

Scrotal hitch or scrotal support: method for edema prevention post inguinal hernioplasty

¹Dr. Aishani Sadre , ²Dr. Virat Patel, ³Dr. Varsha Pattanaik, ⁴Dr. Harish Mudashi, ⁵Dr. Atryee Sarkar

^{1,3}Assistant professor, ²Junior resident, ^{4,5}Senior resident
Department of general surgery
pravara rural medical college, Loni, India

Abstract- Postoperative scrotal edema, ecchymosis and scrotal hematoma are common complications after inguinal hernia surgery. Without proper hemostasis and proper postoperative scrotal compression, significant morbidity can occur. In this study we compare scrotal hitch and scrotal support as a method to provide hemostasis, minimize edema and hematoma.

INTRODUCTION

Compared to individuals who are younger, older patients are more likely to get inguinal hernia, which is a very frequent ailment. From 11 per 10000 persons in the 16–24 age group to 200 per 10000 people in the 75+ age group, the prevalence has increased [1]. One of the most popular elective surgical treatments for inguinal hernias is inguinal hernioplasty. The complications that could result from a repair are post operative pain, recurrence, hemorrhage, mesh infection, scrotal swelling, scrotal edema, and nerve injury [2]. Over 500000 inguinal hernia repairs are reportedly carried out each year[3]. A surge in the demand for more surgical procedures with lesser complications for inguinal hernias is also a result of the ageing population. According to reports, hernioplasty procedures enhance patients' quality of life[4-6]. The inguinal hernioplasty is a crucial treatment because, if left untreated, a hernia can lead to severe consequences that might be fatal, including, irreducible hernia, obstructed hernia, strangulated hernia leading to sepsis[7].Morbidity is brought on by the inguinal hernioplasty's complications, scrotal hematoma and scrotal edema [8].to avoid the said complications many new and old methods are employed. One of these methods for preventing scrotal edema is scrotal hitch. Simple sutures made of an absorbable suture material are used to connect the skin over the pubic symphysis to the bottom of the scrotum. The penis is shifted to one side, which does not inconvenience the patient when urinating. This lifts the scrotum, allowing for little collection of edema or superficialhematoma. In the current study, the effectiveness of a scrotal hitch and scrotal support in minimising postoperative scrotal edema in patients having inguinal hernia operations was studied

MATERIAL AND METHODS:

It was a comparative study, carried out in Pravara Rural Hospital during the period of 18 months. Adult male patients above 18 years of age with uncomplicated inguinal hernia, underwent surgery and had given informed consent form were included in the study. Seriously ill patients and patients not fit for surgeries, Hernia associated with hydrocele or preoperative scrotal edema, Obstructed hernia/ incisional hernia/recurrent hernia cases were excluded from the study.

Data collection:

After approval from Ethical committee and obtaining informed consent form from the patients, patients were randomly divided in two group. Group A – Patients evaluated with scrotal hitch and group B – Patients evaluated with scrotal support. Demographic data was collected and patients were evaluated with Chief Complaints, Clinical Examination Findings, General examination, Local examination, Lab investigations, Ultrasound examination. Patient were operated for inguinal hernia. Patients were followed up postoperatively on day 1, day 4, day 7 and evaluated clinically and ultrasonographically for development of scrotal edema and findings were recorded.

Statistical analysis:

IBM SPSS Ver. 26 was used for statistical analysis. Microsoft Excel book 2019 was used to prepare tables and graphs. Variables were expressed in terms of mean±S.D, Percentage (%).

RESULTS:

Post inguinal hernia surgery patients have been evaluated for postoperative scrotal oedema on 1,4,7th day clinically and radiologically (ultrasonography). Results are analyzed and tabulated accordingly. In the present study the mean age of the scrotal hitch group, 49.57±8.2 years whereas the mean age of scrotal support is 46.87±8.15 years. Out of all scrotal hitch patients 3 patients (4.6%) encountered with stitch failure. Infection at stitch site observed in 3 patients (4.6%) which subsequently led to stitch failure. Pain and discomfort observed in 5 patients (8.06%) with scrotal hitch.

Table 1: Age distribution

	Scrotal Hitch	Support
Presented as mean and standard deviation	49.57±8.2	46.87±8.15

Age distribution	N=62 (%)	N=68 (%)
18-40	13 (20.96%)	18 (26.47%)
40-50	24 (38.70%)	31 (45.58%)
50-60	25 (40.32%)	19 (27.94%)

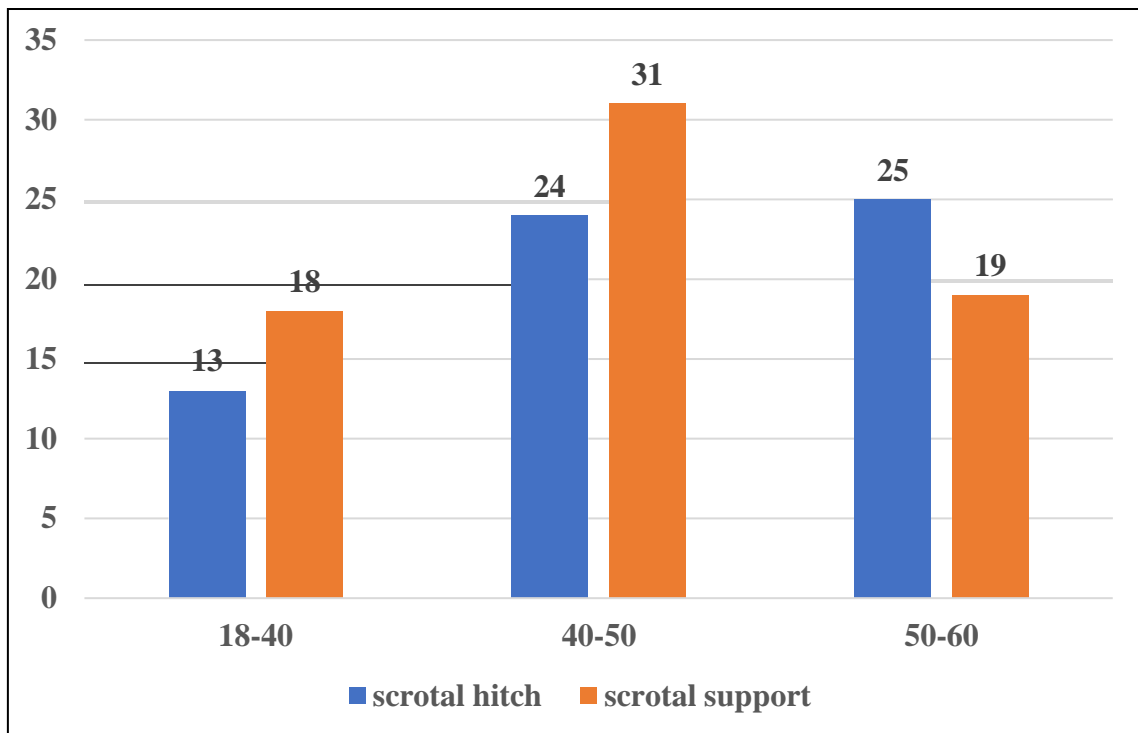


Fig 1: Bar diagram showing the age frequency distribution in the two groups of scrotal hitch and scrotalsupport

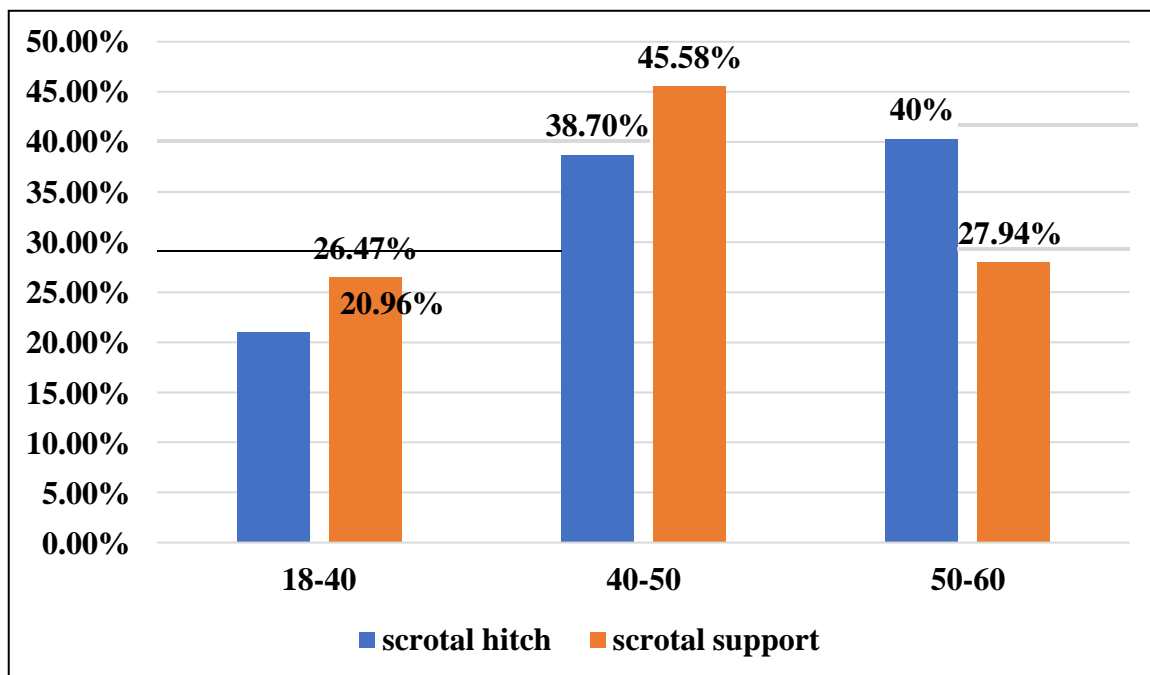


Fig 2: bar diagram shows the age % age distribution

Table 2: Position of hernia & Type of hernia

Position of inguinal hernia	Scrotal hitch (n=62)	Scrotal support (n=68)
Right sided	33 (53.22%)	40 (58.82%)
Left sided	29 (46.77%)	28 (41.17%)
Type of Hernia		
Indirect inguinal hernia	28 (45.16%)	33 (48.52%)
Direct inguinal hernia	34 (54.83%)	35 (51.47%)

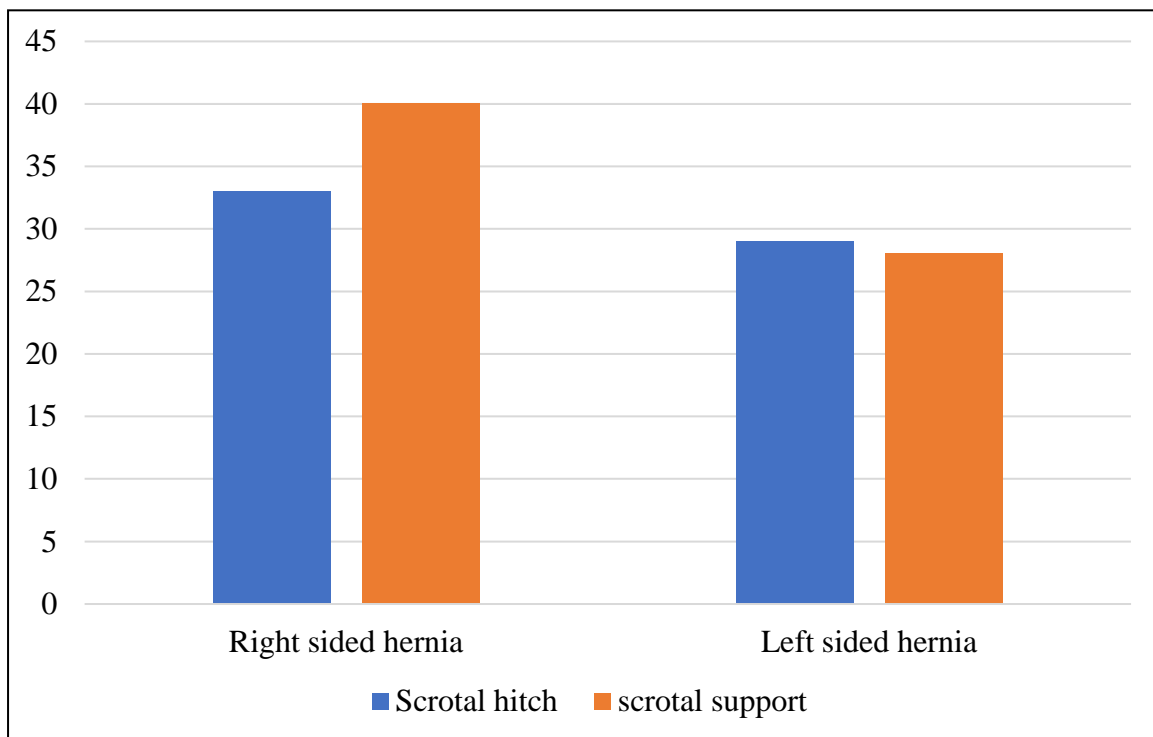
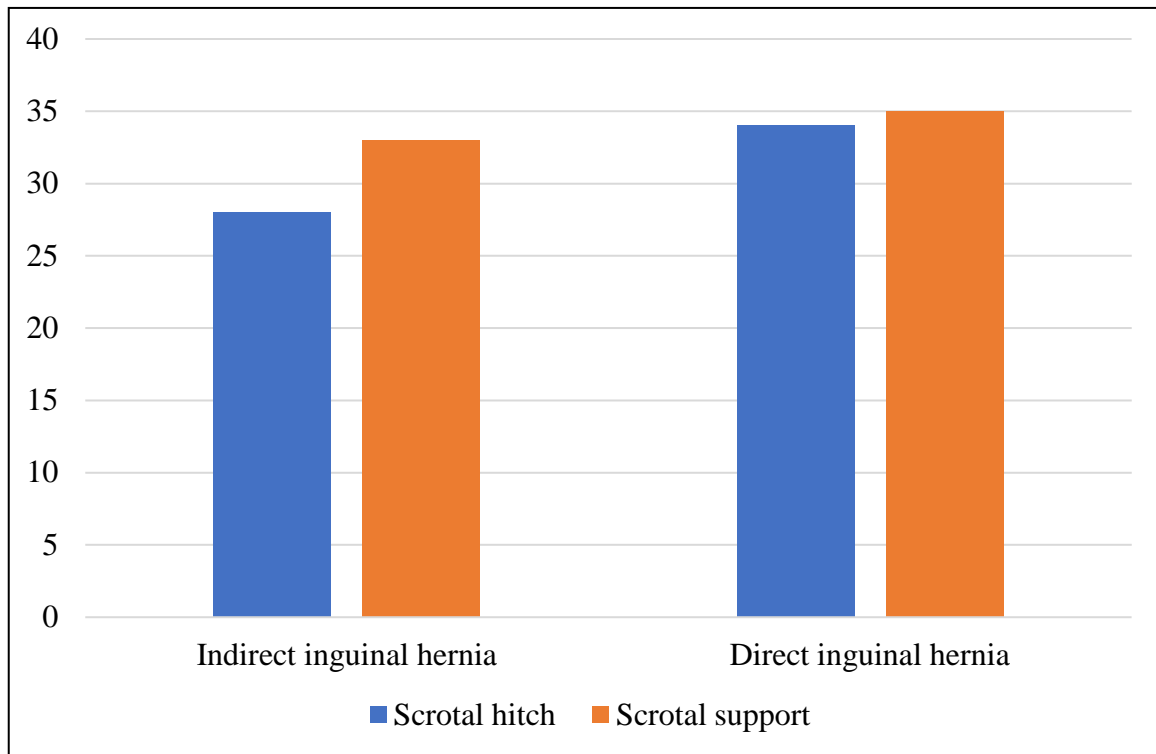


Fig 3: Position of hernia



Graph 04 : Type of Hernia

Table 3: Post operative clinical presentation

Clinical presentation	Group A (n=62)	Group B (n=68)
Hematoma	3 (4.8%)	3 (4.4%)
Inguinal pain	4 (6.5%)	8 (11.76%)
Surgical site infection	1 (1.6%)	3 (4.4%)

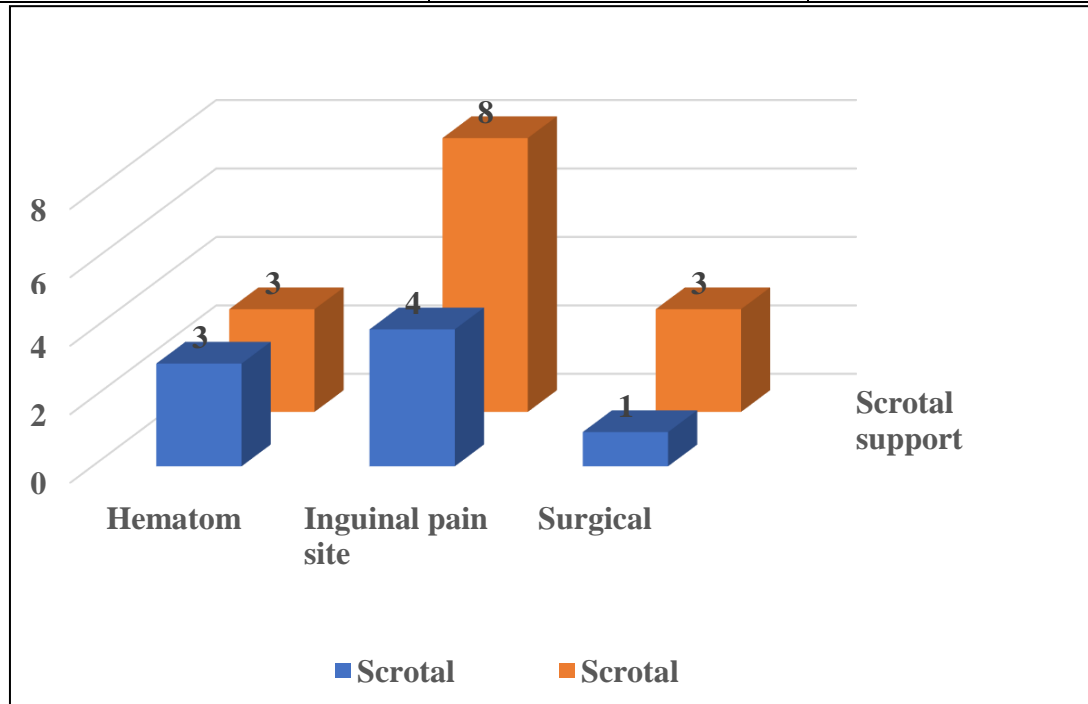
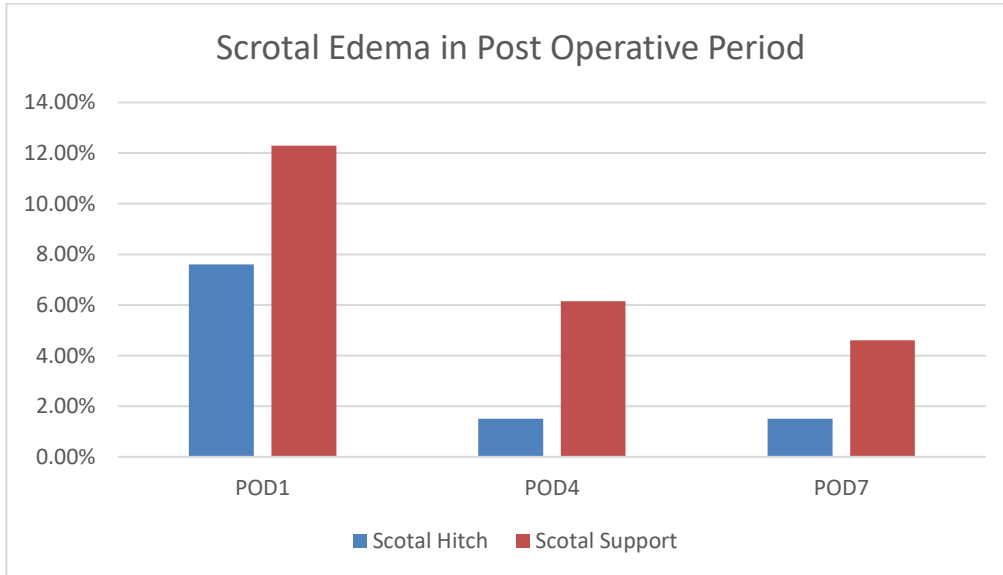


Fig 5 : Post operative Clinical presentation

Table 4: Table 05: post operative scrotal edema related pain (Visual analogue score)

(Presented as median)	Group A	Group B
At 6 hours	4	9
At 24 hours	2	5
At 48 hours	1	3
At 72 hours	1	2

	Scrotal Edema Patients treated with Scrotal Hitch	Scrotal Edema Patients treated with Scrotal Support
Day 1	5 (7.6%)	8 (12.30%)
Day 4	1 (1.5%)	4 (6.15%)
Day 7	1 (1.5%)	3 (4.61%)



Discussion:

With 130 patients in the research population, two procedures were used in the current study. We divided the patients into two groups and used the scrotal hitch on 62 of them, with three stitch failures. 68 patients had scrotal support evaluations. According to the study, the majority of patients in both groups were in their fourth decade of life, with a slightly higher number in their fifth decade. While the mean age of patients who underwent scrotal support was 46.878.15 years, the mean age of the patients who underwent scrotal hitch was 49.578.2 years. Similarly in a study by Raja R et al., [9] patients in the scrotal hitch group had a mean age of 45.6321.745, whereas those in the scrotal support group had a mean age of 41.4324.579. There is no statistically significant difference between the scrotal hitch and scrotal support with respect to age. According to a different study by Alexander Kosternoy et al. [10]. The study also took body mass index into account as another component. Which still constitutes a limitation of the current investigation. 53% of the patients had an inguinal hernia on the right side. Direct inguinal hernias were the most common form of hernia in the research sample (54%) while indirect hernias were considerably less common. Raja R et al's

research revealed that right indirect inguinal hernias were the most frequent hernia positions. [9] Additionally, most of the patients in the research had their hernias repaired with hernioplasty. Our study's post-operative period pain score was calculated using a visual analogue scale. Out of a total of 62 patients, 7 patients (10.76%) in the scrotal hitch group experienced scrotal edema, while 15 patients (23.06%) in the scrotal support group had scrotal edema. The Raja R et al study found slightly different results, with 20% of patients in the scrotal support group having scrotal edema compared to 6.7% in the scrotal hitch group. Which supports the idea that scrotal edema is more likely to occur in the scrotal support group than in the scrotal hitch group. This could be because in the scrotal support group, there is movement in the scrotal position, which causes patients' edema to increase, whereas in the procedure where the scrotum is hitched close to the skin, the scrotum is restricted in movement and leads to reduced movement-related injury and reduced edema. [9] Visual analogue scores were generated in the study at 6, 24, 48, and 72 hours to evaluate the patients' post-operative pain. In the study, the scrotal hitch group's median score was 4 at 6 hours, 2 at 24 hours, and 1 each at 48 and 72 hours, whereas the scrotal support group's median pain score was 9 at 6 hours, 5 at 24 hours, and 3 and 2 at 48 and 72 hours, respectively. Additionally, the pain score in the group with scrotal hitch has significantly improved. [9] The median VAS score at 6 hours, 24 hours, 48 hours, and 72 hours in the study conducted by Raja R et al. was 3, 2, 1, and 1, respectively. The median VAS score for group B was 4 at 6 hours, 4 at 24 hours, 2 at 48 hours, and 2 at 72 hours. From 6 hours to 72 hours, there was a significant difference in the median pain score or visual analogue score between the two groups. In comparison to group B, group A experienced less pain. [9] With only three occurrences of hematoma, four episodes of inguinal discomfort, and one patient with surgical site infection, the scrotal hitch group experienced considerably less postoperative problems. In contrast, 8 (11.76%) of the maximum number of patients in the scrotal support group experienced inguinal pain, followed by 3 instances of each surgical site infection and hematoma. In their study, Raja R et al. discovered that the scrotal hitch group experienced less difficulties than the scrotal support group. [9] In order to avoid hematoma and scrotal edema, many methods other than the scrotal hitch have been proposed, such as scrotal support. However, because these methods do not result in scrotal elevation and are difficult to use, they have largely lost their effectiveness because they do not apply constant pressure to the scrotum. The scrotal hitch technique raises the scrotum from the bottom, which helps to prevent edema fluid or hematoma fluid from building up in the scrotum while also minimising patient discomfort. As can be seen from the current study, the scrotal hitch group has a lower pain score than the scrotal support group, indicating that this treatment is acceptable and causes less discomfort for the patients. Additionally, because the operation moves the penis to one side, this approach does not interfere with the patient's ability to urinate, which can further improve the quality of care given to the patient. The same scrotal hitch approach was applied in scrotal procedures as well, with positive results, as is briefly explained. James H. Gryphon and John R. Canning studied 46 patients who underwent various procedures such as unilateral hydrocelectomy, bilateral hydrocelectomy, unilateral orchiectomy, bilateral subcapsular orchiectomy, spermatocelectomy, lipoma of the cord excision, and removal of a foreign body. They used the scrotal hitch technique for hemostasis and edema prevention in scrotal surgery. [11] In both scrotal surgery and the avoidance of postoperative hemorrhage and edema, Joseph E. Oesterling employed the same scrotal hitch technique. There were no episodes of postoperative hemorrhage, infection, or oedema among the 64 patients who underwent bilateral orchiectomy, unilateral orchiectomy, hydrocelectomy, spermatocelectomy, or epididymectomy.

CONCLUSION

Using Scrotal hitch in patients leads to lesser complications than the patients using scrotal support, including hematoma, surgical site infection, and inguinal discomfort. In comparison to other groups, patients with scrotal hitch exhibit less discomfort. Scrotal hitch, when used correctly, prevents scrotal edema better than scrotal support in terms of surgical results, complications, and Post-op pain level. Inguinal hernia surgery patients are the only ones included in the current study. It needs to be put through more studies to see if it works for all scrotal procedures.

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