International Surgery Journal
Khan A et al. Int Surg J. 2024 Sep;11(9):1502-1505
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: https://dx.doi.org/10.18203/2349-2902.isj20242289

Original Research Article

The use of scrotal support post inguino-scrotal hernia repair: a prospective observational study

Abrar Khan*, Syed Ameenuddin Ali, Arefa Almas

Department of Surgery, JIIU's IIMSR, Jalna, Maharashtra, India

Received: 28 July 2024
Revised: 09 August 2024
Accepted: 12 August 2024

***Correspondence:**
Dr. Abrar Khan,
E-mail: aabrarr@gmail.com

ABSTRACT

Background: Inguino-scrotal hernias pose a significant clinical challenge, requiring surgical intervention for resolution. Post-operative care is crucial for optimizing outcomes and enhancing patient comfort. Scrotal support has emerged as a potential adjunctive therapy in this context. The aim of this study was to compare the occurrence of scrotal swelling in the form of edema and hematoma in post-operative cases of inguinal hernia repair cases in our surgical unit in a tertiary care center.
Methods: Our study was carried out at a rural tertiary care center from July 2022 to June 2024 and includes 389 patients who underwent elective surgical repair for inguino-scrotal hernias. Scrotal support was provided post-operatively, and patients were followed up at regular intervals. The study population was divided into two groups, group A with regular under garments and group B were given scrotal support (coconut bandage). Total numbers of 1050 inguino-scrotal hernia surgery were performed of which 389 patients were operated in a single unit by two surgeons and we included in the study. Of the 389 cases, 208 cases were in group A and 181 cases were in group B. All are male patients with the age ranges from 35-75 years.
Results: In group A, 37 patients (17.78%) developed scrotal hematoma and edema and in group B, 16 patients (8.83%) developed similar findings.
Conclusions: Scrotal support post inguino-scrotal hernia repair demonstrates promising benefits, including decreased pain and swelling and improved patient satisfaction, without compromising surgical outcomes.

Keywords: Scrotal support, Inguino-scrotal hernia, Scrotal edema

INTRODUCTION

Hernia involving inguinoscrotal region is the commonest form of all hernias and surgical repair is the only acceptable method for its treatment. Inguinal hernia repair is considered the most common elective surgical procedure performed and has various techniques as per surgeon preference, the most common of which is the Lichtenstein repair with use of mesh.[1]

Inguinal hernia repair is associated with different possible complications such as infection, bleeding, recurrence, scrotal swelling and nerve damage.[2] Massive penoscrotal hematoma has been reported in patients with bleeding disorders. The inguinal hernioplasty is an important procedure as an untreated hernia can lead to acute life-threatening complications such as intestinal obstruction, infarction, and strangulation.[3]

Scrotal edema and hematoma are cause of significant morbidity after various types of inguinoscrotal surgeries.[4]

Various types of scrotal support have been in use, with varying degrees of success in preventing such complications.[5]

If the patients suffer a massive hematoma post inguinal hernia repair surgery operative evacuation of the hematoma may be necessary to avoid the development of necrotising fascitis of the scrotum (Fournier's gangrene).[6]

Seroma formation in post-operative cases of inguinal hernia repair is not uncommon and is often associated with large inguinoscrotal hernia.[7]

Aim

The aim of this study was to compare the occurrence of scrotal swelling in the form of edema and hematoma in two divided groups. Group-A patients with simple under garments and group-B patients with scrotal support (Coconut bandage).

METHODS

A prospective study was carried out at JIIU's IIMSR, Warudi, Jalna, India a rural tertiary health care center over a period of two years (July 2022 to June 2024).

The study population were divided into two groups; A and B. Group A without any scrotal support but with simple under garments and group B with scrotal support (coconut bandage).

Surgeries were performed by two surgeons in one surgical unit. Operative Techniques The anterior tension-free repair (Lichtenstein repair) was performed using polypropylene mesh.

Aim of the study was to measure the occurrence of scrotal edema, in the 2 respective groups and to compare the results. The secondary end points were to measure post-operative pain, wound infection and bleeding.

Written and informed consent were obtained from all the patients before the day of surgery. The steps of both operative interferences were explained to all patients. And both patient and their relatives were counseled about the pros and cons of the procedure. The study was started after taking approval from ethics committee.

Data analysis: Data entry was done in Microsoft excel and analysis using Open Epi Info version 3.01. Data was summarized in percentages and proportions.

This is a time bound study and was conducted in a rural tertiary health care center over a period of two year (started in July 2022 and completed in June 2024).

Inclusion and exclusion criteria

The study included all adult male inguino-scrotal hernias that underwent meshplasty and excluded pediatric hernias, recurrent hernias, patient >75 years of age, and in whom mesh was not used (herniorraphy) so as to maintain uniformity of procedure.

RESULTS

Data and surgery related information are shown in Table 1 and 2 and Figure 1 and 2.

In this study, total 389 patients underwent inguinal hernia repair in both groups (Figure 1). All were male patients with the age ranging from 35-75 years (Average age-55).

In group A (37/208) i.e., 17.78% developed of edema and scrotal discomfort.

In group B (16/181) i.e., 8.83% developed of edema and scrotal discomfort.

This analysis revealed a notable reduction in post-operative pain levels and swelling among patients utilizing scrotal support. Additionally, patients reported higher satisfaction levels with their overall recovery process when incorporating scrotal support into their post-operative care regimen. Also, it was noted that there were no observed differences in recurrence rates between supported and unsupported groups

Patients of both groups were subdivided according to the severity of the hematoma i.e mild,moderate and severe given in Figure 2.

Table 1: Age wise distribution of the study population in both groups.

Groups	Age <50 (35-50) (in years)	Age >50 (51-75) (in years)
A	91	117
B	84	97

Table 2: Presence of scrotal edema in post op cases of inguinal hernioplasty.

Group	Scrotal edema	No scrotal edema
A (n=208)	17.78%	82.22%
B (n=181)	8.83%	91.17%

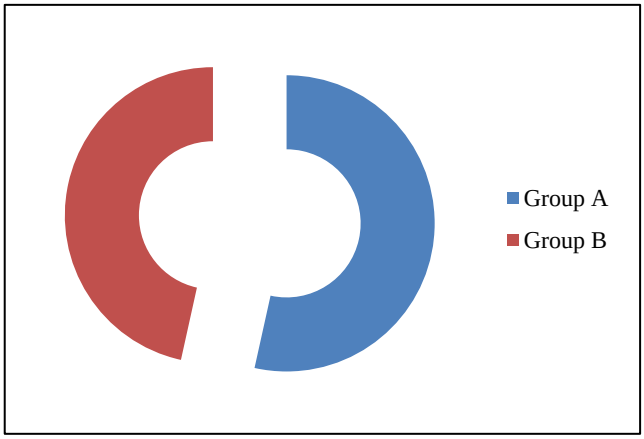

Figure 1: Total no of inguinal hernia cases operated in both groups.

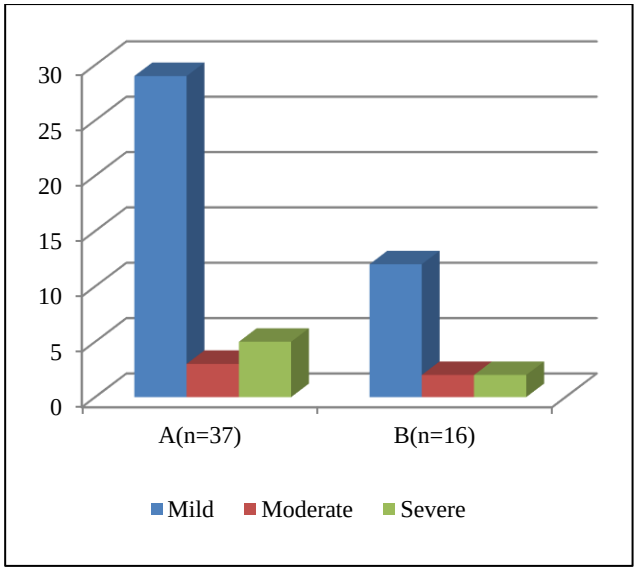

Figure 2: Distribution of patients regarding grades of scrotal edema in group A and B.

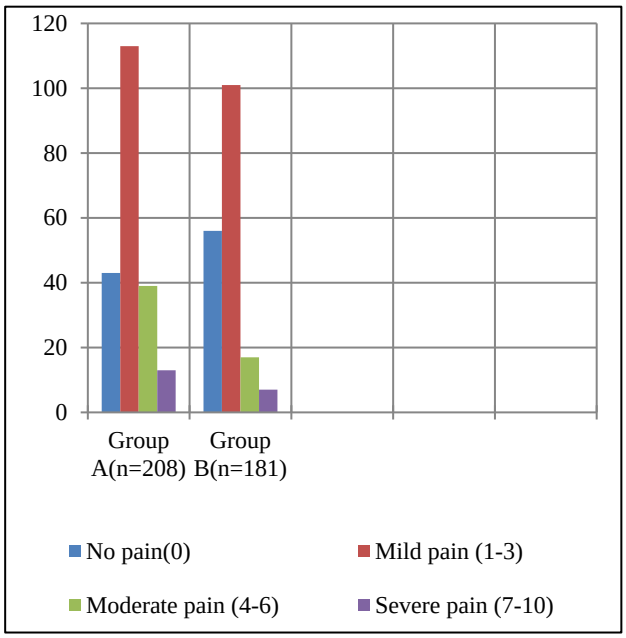

Figure 3: VAS score used to assess post-operative pain in both groups.

DISCUSSION

Inguinal hernia is the commonest of all of the hernias and operative repair is the only acceptable method of treatment for inguinal hernia. This is also considered to be a common operation and the operative procedure of choice for surgical trainees in teaching institutes.[8]

Most of these complications are of mild to moderate degree and can be treated by a conservative approach. Recent advances in different surgical techniques and equipment claim to have less complications but none are completely devoid of them.[2]

Penoscrotal hematoma is one of the most common complications usually arising due to inadequate hemostasis. It is usually managed by conservative approach in the form of rest and scrotal support. In doubtful cases, investigation like ultrasound can be done to confirm penoscrotal hematoma/swelling, but in cases of massive hematoma, clinical diagnosis is very obvious and does not necessarily require ultrasound and occasionally, such a massive hematoma can cause complications such as cosmetic disfigurement and may experience unsatisfactory sexual gratification.[1] Massive penoscrotal hematoma is quite common among the patients diagnosed with bleeding diseases like hemophilia where a small trauma can trigger the bleeding in scrotum.[9]

It must be noted that meticulous and complete control of bleeding is important during hernia repair to avoid such complications. We strongly recommend adequate control of bleeding before closure of the wound in any kind of surgical procedure. Different techniques have been employed in practice such as the hitch-stitch and drain technique to prevent bleeding and avoid significant postoperative hematoma. However, even simple techniques such as the use of diathermy and/or suture ligation of blood vessels along with meticulous surgical techniques may be helpful to avoid bleeding.[10] It has also been reported as a complication following certain urological procedures.[11,12]

The scrotal support is used to prevent the stretching of the spermatic cord and the structures associated with it such as vessels and testes providing antigravity support. The purpose of scrotal support is to provide antigravity effect and compress the layers of the scrotum which ultimately may reduce the risk of hematoma and edema of the scrotum.[4] Scrotal support is used quite frequently following inguinal hernia surgery but most surgeons often consider it a myth with no scientific evidence. Our study evaluates the use of scrotal support to evaluate any benefit from its routine use.

In Garg et al used sterilized face mask as scrotal support and compared it conventional coconut bandage in preventing edema and hematoma operated cases of complete inguinoscrotal hernia, hydrocele, varicocele and scrotal injury were included in study and concluded similar outcomes in both the groups.[5]

Raja et al used scrotal hitch and conventional scrotal support in the comparative groups and concluded no significant difference in scrotal edema between two groups.[13]

Limitations

A larger sample size would be needed to ensure the results are representative, without random assignment the study have confounding variables that affect the outcomes making it difficult to establish a clear cause-

and-effect relationship between scrotal support and post-operative outcomes. The follow-up period was short, and it did not capture long-term outcomes and complications.

CONCLUSION

Our study concludes that scrotal support has a positive role in preventing scrotal edema following inguinal hernia surgery.

Scrotal edema in most cases is preventable and depends from surgeon to surgeon and their methods of performing surgery.

Meticulous dissection and minimum tissue handling can reduce the chances of developing scrotal edema. Although findings in our study suggest that there is potential value of integrating scrotal support into the post-operative care protocol for inguino-scrotal hernia repair. Further research is required to verify these results and promote the implementation of scrotal support in clinical practice.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Shah DK, Sagar J. Massive penoscrotal haematoma following inguinal hernia repair: a case report. J Med Case Rep. 2008;2:1-3.
2. Kosternoy A, Bayumi EK. Effect of scrotal hitching in reducing scrotal edema after inguinoscrotal hernia repair. J Dental Med Sci. 2015;14(8):41-4.
3. Nafees A, Ghayasuddin M, Ali M, Jariullah I, Waseem R, Ekram A, et al. Role of Scrotal Support to Prevent Scrotal Edema After Inguinal Hernioplasty: Scrotal Support to Prevent Scrotal Edema. Pak J Health Sci. 2023;4(05):218-21.
4. Kumar V, Soni P, Chadha S, Malik B. Penoscrotal haematoma after cardiac catheterisation. BMJ Case Rep. 2017;2017:bcr-2016-218934.
5. Garg G, Goyal S. Face-Mask As Scrotal Support To Reduce Incidence Of Scrotal Oedema (Post Inguinoscrotal Surgery). IJMHS. 2013;3(6):291-3.
6. Ekeke ON, Nwauche CA. An uncommon cause of massive penoscrotal haematoma. Niger J Med. 2004;13(1):64-6.
7. Li J, Ji Z, Shao X. Prevention of seroma formation after laparoscopic inguinoscrotal indirect hernia repair by a new surgical technique: A preliminary report. Int J Abdominal Wall Hernia Surg. 2018;1(2):55-9.
8. Tamilselvan S, Rajachidambaram K, Manoj SK, Gowtham, Traditional Scrotal Support After Inguino Scrotal Hernia Repair- A Historical Ritual or A Scientific Myth? Global J Res Analysis. 2018;7(3):26-7.
9. Tanović H, Mesihović R, Muhović S. Randomized trial of TEP laparoscopic hernioplasty versus Bassni inguinal hernia repair. Medicinski Arhiv. 2005;59(4):214-6.
10. Joseph MG, O'Boyle PJ. The 'hitch-stitch' and drain technique for the prevention of inguinoscrotal haematoma following complicated inguinoscrotal surgery. J R Coll Surg Edinb. 1989;34(2):104-5.
11. Ceylan K, Yuksel Y, Hasan G, Alpaslan K. Inguinal approach in adult hydrocele surgery: preliminary randomized study. Adv Ther. 2006;23:159-62.
12. Johal NS, Nitkunan T, O'Malley K, Cuckow PM. The two-stage repair for severe primary hypospadias. Eur Urol. 2006;50(2):366-71.
13. Raja R, Sreeramulu PN, Vikranth SN, Srinivasan D. Scrotal hitch: a novel technique to reduce post-operative scrotal oedema in inguinal hernia surgeries: a pilot study. Int Surg J. 2020;7:1095-8.

Cite this article as: Khan A, Ali SA, Almas A. The use of scrotal support post inguino-scrotal hernia repair: a prospective observational study. Int Surg J 2024;11:1502-5.