TISSUE REPAIR FOR INGUINAL HERNIA: SHOULD THEY BE DELETED FROM LITERATURE?

Irfan Ali Sheikh, Muhammad Shoaib Hanif, Muhammad Qasim Butt, Shahzad Saleem Shah

AK Combined Military Hospital, Muzaffarabad

ABSTRACT

Aim: This is a pilot study to evaluate the status of herniorrhaphy procedures in the modern day surgery.

Duration: Mar 1995 to Mar 2005

Settings: Military hospitals

Type of Study: Descriptive and Analytical

Patients and Methods: All entitled patients were included in this study and only those non-entitled patients were included who came for regular follow up. All the patients were booked at first admission and their record was maintained. They were subjected to herniorrhaphy by a modified Bassini's procedure. They were called for follow up at 3 months, 6 months then annually for 2 years.

Results: A total of 210 patients were operated for inguinal hernia by tissue repair over the period of study. Out of these 164 patients were operated by pure tissue repair, of which 148 were followed up completely and were included in the study. The average age was 50.16 $\pm$ 19.12 years. The mean operation time was 20 $\pm$ 5.84 minutes. Mean Hospital stay was 3 $\pm$ 0.6 days. Recurrence was noted in 1 (0.68%) patient in a follow up period of 2 $\pm$ 0.46 years.

Conclusion: Tissue repairs hold good even today in the deserving patients and should be undertaken without hesitation where necessary. We should not hesitate in deciding for easier and cheaper alternatives when available.

Keywords: Inguinal hernia, Bassini's repair.

INTRODUCTION

Hernia (known as breuk in Dutch, rompure in French, keal in Greek and rupture in English) has plagued humans throughout recorded history and in medicine it is difficult to find historical period, but we found two eras of uneven time: pre-technique and technique [1]. In 1887 Edoardo Bassini introduced his method of successful inguinal hernia repair. Since then more than 70 types of pure tissue repair have been reported [2] and the management of the inguinal hernia has been a hotly debated topic. However the Lichtenstein repair has now emerged as gold standard procedure as numerous comparative randomized trials clearly demonstrate its superiority over the traditional tissue approximation method. Many if not most surgeons in our country have switched over to this technique. Further still the preperitoneal mesh placement may be taking over Lichtenstein repair because of its low recurrence rates [3]. This is not the end and we have more advanced techniques. No doubt that these are wonders of modern surgery having low complication rates but the costs are high too in comparison.

In our predominantly poor population, at times arranging food for bare minimum living becomes a problem what to say about an elective operation, sadly, this afflicts a sizeable segment of our population in

Correspondence: Lt Col Irfan Ali Sheikh, Classified Surgical Specialist, AK Combined Military Hospital, Muzaffarabad.

Pakistan and includes mainly elderly pensioners who are left alone to live by themselves. Patients of inguinal hernia of this segment would linger on with their disease not for the lack of advice but for the lack of finances to have them operated upon. These patients would seldom live their disease and often report with complications of obstruction and strangulation, whence it becomes a major problem not only technically but also financially. A similar sentiment can be appreciated internationally where surgeons are cultivating a culture for consideration of all types of hernia repairs and not to focus only on the Lichtenstein repair with a myopic vision [4-7].

The authors themselves are a strong advocate of the Lichtenstein tension free repair. But keeping in view the above mentioned problems and increasing conscience on economy, we have went back to follow up and evaluate our patients of inguinal hernia who were treated by modified Bassini's repair in the last decade because of resource constraints.

Purpose of Study

To study the status of tissue repair for inguinal herniorrhaphy in the modern day surgery.

PATIENTS AND METHODS

This is a pilot and descriptive study that has been carried out in the settings of military hospitals at CMH Abbotabad Mar 1995 – May 1999, Pakistan Air Force Hospital Sargodha May 1999- Jan 2002 and CMH Rawalpindi June 2003 to March 2005. All the patients were booked at first admission and their record was maintained. They were called for follow-up at 3 months, 6 months then annually.

The operation was performed under general anaesthesia or spinal anaesthesia. The procedure was started by standard inguinal approach and incision made at suprainguinal crease. Thereafter superficial fascia and deep fascia divided to expose the external oblique aponeurosis. The external oblique aponeurosis was cut to open the inguinal canal. This cut was extended from the superficial inguinal ring laterally, taking care to remain at least 5 cm away from the inguinal ligament. The spermatic cord was opened layer by layer and the hernial sac was exposed. Neck of the sac was dissected till proximal to the deep inguinal ring. Herniotomy was performed and the sac ligated flush with the peritoneal cavity at the dissected point. Deep inguinal ring was assessed to admit only the tip of the little finger of surgeon and repair was performed if the deep inguinal ring was found to be larger than this size or if it was lax. Thereafter patient was asked to strain or cough and for procedures under GA the anesthetist was asked to give a deep breath to the patient. It was ensured that there was no bulge of hernial sac at the deep inguinal ring.

If a bulge was found then repair was reassessed, excess peritoneal sac excised further deep if required. These patients were excluded from the study. Fascia transversalis was double breasted with catgut 2/0. The conjoined tendon was then sutured to the inguinal ligament with prolene 1. In this repair extreme care was taken that no suture was applied under tension and if a tension was suspected then a Tanner slide incision was made. External inguinal ring was then repaired with chromic catgut 2/0 and the closure done in layers with catgut 2/0. Skin was approximated with silk 3/0. Perioperative antibiotic cover was achieved with Ampicillin 500mg 06 hrly and Inj Gentacyn 80mg I/V 08 hrly for 24 hrs. Post operative dressings were changed every 3rd day and alternate stitches were removed after 7 days and rest of stitches were removed on the twelfth post – op day. Patient was discharged on the 3rd post operative day. Peri-operative sterilization was ensured meticulously. Post-op dressings were changed under strict precautions.

Inclusion Criteria

We included all the entitled workload including serving soldiers, their fathers, the

pensioners and non-entitled patients who were not lost to follow-up for next 2 years.

Exclusion Criteria

Children under the age of 13 years, patients of pantaloon hernia and those of recurrent inguinal hernia were excluded from the study.

All statistical data was analyzed using SPSS 11.0. Descriptive statistics i.e mean ± SD for numerical data and percentages for nominal data were used to describe the data.

RESULTS

A total of 210 patients were operated for inguinal hernia by tissue repair over the study period. Out of which 164 patients were included in the study. Out of these 148 patients had a regular follow up for the next 1.5-2.5 years, 3 had natural death and 13 patients were lost to follow up. The average age was 50.16 ± 19.12 years with age range 16-80 years and 98 patients with age 50 years and above. The mean operation time was 20 ± 5.84 min. Ninety seven (65.54%) patients required repair of the deep ring. In 47 (31.76%) patients Tanner slide incision was fashioned. Mean Hospital stay was 3 ± 0.6 days. Post operative complications recorded are listed in the table. Recurrence was noted in 1 (0.68%) patient in a follow up period of 2 ± 0.46 years. This patient was then treated by hernioplasty.

DISCUSSION

The second half of the twentieth century has seen a dramatic increase in the revolutionary capabilities of mankind. Two major revolutions in operative repairs have occurred. First one is the use of mesh and, second, its placement laparoscopically. This has further enhanced the armamentarium of hernia repair which already had more than 70 types of pure tissue repairs [2]. As a consequence, hernia surgeons today must choose among multiple competing operative techniques. This indicates that none of the operative technique has proven to be the best. Also different levels of complexity and severity exist among inguinal hernias [8]. This problem is further compounded by the fact that everyone is becoming increasingly conscious on the subject of cost effectiveness as surgeons are trying to combine two or more procedures at a single operation [9].

The military hospitals are a chain of interlinked hospitals through out the country. All these hospitals maintain a very efficient Statistics department that maintains record of all the patients treated. The patient dependant on one hospital will come to the same hospital for post-op and follow up, except for the serving soldier who may be posted out and the same can be approached through Central Army Post Office very easily. The patient can thus be called for follow up or at least a correspondence can be established conveniently. Even on the next station if any complication occurs old documents are sought from the previous station invariably. Another peculiar feature is that the hospital stay and the use of commonly available medicines is not a big problem especially in peripheral hospitals. On the contrary the local purchase of medicines and the purchase of implants by the non-entitled patients is a financially sensitive subject. Keeping in view this scenario most of the surgeons in the peripheral hospitals are still using the tissue repair techniques for the treatment of inguinal hernia.

There is no doubt that Lichtenstien repair is considered the best method currently available to treat inguinal hernias [10] and with the advent of laparoscopic surgery, even better results have been attained. The dilemma with our setting is nonavaiability of options especially in the peripheral hospitals. The training imparted to surgeons during their training at central hospitals is based more on mesh repairs. This certainly does not lend one to using more traditional methods of repair like Bassini or Shouldice repair. Some authors believe that the increasingly unacceptable recurrence rates may also be due to diminishing proficiency gained in the technical skill and familiarity with groin

anatomy amongst the surgical residents because of lack of training in this field [4].

In our study we have noted the intermediate results of the procedure and found the recurrence rate to be less than 1%. Pinter and Markus in their study of 343 hernia repairs by Shouldice method have reported a recurrence rate as low as 0.9% [11]. Although Lichtenstein's repair has been found useful and advantageous even in the patients with strangulated inguinal hernia but this does not mean that tissue repair procedures are contraindicated for such patients as is also indicated in the surgical literature [12]. This fact is increasingly asserted as regards the hospital stay and cost of perioperative antibiotics. In this study the peri operative antibiotic cover was provided by ampicillin and gentacyn, whereby in patients operated by Lichtenstien's the cover is provided by Co-amoxyclav or cephalosporin both of which incur an additional expenditure to the peripheral hospitals thus diverting their resources from essential and life saving medicines.

Scientific process is an ongoing process of evolution and the present day surgery is not only oriented on the modern techniques but also on the cost effectiveness. Current data analyzing biochemical and hormonal factors reveal that serum CRP levels rise more in Lichtenstein (138.4 $\pm$ 72.5 mg/L) than Bassini repair (137.2 $\pm$ 55.9 mg/L) [13].

A difference in the levels of vascular endothelial growth factor (VEGF) and basic fibroblast growth factor (b-FGF), whose production is also regulated by interferon (IFN) – gamma and interleukin (IL) –10 has been observed in a comparative study between Bassini hernia repair and Lichtenstein repair, however the exact effect is still in the process of evaluation [14]. Surgeons have left a way open for the long term recurrence and cost effectiveness as a moderating factor even with documented evidence of superiority of a modern procedure [15]. Hence the tissue repair procedures should not be considered as historical interest only because they present important alternative in patients where method of mesh placement is not suitable for either technical or financial reasons [4].

Table: Complications encountered.

Complications	Incidence
Urine retention	3 (2.03%)
Superficial haematoma	2 (1.35%)
Wound Infection	3 (2.03%)
Seroma	1 (0.68%)
Post operative neuralgia	4 (2.7%)
Scrotal edema	3 (2.03%)
Local hypoesthesia	7 (4.73%)
Ischemic Orchitis	1 (0.68%)
Recurrence	1 (0.68%)

CONCLUSION

Lichtenstein's and laparoscopic repair of the inguinal hernia are no doubt the gold standard approaches but the tissue repair procedures are not primitive either. A proficiently learned and adequately performed tissue repair is not a primitive method which is to be condemned, rather has comparable results. Tissue repairs hold good even today in the deserving patients and selected settings. These should be undertaken without hesitation where necessary. We should not be late in deciding for easier and cheaper alternatives where indicated.

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