

Surgical workshop

Lichtenstein hernioplasty for groin hernia in central Africa

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Abstract

Background Herniorraphy is a common surgical procedure in our surgical practice in Cameroon. A study was conducted in The General Hospital of Yaoundé, to assess Lichtenstein hernioplasty technique, among other hernioplasties.

Materials and methods. Fourteen patients were studied, in a retrospective study of 9 years (1996 to 2005) in A General Hospital in Yaounde Cameroon, Central African. All the patients benefited from a tension-free repair using a surgical mesh of polyglactin 910 (vicril*) under local anesthesia. This technique was applied for simple inguinal hernias, bilateral hernia and recurrent hernia..

Results The time of surgery varied from 35 minutes to 140 minutes. Three complications were noted including one hematoma, one scrotal oedema and one crural neuralgia; 9 patients out of 14 were followed up closely for 9 years; no recurrence was noted.

Conclusion: We therefore recommend the technique of the Lichtenstein in the repair of the groin hernia, in association to local anaesthesia in Cameroon.

Key-words: Groin hernia – Hernioplasty , Surgical mesh , Lichtenstein technique

Introduction

In general surgery, surgical treatment of inguinal hernias is one of the most common surgical interventions ⁴. It represents 17.2% of all surgeries in France and 24% in the United States of America ¹¹. Herniorraphies repairs are the most frequently practiced surgical interventions, they are the most well known, especially the Bassini, McVay and Shouldice techniques ⁷. Hernioplasty repair is, nevertheless, not frequently used in sub-Saharan Africa, be it by classical route or by laparoscopy. The Lichtenstein's technique has been described recently as the gold standard technique in regarding hernioplasty ¹³. We found it necessary to study the Lichtenstein technique applied in the repair of different types of hernias in Cameroon.. We will define the technique and study its morbidity and the merits of this technique. Lichtenstein technique was carried out to be compared with others teams around the world.

Materials and methods

This is a retrospective study over a nine year period from 1996 and 2005 in Yaoundé General Hospital in Cameroon, Central African. Clinical information was retrieved from patients case files and operative notes. Fourteen conservative cases were recruited in the study. All patients were done under local anesthesia

using lignocaine 1%; depending on the patient weight; 20–40 cc of lignocaine were administered locally. Solumedrol were used as solvent for lignocaine in the ratio of 9 cc lignocaine for 1 cc of solumedrol solution. The 10 cc solution obtained was used for the first infiltration. Subsequent infiltrations contained only lidocaine. The first injection was done at a point situated 2 cm medial to the antero-superior iliac spine (A.S.I.S.) and perpendicularly to the skin and across the skin layers towards the antero-superior iliac spine, in order to anesthetize the ilio-epigastric and ilio-inguinal nerves. Then a second infiltration was done under the skin on the trajectory of the classical inguinal incision, on the trajectory of the external oblique aponeurosis and of the superficial inguinal orifice. By approach, all the patients were operated upon by the traditional route, after making an incision on the bisector of the pubo-umbilical and pubo-iliac lines. The various phases of the surgery included a four step technique as described by Amid PK in 1999 ³: inguinal incision, isolation of spermatic cord in men, resection of the hernial sac in external oblique hernias (indirect type), putting back the hernial sac in the peritoneal cavity and then folding the fascia transversalis in direct hernias. The Lichtenstein

technique was applied in each case during parietal reconstitution, i.e.: insertion of a surgical mesh at the base of the inguinal canal without applying any tension (tension-free repair). The prosthesis used in each case was made of polyglactin 910 (Vicryl®). The prosthesis was prepared by making a cut along its main vertical axis such that an “ogival” form was obtained: an excavation was made at its center in order to provide for the passage of the spermatic cord, the excavation being, wider at its base than at its summit; 2 upper leaflets were then obtained and fixed, after their crossing over, above the cord. Special attention was used to manipulate the surgical mesh under sterile conditions: It was constantly aspirated when it was to be placed in its position. Fixation of the surgical mesh was done with non absorbable suture between the inguinal canal and the inguinal ligament. **Results** 14 patients were operated 10 were men and 4 were women. Their mean age was 60 years with a range of 41 to 80 years old. Simple (non-complicated) inguinal hernias were the most frequent and were found in 11 out of the 14 cases. There was one inguino-scrotal hernia and one bilateral inguinal hernia were encountered. There were 11 indirect hernias, three direct hernias, two hernias were recurrent. The time to surgery was recorded. The shortest time was recorded for simple inguinal hernias 35 – 45 minutes. Inguino- scrotal hernia was done in 45 - 70 minutes. The longest surgery timings were recorded for bilateral hernia and recurrences, with times varying from 120 to 140 minutes. All patients were admitted from varying lengths of time. The mean stay was 3 days with range of 24 hours to 7 days. 12 patients were discharged from hospital before day 3 and two patients stayed for five and seven days. Three immediate post operative complications were observed in three different patients: hematoma, scrotal oedema and crural neuralgia. It consisted of meeting the patient in the out patient department 2 times a month for the first 3 months, then once a month for the next 9 months and finally once a year as from the 2nd year. This follow- up consisted of examining the skin scar stability intactness of the inguinal canal. Nine of the 14 patients have been followed up to date, corresponding to a 78% follow up rate. No recurrence was observed at the end of 9 years in any patient. No infection or rejection of the surgical prosthesis was noted.

Discussion

Our study confirmed some known facts about for inguinal hernias¹⁷ The predominance of the male sex and a greater prevalence of external oblique inguinal hernia was noted. At surgery we recorded longer operative time than recorded in most studies². We recorded a maximum time of 140 minutes whereas this time was shorter for most other studies². The longest time was observed for bilateral hernia which logically corresponds to 2 independent surgeries. Thus, surgery

time varied according to the type of hernia and may be more importantly the surgeon. Local anesthesia was used in all cases, and was well tolerated. This type of anesthesia is of routine use in many other centers where inguinal hernias are repaired regularly^{9,16}. As concerns the application of the Lichtenstein technique, the main difficulties faced were to keep the surgical mesh sterile during its manipulation, and the calibration of the prosthesis that was done with respect to the patients build. Handling of the surgical mesh was made safer and faster with increased experience of the surgical team. In our study, we applied tension-free repair hernioplasty for unilateral, uncomplicated hernias according to Scheyer in Austria¹⁸. We applied the same another technique as described by Garravello in the repair of bilateral and the recurrent hernias⁸. Our patients were all admitted and averaged longer hospital stay (up to seven days), compared to shorter stay in most other studies in European and Japanese studies [6,21]. Our patients treated with tension-free hernioplasty as compared to simple hernia repairs (herniorraphies) often stayed for shorter periods. It was joyful to see the patient discharged within 24 hours of his operation in our services for the first time. Complications were not frequent and were seen in three patients. The complications seen (hematomas, seromas, testicular edema, post operative neuralgia) are the same as the encounters of other workers^{12,19}. Prosthesis rejection, urine retention, are less frequent and were not encountered in our study. The most regretful complication after any herniorraphy is recurrence. This was not encountered in our series. Lichtenstein technique, is associated with a very low recurrence rate with varying reports of 0.1% and 2 % with a mean of 1%. After a fairly long period (9 years) of follow up we have not seen a recurrence in any of our patients. Our small sample size does not however permit us to make very conclusive statements about a common operation. Its however reassuring that 9 years after , the Lichtenstein technique which is not a commonly practiced technique in our environments all are free from recurrence or any adverse effects of herniorraphy.

Conclusion

The practice of the Lichtenstein technique under local anesthesia reduces hospital stay in Cameroon as observed worldwide. A hernia repair without tension as described by Lichtenstein is a trust worthy technique; it is easy to apply even in a context of low equipment and facilities like in Cameroon and sub-Saharan Africa in general. Taking into account the reduced hospital stay, the scarceness of recurrences and given that this technique can be practiced by all general surgeons, we wish and hope that the application of this technique be amplified in Cameroon as well as in Africa as whole for the well being of our patients. We recommend therefore the tension-free repair hernioplasty (Lichtenstein), to be

applied as in the treatment of groin hernia in Cameroon and Africa in general.

Acknowledgments and declaration

The experiments carried out in this study comply with the current laws in Cameroon. Special thanks to Mister Pierre Nouko, Manager of SOCINT Company Cameroon.

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