



PROSPECTIVE STUDY OF STOPPA'S PROCEDURE / GIANT PROSTHETIC REINFORCEMENT OF VISCERAL SAC (GPRVS) IN MANAGEMENT OF BILATERAL INGUINAL HERNIA.

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ABSTRACT

Background: Inguinal hernia repairs are one among the most common surgeries performed by General Surgeons. . Prevalence of hernias in general population is about 5%. Bilateral hernias occur in 6-8% of groin hernias. It is estimated that 20 million hernioplasties are performed worldwide each year. Stoppa's procedure, also known as GPRVS uses large prosthetic mesh which is placed in the preperitoneal plane covering Myopectineal orifice bilaterally. Stoppa's repair is useful in cases of bilateral hernias, recurrent and unilateral hernias where risk of recurrence is more. The purpose of present study is to evaluate and analyze the efficacy of Stoppa's procedure / GPRVS in cases of bilateral inguinal hernias.

Methods: This is a prospective study conducted on about 60 patients presenting with primary bilateral inguinal hernias who underwent Stoppa's procedure during November 2014 – May 2016 at Victoria Hospital and Bowring & Lady Curzon Hospital attached to BMCRI. This study includes only primary bilateral inguinal hernias. Demographic data such as age, gender, occupation, smoking, symptoms as well as comorbid conditions such as chronic obstructive pulmonary disease, prostatism, and recurrence were collected. Duration of surgery was also noted. Complications such as seroma, hematoma, ishchaemic orchitis, and wound infection were recorded. Duration of hospital stay was recorded. Chronic groin pain and recurrences in each group were also recorded.

KEYWORDS : Occupational Stress, IT Professionals, Siruseri IT Park

MATERIALS AND METHODS

This is prospective study was undertaken during November 2014 – May 2016 in patients admitted in Victoria hospital and Bowring & Lady Curzon Hospital attached to Bangalore medical college and research institute for treatment of inguinal hernias on elective basis. During this period 60 cases of inguinal hernias were studied as per the proforma and included in the study based on the following criteria-Primary bilateral inguinal hernia.

Following patients were not included in study - Obstructed inguinal hernias, strangulated inguinal hernias, recurrent hernias

All the cases were evaluated by documenting history, physical examination and investigations. During history taking particular importance was given to the age, sex, occupation and other contributory factors like chronic cough, COPD, BPH, Chronic constipation, strenuous exercise etc. During physical examination - location, type of hernia, tone of abdominal muscles were given importance. Patient is examined for BPH and any other abdominal mass.

All patients were given single dose pre operative antibiotics.

The repair was done as described by Stoppa's through single sub umbilical midline incision. Mesh is placed in preperitoneal plane. Drain is placed in most of the cases, removed after 72 hrs. Patient was allowed ambulation on first post-operative day.

Following parameters were assessed during study:

1. Intra- operative complications Hemorrhage , Peritoneal tear, Bladder injury
2. Duration of surgery
3. Post operative complications –Hematoma, Pain, Ambulation, Seroma ,Wound infection,Mesh infection, Parasthesia, Chronic groin pain, Recurrence
4. Duration of hospital stay

Patients were advised to attend OPD for follow up after discharge and complications if any are noted. Patients were seen at regular 3 monthly intervals during first one year and then as on demand if problem arises.

OBSERVATIONS AND RESULTS

Total 60 patients were studied and results were as follows:-
Age at presentation

Age group	No. of patients	Percentage
31 - 40	3	5
41 - 50	11	18.33
51 - 60	22	36.67
61 - 70	17	28.33
71 - 80	6	10
81 - 90	1	1.67

Age of patients varied from 38 to 82years. Maximum incidence was found in age group of 51–60 yrs. Older age group is associated with poor abdominal tone, BPH, and COPD are associated with increased risk of direct hernias.

SEX INCIDENCE:

ALL patients in the study were MALE patients.

MODE OF PRESENTATION:

Swelling	41	68.33 %
Swelling with pain	19	31.67 %

All the patients had groin swelling at presentation. 31.67%of patients had associate dragging type of pain in the groin. Presentation with pain is more commonly associated with indirect hernias relative.

LOCATION OF HERNIAS :

	Direct hernia	Indirect hernia	Total
Bilateral hernias	20	14	34
Right	13	8	21
Left	8	13	21
Total	41	35	76

All cases were Bilateral hernias. 41 cases were direct hernias and 35 indirect hernias There were 5 cases of pantaloons hernia either on right or left side.

OCCUPATION :

OCCUPATION	NO. OF PATIENTS	PERCENTAGE
HEAVY WORKER	39	65
LIGHT WORKER	21	35

65 % of hernias were associated with heavy work – agricultural workers, coolies etc involving lifting of heavy weights.

RISK FACTORS ASSOCIATED WITH HERNIA:

Risk factors	No . patients	Percentage
Strenuous work	39	56.6
Smoking	37	61.67
Obesity	9	15

Poor abdominal tone	15	25
COPD	16	26.6
Recurrent	0	-
BPH	18	30

In present study 61.67% of patients were smokers. All patients were operated on spinal anaesthesia. Total 60 cases were operated.

Smokers	37	61.67%
Non smokers	23	38.33%

TIME TAKEN FOR PROCEDURE:

The time taken for procedure varies from 30 to 75 minutes. Mean time of surgery is 42 minutes.

Time in minutes	No of patients	Percentage
30-40	18	30
41-50	20	33.33
51-60	14	23.33
61-70	6	10
71-80	2	3.33

There was no major intra operative complications.

Intraoperative Complications	Number of patients	Percentage %
Hemorrhage	0	0
Peritoneal tear	4	6.67
Bladder injury	0	0
Conversion to other technique	0	0

POST OPERATIVE COURSE AND COMPLICATIONS :

Postoperative complications	No. of patients	Percentage
Seroma	2	3.33
Superficial infection	2	3.33
Mesh infection	0	0
Scrotal edema	0	0
Ischemic orchitis	0	0
Testicular atrophy	0	0
Parasthesia	0	0
Urinary retention	4	6.6
Phlebitis	0	0
Cardio pulmonary	0	0
Recurrence	0	0

Duration of post operative stay varies from 3 to 10 days. With mean stay of 6.3 days.

DISCUSSION

The results and observations were discussed and compared with those of available literature.

AGE AND SEX AT PRESENTATION:

Inguinal hernia has maximum incidence in between 30 – 60 yrs. Studies done by Rosa Fernandez, Mathonnet M and Henmat Maghsoudi showed that mean age of presentation was 52.7 , 60 , and 60 years respectively. In our study mean age of presentation was 58.8 years which is comparable to other studies.

In our study all the patients studied were males. Studies done by Rosa Fernandez, Mathinnet M and Henmat Maghsoudi had 96%, 97% and 100 % men in their study. Lower rate in females is due to low incidence of female hernias especially direct hernias and low awareness among females.

MODE OF PRESENTATIONS AND TYPE OF HERNIA:

All patients presented with groin swelling. In our study 68.33 % presented with swelling alone and 31.67 % presented with pain and swelling.

Studies done by Rosa Fernandez, Mathinnet M and Henmat Maghsoudi on Stoppa's repair had bilateral and recurrent hernias in the study. Direct hernias are more common in more than 40 yrs of age.

OCCUPATION: 65 % of the patients were heavy workers and heavy work predisposes to the raised intra abdominal pressure and pre disposes to direct hernias.

RISK FACTORS FOR HERNIA DEVELOPEMENT:

Most of patients had risk factors for development of hernia most common being smoking 61.67%, Obesity– 9%, COPD - 26.6% and BPH– 18% .

OPERATING TIME :

Operating time is time gap between incision and last skin suture. This is comparable to other studies. Operating time is much shorter than laparoscopic repair and bilateral Lichtenstein repair done bilaterally.

INTRAOPERATIVE COURSE :

No major complications were found in present study except for 4 peritoneal tears which was closed with vicryl 2-0 primarily. No cases of major bleeding or bladder injury occurred. No conversion to other methods of repair was done.

Mean Operating time Minutes	Rosa Fernandez,	Mathon net M	Henmat Maghsoudi	Stoppa	Present study
	61 - 66	45	51	65	49

Postoperative complications Percentage	PRES ENT	Rosa	Henm at	Mathonn et	Stoppa
Mortality	0	0	0	0.2	0.9
Haematoma	0	8.5	0	2	3.2
Seroma	3.33	1.4	1.2	0	0
Superficial infection	3.33	0	0	1.6	2.1
Mesh infection	0	0	0	0	0
Scrotal edema	0	0	0	0	0
Ischemic orchitis	0	0	0	0	0
Testicular atrophy	0	0	0	0	0
Chronic groin pain	0	0.9	0	0	0
Parasthesia	0	0	0	0	0
Urinary retention/ infection	6.6	0.45	0	1.5	0.25
Phlebitis	0	0	0	0.2	0.25
Cardio pulmonary	0	0.4	0.4	2.8	1.75
Intestinal complications	0	0.9	0.9	0.1	0
Recurrence	0	1.7	0.85	1.6	1.4

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Post operative complications of present study are comparable to other studies and two surgical infections reported managed with regular dressing. No cases of mesh infections were reported. There were two cases of seroma in our study which occurs because of collection of tissue fluid in the dead space of hernia sac, which resolved with needle aspiration without delaying recovery or discharge. There were no cases of scrotal oedema or ischaemic orchitis or chronic groin pain reported.

Recurrences were not noted in present study. Recurrences reported in previous studies were occurred early in first year were due to mesh of lesser size, displacement of mesh or wrong technique

POST OPERATIVE STAY :

STUDY	POST OPERATIVE STAY - DAYS
Present study	3.5

Roza	5.1
Henmat	2.2
Mathonnet	6.1
Stoppa	10.3

Post-operative stay was comparable to other studies. Longer duration is seen in cases of old age where associated comorbidities are major concern and also presence of drain. Drain was placed on an average for 2-3 days duration.

SUMMARY

Present study was done in Victoria hospital and Bowring & Lady Curzon hospital attached to Bangalore medical college and research Institute, Bengaluru during November 2014 – May 2016, to study the role of Stoppa's repair / GPRVS in management of primary bilateral inguinal hernias. Total 60 cases were studied in duration of approximately three years.

Out of 60 patients all the patients were males with age group between 38 to 72 years. All the patients had bilateral groin swelling. 31.67% of patients had associated pain.

Direct hernia was common variety in this study.

Most of the patients had one or the other risk factor for recurrence smoking was most common - 61.67%. Other risk factors were COPD, BPH, Poor abdominal tone and strenuous work.

All the patients were subjected to GPRVS under spinal anaesthesia with proper size of mesh and duration of surgery was 48.8 min minutes. Intra operative course was uneventful without any major complications. Patients were encouraged for early ambulation. Post-operative course was uneventful without major complications. Recurrences were not seen with a follow up period of 6 months post-operatively. Minor complications like superficial wound infection and seroma were managed conservatively with no sequelae. These results were comparable to other studies.

CONCLUSIONS

Stoppa's pre-peritoneal repair for bilateral inguinal hernias is an anatomic, sutureless, and tension free procedure that completely eliminates all types of groin hernias. In this technique the endoabdominal fascia/ transversalis fascia, the weakness of which is the main cause for occurrence is reinforced using a giant prosthetic mesh. Stoppa's repair / GPRVS allows bilateral approach via single incision covering all the hernia orifices including inguinal, femoral and obturator hernias. Complications like testicular atrophy, chronic groin pain and hemorrhage are less common as plane of dissection does not involve major vascular structures, nerves, with minimal cord handling. In theory, recurrences after GPRVS are inconceivable. Nevertheless, they occur. Most recurrences can be attributable to technical errors, small size or improper placement of mesh Stoppa's repair provides safe and definitive cure for complex and recurrent groin hernias because of its simplicity, ease of procedure, excellent results and low complication rate. Unlike laparoscopic hernia repair, exceptional skill and extensive experience do not appear necessary for good results. Also, it can help novice surgeons in their beginning days of laparoscopic repair to familiarize with the posterior inguinal anatomy.

In conclusion, this procedure is highly effective in achieving low recurrence rates. It is easier to learn and safer than laparoscopic repair and should be the procedure of choice in all bilateral inguinal hernia.

REFERENCES

- 1) Stoppa R, Warlaumont CR, Verhaeghe PJ (1983) Preperitoneal placement of Dacron mesh in the repair of groin hernia. *Surg Rounds* 6: 38-51
- 2) Stoppa R, Rives JL, Warlaumont CR, Palot IP, Verhaeghe PJ, Delattre JF (1984) The use of dacron in repair of hernias of the groin. *Surg Clin North Am* 64:269-285
- 3) Stoppa's procedure: Place in present era IOSR-JDMS, e-ISSN:2279-0853, p- ISSN: 2279-0861. Vol-13, issue 5 ver.1 (May 2014) PP 75-76 [www.iosjournals.org]
- 4) Editorial Jurnalul de Chirurgie, Iași, 2011, Vol. 7, Nr. 3 [ISSN 1584 – 9341]
- 5) R.Van Hee, History of inguinal hernia Jurnalul de Chirurgie, Iasi, Vol 7, NR.3 [ISSN 1584-9341]

- 6) Lyons AS, Petrucelli RJ II. *Medicine: an Illustrated History*. New York, Harry N. Abrams, 1987.
- 7) Premuda L. The history of inguinal herniorrhaphy. *Int. Surg.* 1986; 71;138–140
- 8) Skandalakis John et al.: *Embryologic and anatomic basis of Inguinal Herniorrhaphy*” in *Surgical clinics of North America*, Philadelphia: W.B. Saunders Co., 1993; 73: 799-834.
- 9) kandalakis John et al.: *Embryologic and anatomic basis of Inguinal Herniorrhaphy*” in *Surgical clinics of North America*, Philadelphia: W.B. Saunders Co., 1993; 73: 799-834.
- 10) Standing S, Ellis H, Healy JC, Johnson D, Williams A. Inguinal canal. In: Standing S, ed. *Gray's anatomy: the anatomical basis of clinical practice*. 39th ed. Edinburgh, Scotland: Elsevier Churchill Livingstone, 2005; 1109–1111.
- 11) Townsend, Beauchamp, Evers, Mattox et al; *Sabiston textbook of surgery 19th edition*. (Pg 11123)
- 12) F.Charles Brunicaudi, Dana K, Anderson, Timothy et al; *Schwartz' principles of surgery 10th edition*. (Pg 1509)
- 13) Abrahamson J: Factors and mechanisms leading to recurrence. In Bendavid R (ed): *Prostheses and Abdominal Wall Hernias*. Austen, Landes, 1994, pp 138-170
- 14) Abrahamson J: Factors and mechanisms leading to recurrence. *Prob Gen Surg* 12:59-67, 1995
- 15) Hitendu H Dave. Recurrent inguinal hernias. A Comprehensive study. *Indian Journal of Surgery*, 1996 January-February; 21-26
- 16) Robert M. Zollinger Jr. Classification systems of groin hernias. *Rutkow IM, Hernia repair*, Philadelphia, W.B. Saunders Co. 2003; 83 (5): 1053-1065.
- 17) Somen Das. Examination of a case of hernia. *A Manual On Clinical Surgery*. Chapter 38. 5th edition. Calcutta: S D Publisher. 2000; 434-450.
- 18) Somen Das. Operations For hernia. *A Practical Guide to Operative Surgery*. Chapter 32. 3rd edition. Calcutta: S D Publisher 1988; 315-325.

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