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DRAINAGE IN LICHTENSTEIN'S HERNIA REPAIR: IS IT WORTH AND ADVISABLE?

General Surgery

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ABSTRACT

Lichtenstein's hernioplasty is considered to be gold standard procedure for inguinal hernia as far as open surgical methods are concerned but there is no consensus among the surgeons regarding putting a subcutaneous suction drain. The present study was undertaken to study the exact role of using subcutaneous suction drain in Lichtenstein's hernioplasty in terms of complications and overall postoperative hospital stay.

METHODS: In this study a total of 300 male cases of inguinal hernia were operated by Lichtenstein's method and a subcutaneous suction drain was placed in 120 of the patients on a random basis while in rest of 180 patients no such drain was placed. The type of presentation, age, type of hernia, duration of operation, post-operative pain, early wound complications and length of hospitalization were compared between the two groups of patients.

RESULTS: In Drainage group higher incidence of significant post-operative pain was seen and also the average post-operative stay was higher. But, on the other hand, all other complications like haematoma, seroma, scrotal oedema and wound infections were much higher in patients where no drain was given.

KEYWORDS

Lichtenstein's hernioplasty, Suction Drain, seroma, haematoma, mesh

INTRODUCTION

Inguinal hernia are common surgical encounters and Lichtenstein's hernioplasty is considered to be gold standard as far as open surgery is concerned. The use of prosthetic mesh reduces the rate of recurrence but may produce a series of post-operative complications. In such situation, bacterial adhesion and biotin formation on the mesh surface affects the implant's tissue integration and host tissue regeneration, making preventive measures to control prosthetic infection a major concern. The complications like wound infection, seroma, haematoma and scrotal oedema associated with mesh hernioplasty are all discussed but exact role of putting a subcutaneous suction drain routinely or in cases when extensive dissection is done, have not been documented well. Subsequently this study was undertaken to study the role of using subcutaneous suction drain in Lichtenstein's hernioplasty to establish local evidence-based practices for our setups.

METHODS AND MATERIAL

This study was carried out in the Department of Surgery, PMCH., Patna on patients of Inguinal hernia admitted through surgical OPD from December 2016 to November 2019.

Inclusion criteria:

All male patients of inguinal hernia admitted through surgical OPD above 18 years of age.

Exclusion criteria:

Congenital hernias and complicated hernias were excluded from the study.

Associated medical conditions like Diabetes, Hypertension, CAD, COPD, BPH etc. were controlled before undertaking operation. All the patients were operated by the Consultant or by Senior Resident under direct supervision of the consultant. The operations were performed by standard Lichtenstein's technique with utmost gentleness and polypropylene mesh were affixed by 2-0 prolene sutures and the external oblique was closed with vicryl 2-0 sutures. Adequate haemostasis was secured. Now the patients were randomly divided into two groups; Group A where a subcutaneous suction drain was given and Group B where no drain was given. If drain is given it was brought out through the groin but by a separate incision. All patients were given preoperative Inj. Amoxicillin-clavulanic acid 1.2 g IV once at the induction of anaesthesia. Postoperatively, Inj. Diclofenac 75 mg IM, BD was given for 48 hours to both the groups. Postoperatively Inj. Amoxicillin-clavulanic acid 1.2 g IV BD was given for 48 hours to both the groups. Postoperatively patients were evaluated for the following complications-

1. Pain -(persistent pain even after 48 hours of analgesic treatment was considered as significant); treated by Inj. Tramadol IM
2. Haematoma - evacuated if required.
3. Seroma – aspirated if required.
4. Wound Infection - Confirmed by culture and sensitivity and treated by drainage and appropriate antibiotics.
5. Postoperative hospital stay.
6. Patients were discharged when considered fit. Sutures were removed on 8th post op day.
7. Daily recordings of output of drain is recorded and drain was removed when the output of drain was less than 30 ml in 24 hours.
8. Patients are followed up for a period of 6 weeks postoperatively.

The quantitative variables were analysed using independent sample t-test at 95% confidence level i.e. α=0.05 and the qualitative variables were analysed in 2 x 2 chi square matrix at 95 % confidence level. Hence, the variables whose *p*- value were less than 0.05 were considered statistically significant.

RESULTS

A total of 300 inguinal hernia patients were undertaken for this study, out of which 120 patients belonged to Group A where subcutaneous suction drain was given and rest 180 patients belonged to Group B in which no drain was given. The mean age of the patients were 36.72±12.27 (ranging from 19 -70 years) but the maximum number of cases aged between 30 to 40 years.

The types and location of hernia and their distribution in two groups are presented in Table 1.

Table 1: Types and location of hernia in two groups

	No. of cases (%) (n=300)	Drainage Group A (n=120)	Non drainage group B (n=180)
Right sided	150 (50%)	60	90
Left sided	110 (36.7)	42	68
Bilateral	40 (13.3%)	18	22
Direct hernia	108 (36%)	41	67
Indirect hernia	148 (49.3%)	61	87
Both direct and indirect	42 (14%)	17	25
Prevesical hernia	2 (0.7%)	1	1
Recurrent hernia	28 (9.3%)	12	16
Sliding hernia	32 (10.7%)	20	12

In Drainage group significant post-operative pain was seen in 26.7% of cases as opposed to 6.7% in the non-drainage group. Average Post-operative stay was also higher in drainage group (6.2 days as opposed to 4.2 days in non-drainage group).

On the other hand, all other complications like haematoma, seroma, scrotal oedema and wound infections were much higher in patients

where no drain was given. In none of the patients mesh removal was needed.

Table 2: Summary of observations

	Drain Group(n=120)	No drain(n=180)	p- value
Significant Post op pain	32(26.7%)	12 (6.7%)	0.00001
Haematoma	8(6.7%)	21(11.7%)	0.15
Seroma	7(5.8%)	26(14.4%)	0.019
Scrotal Oedema	12(10%)	24(13.3%)	0.38
Wound infection	8(6.7%)	28(15.6%)	0.020
Removal of Drains (Post op day)	3-6	--	--
Post op Hospital Stay(days)	6.2±3.25	4.2±3.6	--
No of patients with follow up	108(90%)	168(93.3%)	--

DISCUSSION

In this study a total of 300 patients had been operated by open Lichtenstein's method of repair out of which subcutaneous suction drain was placed in 120 patients and rest 180 patients were without any type of drain.

In the study significant immediate post-operative pain was found to be higher in drainage group (26.7%) as opposed to 6.7% in non-drainage group with a p-value of 0.00001, which is highly significant. Amruthavalli B. (2017), in his study of 50 patients of Lichtenstein's hernioplasty, also observed a higher value of post-operative pain in drainage group (32%) than in non-drainage group (8%) with a p-value of less than 0.05.

In our study post-operative haematoma was higher in non-drainage group (11.7%) as compared to 6.7% in the drainage group but this was not considered statistically significant as the p value was 0.15. However, this observation was contrary to observations by Amruthavalli B. (2017) and Mahmudlu R. (2011), who found the incidence of haematoma to be slightly higher in drainage group. This difference may be because of putting in drains only in difficult cases.

The incidence of post-operative seroma was found to be higher in non-drainage group (14.4%) than in the drainage group (5.8%) with statistically significant p value of 0.019. In a study conducted by Aachen group (1997) found that, out of 100 patients, significant subcutaneous fluid collections were observed in 30% patients in non-drainage group compared with 4% patients in drainage group. Amruthavalli B. (2017) found equal incidence of seroma in two groups whereas Mahmudlu R. (2011) reported a higher incidence of seroma in drainage group (3.2% as opposed to 0% in non-drainage group). This clearly shows that studies concerning drainage to prevent seromas are contradictory. In our opinion, however, serum or blood may accumulate in the dead space surrounding the mesh and placing a negative suction drain will drain the collecting fluid as well as also help in obliterating the dead space. This will certainly help in early adhesion formation and reduction in incidence of seroma formation.

In the present study superficial wound infection was observed in 15.6% patients of non-drainage group in comparison to 6.7% in the drainage group with a significant p value of 0.020. All of the patients recovered on daily dressings with antibiotics and none of the patients required removal of the mesh. Amruthavalli B. (2017) also observed a higher value of wound infection in non-drainage group (20% as opposed to 16% in drainage group). Infection represents a dreaded complication for all types of surgeries especially when a prosthesis has been used. This also results in a higher rate of recurrence as the repairs are destroyed along with the tissues.

In the present study the mean post-operative stay was found to be higher in drainage group (6.2±3.25 days) as opposed to 4.2±3.6 days in the non-drainage group. Amruthavalli B. (2017) found mean hospital stay in case of drainage group to be 9.1 days as compared to 6.7 days in the non-drainage group. Rahim Mahmudlu et al (2011) observed postoperative hospital stay to be 2.9 days in drainage group and 1.48 days in the non-drainage group. In another study conducted by Aachen group (1997), duration of hospital stay was 7 days in case of drainage group and 5 days in case of non-drainage group. All these studies, including our study, indicate that use of drains may increase the post-operative hospital stay.

CONCLUSION

Putting in a subcutaneous suction drain in patients undergoing Lichtenstein's hernia repair increases immediate post-operative pain and hospital stay of the patient, but on the other hand it significantly reduces the complications like haematoma, seroma, scrotal oedema and wound infection. It is worth to put in a drain especially in extensive/ difficult dissections, longer operative time and insufficient haemostasis. It will certainly do no harm than good. But to advise it as a routine measure we probably need a randomised controlled trial with a larger sample size.

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