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Stoppa's Repair for Bilateral Inguinal Hernia: A Comprehensive Retrospective Study

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ABSTRACT
A hernia is defined as protrusion of whole or a part of a viscus through the wall that contains it. Inguinal hernia repair is one of the most commonly performed general surgical procedures all across the world. Stoppa's Repair is a tension free hernia repair that involves wrapping prosthetic mesh around the lower part of parietal peritoneum and placing it at a pre-peritoneal space. Retrospective study conducted at Ballari Medical College and Research Centre between April 2023 to September 2024. This study included 30 patients diagnosed with bilateral inguinal hernia and managed by Stoppa's procedure. This procedure covers myopectoneal orifice of fruchaud and it is tensionless in its true sense. It has inherent advantages of wider operative field, decreased operative time and minimal post-operative complications and recurrence. Stoppa's procedure is near to ideal Hernioplasty. It enables giant prosthetic reinforcement of visceral sac. This study compels the shift from traditional methods of hernia repair to Stoppa's procedure.

INTRODUCTION

A hernia is defined as abnormal protrusion of whole or a part of a viscus through the wall that contains it. Inguinal hernia repair is one of the most commonly performed general surgical procedures all across the world. Incidence of inguinal hernia is clearly higher in males (25%) than females (2%)[1,2]. Inguinal hernias contribute 75% of all the hernias, 2/3rd. of which are indirect and 1/3rd are direct. The Stoppa's Repair first described in 1975 by Rene Stoppa, also known as giant prosthetic reinforcement of the visceral sac (GPRVS). Stoppa's Repair is a tension free hernia repair that involves wrapping prosthetic mesh around the lower part of parietal peritoneum and placing it at a pre-peritoneal space[3-5]. It is particularly useful for repair of bilateral inguinal hernia, recurrent inguinal hernias, Sliding hernias, femoral hernias, large Inguino -scrotal hernias and some strangulated hernias. This new technique is theoretically closer to ideal hernia repair and based on the concept of providing a strong, mobile and physiologically dynamic posterior inguinal wall. The technique is simple, easy to learn and does not require complicated dissection or suturing.

MATERIALS AND METHODS

Retrospective study conducted at Ballari Medical College and Research Centre between April 2023 to September 2024. This study included 30 patients diagnosed with bilateral inguinal hernia and managed by Stoppa's procedure. The purpose of this study is to establish the influence of this new technique on early outcomes of bilateral inguinal hernia repair. The operative time, type of anaesthesia, postoperative morbidity and days of hospital stay were analysed.

Inclusion Criteria: Presence of bilateral inguinal hernia which were managed by Stoppa's mesh hernioplasty.

Operative Steps:

- All the patients underwent a pre-operative, clinical laboratical evaluation followed by pre-anesthesia clearance (PAC).
- All patients underwent per-urethral catheterisation on operating table, appropriate anaesthesia (General/Spinal/Epidural) was given.
- Patient was given supine with head low position. Prophylactic intravenous antibiotics (Ceftriaxone 1 gram stat) were administered in all patients at the time of induction.
- For all patients, a pfannesteil incision was used as a standard, followed by vertical separation of both recti to enter the preperitoneal space.
- Rectus muscles are retracted laterally from the midline and pre-peritoneal space is entered.

Fig. 1: Pfannesteil Incision

- Blunt dissection of the pre peritoneal space was performed.
- This pre-peritoneal space is dissected inferiorly up to space of Retzius and infero-laterally advanced behind the iliopubic ramus in the space of bogros and laterally up to anterior superior iliac spine[5].
- At this point all other potential hernia sites viz. Inguinal, obturator and femoral hernia are examined.
- Vas deferens, testicular and gonadal vessels are separated out laterally from the visceral sac.
- Direct hernias were identified and reduced.
- Indirect sacs were divided, the proximal peritoneum was sutured.
- Two prolene mesh of 15 by 15cm2 were placed in the preperitoneal space due to non-availability of 30cm by30cm.
- Fixation of the mesh was done by suturing mesh to pubic tubercle on both sides.

Fig. 2: Mesh Being Fixed to Pubic Tubercle

Fig. 3: Mesh is Spread Out in Pre Peritoneal Space

Fig. 4: Anterior Rectus Closure

Fig. 5: Skin Closure

RESULTS AND DISCUSSIONS

All 30 cases of bilateral hernia repaired by stoppa's procedure were male. The mean age of patient was 55.5 years, range of 36-75.

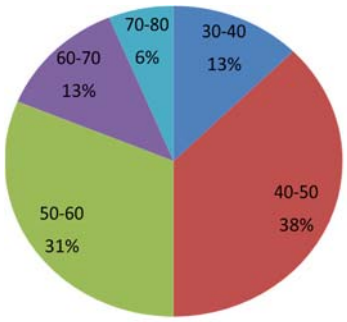

Fig. 6: Age Distribution

Table 1: Types of Groin Hernias in 30 Cases

Right	Left	Total cases
Direct	Direct	11
Direct	Indirect	2
Indirect	Direct	8
Indirect	Indirect	6
Recurrent	Direct	1
Direct	Recurrent	1
Pantaloon	Indirect	1

Table 2: Anaesthesia

Type of anesthesia	Number
Spinal	8
Epidural	19
General	3

Operative Time: All cases were operated by pfannesteil incision. The mean operative time was 125 minutes, range of 90-160 minutes.

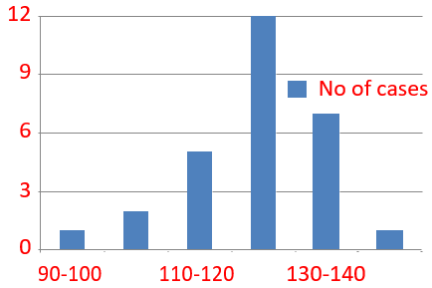

Fig 7: Operative Time

Hospital Stay:

- All cases, dressing was changed on post-operative day 3.
- 18 cases were discharged on same day and followed up in OPD.
- Average post op hospital stay is 3.3 days, range of 3-7 days.

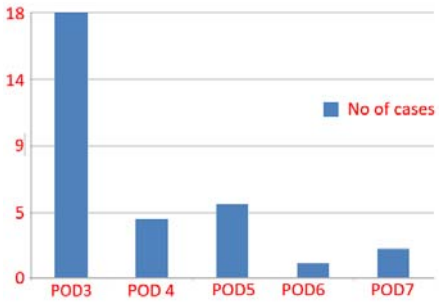

Fig. 8: Post Op Hospital Stay

Fig. 9: Immediate Post Op

Fig. 10: Post Day 3

Fig. 11: Post Op Day 10

Fig. 12: 3 Months Follow Up Scar

Post-Operative Pain:

Pain Scale Distribution:

Among 19 patients operated by epidural anaesthesia, post operatively cathter was left insitu in 16 patients for pain management and removed on day 2. Overall, 20 patients had no to minimal post-op pain after post op day 2., 9 patients had lower abdominal pain relieved after bowel movement on day 3. On post-op day 4, one patient had significant clinical pain due to SSI.

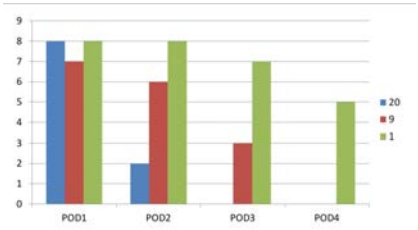

Fig. 13: Pain Scale Distribution

Table 3: Post-Operative Morbidity

Early complications	No of cases	Percentage
Fever	3	10%
Seroma	1	3.3%
Hematoma	0	0%
Scrotal Swelling	2	6.6%
Urinary Retention After Cathter Removal	2	6.6%
SSI	2	6.6%

In 21 cases, per urethral catheter was removed on post op day 1 for early ambulation and on post op day 2 in 6 cases and day 3 in 3 cases. Among them 2 cases required recatheterisation due to acute retention of urine and were discharged with catheter in-situ. One patient developed surgical site infection on post op day 4, managed conservatively and discharged on day 7. Among 18 patients discharged on day 3, one developed surgical site infection requiring re-admission and managed by suture removal to express out purulent discharge and secondary suturing was done. However infection was limited to subcutaneous plane in both cases of SSI.

Discharge Follow Up: All patients were discharged with oral antibiotics, followed up in OPD and suture removal done on POD 10. The Mean duration of return to routine daily activities is 2 days and sedentary work is 5 days.

Late Post Op Complications: Since it is a retrospective study, 18 cases were found to be operated before 6 months at study point of time.

Table 4: Complications

Complications	No of cases	Percentage
Inguinodynia	2	11%
Mesh infection	0	0%
Mesh migration	0	0%
Recurrence	0	0%

- Better exposure of myopectineal orifice.
- Tensionless repair in its true sense.
- Reduces the risk of nerve injury, neuralgia, orchitis, testicular atrophy and chronic pain as observed in the pain scale distribution.
- Cosmetically better scar.
- Lesser Operative time period.
- Gets ambulatory sooner and return to the routine activities.
- Can be done when there is no experience in laparoscopic approach or when patients have general anaesthetic or laparoscopic contraindication.
- Short learning curve.

CONCLUSION

- Stoppas procedure is near to ideal Hernioplasty. It enables giant prosthetic reinforcement of visceral sac. This study compels the shift from traditional methods of hernia repair to Stoppas procedure.
- However more number of Randomized control trials and multicenter trials need to be undertaken to study the pros and cons of this procedure in future.

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