	05	10
	No	49	98	45	90
POD30	Yes	00	00	02	4
	No	50	100	48	96

Distribution of post-op analgesic treatment given at post-operative day 5, post-operative day 12 & 30 did not differ significantly between two groups.



Graph 2 :- Inter-Group distribution of post-operative analgesic treatment

Inter-Group Distribution of type of sac in Hernia of 50 cases studied In which Group A,26 (52%) had complete inguinal hernia & 24 (48%) had incomplete inguinal hernia.

Of 50 cases studied Group B, 23 (46%) had complete inguinal hernia & 27 (54%) had incomplete inguinal hernia. The Distribution of type hernia among the cases studied did not differ significantly.

Table 2:- Inter Group Distribution of type of sac in hernia among the cases studied.

Type Of Hernia	Group A (n=50)		Group B (n=50)		P-value
	N	%	N	%	
Complete	26	52	23	46	0.548
Incomplete	24	48	27	54	
	50	100.0	50	100.0	

DISCUSSION :-

In this prospective study, during the study period of 18 months, 100 patients were selected based on inclusion & exclusion criteria & they were operated for laparoscopic inguinal herina. The number of patients were randomly divided into groups, Group A -50 patients who received post-operative surgical site compression and pressure garments and Group B-50 Patients who did not received surgical site compression and pressure garments. We compared the two group on the basis type of hernia, incidence of seroma, need of analgesics.

In our study, the overall rate of seroma formation at post-op day 5, post-op day 12 and post-operative day 30 was higher in group B Compared to group A. But seroma formation on Post Operative Day 5 P-value = 0.03 which is < 0.05 & statistically Significant. On other hand, Onseroma formation on Post Operative day 12 & 30 P value is 0.26 & 0.49 which is statically insignificant. The incidence rate of post-operative seroma formation is significantly lower in our study compared to the study of J. K. M. Fan et.al.⁵ In their study they used a post-operative pre peritoneal closed suction system to Prevent the incidence of seroma formation. The overall incidence of clinical seroma formation in their study was 25.6% on postoperative day 1, 60.3% on Post-operative day 6, 13.2% 1 month and 0% 7 months post-operatively.

In the present study, The incidence of need of analgesics, at post-operative day 5 is significantly higher in Group B compared to Group A (P-value<0.05 for all). However at post-operative day 12 and post-op day 30 it did not differ

significantly between two study groups (P- value > 0.05 for all). These findings are consistent with the study by J. K. M. Fan et.al.⁵

Following surgery some degree of post-operative pain was common and it was expected clinically. According to Aasvanget, the incidence of post- operative pain following laparoscopic repair is 6%. Also, Sajid et al, noted that the etiology of post-operative pain following laparoscopic repair is unclear. Incidence of seroma, post-operative pain, did not influence the mean duration of hospital stay and the incidence of discharge. The findings were consistent with the study by J. K. M. Fan et.al.⁵

CONCLUSIONS

To summarize, in our post-operative analysis of 100 patients undergoing Laparoscopic inguinal hernia surgery by trans abdominal (TAPP) and Totally Extra peritoneal Approach (TEP), there is significant difference found between the two groups first in which the pressure garments were used and second in which the pressure garments were not used in terms of formation of seroma, particularly on post operative day 5.

However there is no exact criteria to evaluate seroma as a complication. Patient's complaints, size, location and duration are important considerations. Since seroma formation is a natural course after the laparoscopic inguinal hernia surgery, aim of this study was to evaluate the efficacy of pressure garments in prevention of post-operative seroma formation after laparoscopic hernioplasty.

Our preliminary results indicate that the use of post-operative pressure garment following laparoscopic inguinal hernia surgery significantly reduces the incidence of seroma formation in early post operative period. Although the results of this study are promising, for further evaluation randomized controlled trials & comparative studies are necessary.

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