Early Outcome Of Day Surgery For Inguinal Hernia In a Suburban General Hospital In Lagos, Nigeria

N.A.Ibrahim*, A. O. Ugburo+, O.A.Atoyebi+

SUMMARY

Objective: To evaluate the outcome of herniorraphy or herniotomy as day procedure in patients with inguinal hernia

Method: A prospective study of early outcome of surgery in 144 patients with inguinal hernia who had either herniorraphy or herniotomy as day procedure between March 1997 and September 1999 at Isolo General Hospital in Lagos was carried out. Patients were followed up for at least 3 years.

Results: Eighty-six adult patients had herniorraphy while the remaining were paediatric patients who had herniotomy. The male to female ratio in this study was 23:1 and 61% of the patients presented with right-sided hernia. The most common complication in this study was wound infection which was present in 6% of the patients. Other complications were scrotal swelling and wound haematoma, observed in 10% of the patients post-operatively. There were no cases of recurrence during the follow-up period of 3 to 5 years and no death was recorded.

Conclusion: In this study, herniorraphy or herniotomy as day procedure was found to have a satisfactory early outcome with acceptable level of post-operative morbidity. *Niger Med. J, Vol 46, No. 2, April - June 2005: 33 – 35*

Key words: **Day Surgery, Inguinal hernia, Herniorraphy, Herniotomy.**

INTRODUCTION

Inguinal hernia is one of the most common surgical conditions [1,2,3]. It affects all age groups, both sexes and virtually all communities. Five percent of adult males in one community were found to be affected [2]. Surgery for inguinal hernia constitutes a great percentage of the operative procedures undertaken in most General Surgery units and the waiting period for most patients is often long [3]. This long waiting period increases the chance of developing complications with significant [2].

Inguinal herniotomy for children or herniorraphy for adults is often done as an in-patient procedure. On the other hand, out- patient day case herniorraphy or herniotomy is now being widely practiced. Studies have shown that day surgery for Inguinal hernia has a comparable good short-term and long-term outcome as in those that had in-patient treatment [4-8]. It has also been found that out-patient herniorraphy or herniotomy can be accomplished at a lower cost than standard in-patient operation without compromising safety[1,5,6].

This study was thereby undertaken to evaluate the outcome of day surgery for inguinal hernia in a suburban General hospital with limited admission facilities.

From: Departments of Surgery*, Lagos State University Teaching Hospital, Ikeja, Lagos and +Lagos University Teaching Hospital, Idi-Araba, Lagos.

Correspondence: N.A. Ibrahim

PATIENTS AND METHOD

This is a prospective study involving all patients presenting with inguinal hernia at the surgical out-patient clinic of Isolo General hospital in Lagos between March 1997 and September 1999.

Infants less than 6 months and all other patients with concomitant systemic illness that required admission were excluded from this study. The age and sex of the patients were documented. The type of hernia whether primary or recurrent and the side affected were recorded. All patients had complete pre-operative physical examination to assess their fitness for surgery.

Pre-operative haemoglobin level estimation and urinalysis were done for each patient. Patients were instructed to abstain from food and fluids from10 p.m on the day preceding the surgery. They were also instructed to come to the theatre before 8 a.m. Children below the age of 2 years were allowed liquid diet up to 4 hours before reporting to the hospital. All patients below the age of 15 years had herniotomy only using the technique of high ligation of the hernia sac. This procedure in children was carried out under general anaesthesia. The adult patients had herniorraphy under local anaesthesia with 1% lignocaine. The method of herniorraphy used in adults was the Bassini technique. Adults who did not tolerate local anaesthesia intra-operatively were converted to general anaethesia. Some adult patients preferred general anaesthesia and were offered general anaesthesia ab-initio. All surgical procedures were carried out by the same surgeon. The patients were randomly assigned to two groups. The first group, the parenteral prophylactic antibiotic group, was offered pophylactic antibiotic coverage with parenteral Ampicillin-Cloxacillin at induction of anaesthesia and 4-6 hours post-operatively at a dose of 30mg/kg body weight per day. The second group, the enteral antibiotic group, was offered a 5-day course of oral Ampicillin - Cloxacillin in form of capsules, syrups or drops at a dose of 30mg/kg body weight per day in four divided doses. This was commenced on the day of surgery after full recovery from anaesthesia.

All patients were administered post operative analgesia in the form of intra-muscular Novalgin injection 35mg/kg body weight in the immediate post operative period, followed by oral paracetamol 15mg/kg body weight 8 hourly for 3 days. The patients were discharged from the hospital on the day of surgery after full recovery from anaesthesia, with stable vital signs after being monitored in the recovery room for 4 hours. They were instructed to report to the hospital if they have severe pains, fever or are unable to pass urine. They were also instructed to keep the wound dressing dry. All the patients were subsequently reviewed on the 7th post operative day at

the surgical out-patient clinic where their stitches were removed and state of their wound assessed. Other post operative complications were also noted during this visit. All patients were followed up for a period of 3 to 5 years with particular attention to evidence of early recurrence. The data was analyzed using the student T-test and Chi square and level of significance set at $p < 0.05$.

RESULTS

One hundred and forty four patients who had surgery as day procedure for inguinal hernia were studied. Fifty eight patients (40%) were children below the age of 15 while the remaining 86 patients (60%) were adults. The age range of the patients was between 6 months and 70 years with the mean age of 24.6 (S.D $\pm$ 20.8) years.

There were 138 male patients while there were only 6 female patients, giving a male: female ratio of 23:1. Right sided hernia was found in 88 patients (61%) while 52 patients (36%) presented with left sided lesions. Four patients (3%) had bilateral hernias and 4 of the right sided hernias were recurrent. All the 58 patients below the age of 15 years had herniotomy while herniorraphy was done in the remaining 86 adult patients. All the herniotomies and 26 of the herniorraphies (30%) were done under general anaesthesia. This included 3 adult patients with bilateral hernias. The remaining 60 adult patients had herniorraphy done under local anaesthesia. Eight patients in this group had elevated blood pressure, which was controlled before surgery. Two out of these hypertensive patients presented with recurrent hernias.

There were seventy one patients (49%) in the parenteral prophylactic group, while 73 patients (51%) were in the enteral anitibiotic group. A total of nine patients (6%) developed low grade wound infection in form of stitch abscesses belonged to the parenteral prophylactic antibiotic group, while the remaining 5 belonged to the enteral antibiotic group. The wound infection rates in the first and second groups were 7% and 5% respectively. There was no statistically significant difference in the rate of infection for both groups (Fisher exact test P value = 0.517, P> 0.50). There was no case of frank pussy discharge or wound breakdown in the study.

Mild to moderate degree of wound or scrotal haemotoma was found in 6 (10%) of the herniotomy group while 8 adults patients (9%) had similar complications. All hematomas resolved spontaneously within 3 weeks in the post-operative period without aspiration. None of the patients reported to the out-patient clinic before the one week follow -up appointment date on account of pain or pain related symptoms.

During the follow-up period which was from 3 to 5 years, early recurrence was not observed in any of the patient. The were no other late complications and no death recorded throughout the period of this study.

DISCUSSION

Inguinal hernia is a very common surgical problem worldwide. The aim of early treatment of this condition is to avoid known complications notably incarceration or obstruction with or without strangulation. The incidence of these complications has been reported to be about 5% [2]. Elective surgery for inguinal hernia is known to be a very safe procedure whereas emergency surgery for obstructed or strangulated hernia is associated with significant morbidity and mortality[2].

Elective inguinal herniorraphy or herniotomy could be carried out either as an out-patient day case surgery or an in-patient procedure. The former is, however, associated with a significantly lower cost of treatment and a shorter waiting period before surgery [1,6]. These advantages of day surgery are more relevant to a developing nation with a depressed economy where the cost of surgical care is not easily affordable to the majority of the population.

Day surgery for Inguinal hernia is now a well established procedure [4-10]. James Nicole in 1909 reported operating on children with Inguinal hernia as day cases while Eric Farquharson in 1951 carried out day case adult hernia repair under local anaesthesia [9]. More than 95% of Inguinal hernia repair in centres with appropriate facilities are done as day procedures [6-8,10].

In this study of 144 patients who had day surgery for Inguinal hernia, 86(60%) were above the age of 15 years. The peak incidence of hernia in this group is in the 4th decade of life representing 14% of the total number of cases studied. Rai et al reported a peak incidence of hernias in adults in the 5th decade of life[2].

Hernia is predominantly a male problem affecting about 5% of adult males[2]. The male: female ratio of 23:1 in this study is similar to reports by others [3,9]. Right sided hernias were seen in 61% of the patients. The preponderance of right sided hernia has been documented in earlier studies [2,4,7,8,11]. Although, the cause of this observation has not been established, the anatomical basis of this may lie in the attachment of the mesentery which makes the bowel loops attached to the right of the midline to easily remain in the corresponding groin than those attached to the left [2]. Furthermore, Arnbjornsson[12] reported a three fold increase in the incidence of right sided inguinal hernia in men who had undergone appendicectomy.

The repair of all the adult hernias in this study was carried out applying the Bassini method. This is the most widely performed procedure for inguinal hernia repair in Nigeria. However recurrence rate of 3% to 23% has been reported for this technique[12]. Irrespective of the technique of repair employed, recurrences after herniorraphy for indirect hernias and direct hernias are reported to be between 1.1% to 20% and 3.5% to 20.9% respectively. Although 60% of this complication has been found to occur within 5 years, recurrence after herniorraphy continues up to 25 years[3]. The follow up period of 3 to 5 years in this study is too short for an objective evaluation of the recurrence rate in this series. However, there was no case of early recurrence among the patients studied.

Fifty eight patients who were below the age of 15 years had herniotomy. High ligation of hernia sac without repair has been found to be satisfactory in the treatment of inguinal hernia in children and infants[12]. All children and 30% of the adults had

surgery under general anaesthesia. The adults were those who could not tolerate the procedure under local anaesthesia or had huge hernias. The remaining 60 adult patients (70%) tolerated the procedure well. Herniorraphy with local anaesthesia has been found to significantly reduce the cost of surgery, the rate of postoperative ileus and urinary retention[1,12].

Post-operatively, the administration of parenteral Novalgin followed by oral paracetamol was found to give satisfactory analgesia to the patients in this study. There were no complaints of significant pain before, during and after the follow-up visit on the 7th post-operative day. Pain after surgery has been identified as one of the complications that may follow open hernia repair. The incidence of groin pain persisting 1 month after herniorraphy has been reported to range from 8% to 25%[1].

All patients in this study had either perioperative antibiotic prophylaxis or a 5 day course of oral Ampicillin - Cloxacillin. Although, the rate of wound infection in this study is 6%, there is no statistically significant difference in the wound sepsis rate for the two groups. Wound infection after elective herniorraphy is reported to be in the range of 1% to 5%[1,5,12]. Perioperative antibiotic prophylaxis has been found to be effective in preventing 48% of all infections in clean surgical procedures[13]. Considering the fact that majority of the patients in this study belonged to the low socio-economic class and live in an unhygienic environment, the 6% infection rate recorded may be acceptable and there is no need for continuation of antibiotics beyond the perioperative period.

In this study, 10% of the subjects had mild to moderate degree of wound or scrotal haematoma which promptly resolved within 3 weeks. Significant haematoma following herniorraphy is found to be in the range of 0% to 5.4%[1].

There were no cases of re-admission into the hospital after discharge. Incidence of re-admission into the hospital after Day Surgery for herniorraphy is extremely low. This is often less than 0.5% of patients[4,5]. In most reported series, causes of readmission were mostly urinary retention, fever, wound infection and minor pulmonary embolism.

Elective out-patient day case herniorraphy is a safe procedure with a negligible mortality[3,5-8]. Adequate pre-operative screening of all Day Surgery patients to exclude those with significant concurrent systemic ailment will go a long way in preventing avoidable mortality. No deaths were recorded at the time of surgery and during the follow-up period in this study.

This study has shown that day surgery for inguinal hernia in both adults and children can be carried out with good results and negligible morbidity. It is worthy of mention that the current trends in Inguinal hernia repair using the Lichenstein "tension-free" technique and others necessitating the use of a patch [14] are not yet in vogue in Nigeria and cannot be compared for now.

It is recommended that elective herniorraphy or herniotomy should be done as day procedures. This will help in shortening the waiting period for elective surgery and also lessen the strain on the limited surgical beds in most hospitals in developing nations. However, there is the need to carry out a thorough clinical examination to exclude patients with systemic conditions that require intra or post operative monitoring. Such patients should be treated as in-patients.

REFERENCES

1. Keith WM, Daniel JD. The management of Hernia-Considerations in cost -effectiveness. Surgical Clinics of North America 1996; 76: 105-115.
2. Rai S, Chandra S, Smile S R. A study of the risk of strangulation and obstruction in groin hernias. Aust N Z J Surg 1998; 88: 650-654.
3. Badoe E A, Hernia. In: Badoe E A, Archampong E Q, Jaja M O A, (Editors). Principles and Practice of surgery. Tema: Ghana Publishing Corporation, 1994 : 461-471.
4. Devlin H B, Gillen P H A, Waxman B P, MacNay R A. Short stay surgery for inguinal hernia : experience of the Shouldice operation, 1970-1982. Br. J. Surg 1986; 73: 123-124.
5. Lau H, Lee F. An audit of the early outcomes of ambulatory inguinal hernia repair at a surgical day-care center. Hong Kong Med. J 2000; 6(2): 218-220.
6. Adejuyigbe O, Abubakar A M, Sowande OA, Olasinde A A, Day-case surgery in children in Ile-Ife, Nigeria: An Audit. Nig. J. Surg. 1998; 5(2): 60-63.
7. Adeyemi S D, Da rocha Afodu J T, Olayiwola B. Outpatient herniotomy with ketamine: A pospective study of 50 herniotomized children and review of 219 herniotomies with ketamine. West Afr. J. Med. 1985; 4:155-161.
8. Awojobi O A, Sagua A C, Ladipo J K. Outpatient management of external hernia: A district hospital experience. West Afr. J. Med. 1987; 6: 201-204.
9. Miller J M, Day surgery. In : Russel R C G, Williams N S, Bulstrode C J K, (Editors). Bailey and Love's Short practice of surgery, London: Arnold, 2000: 1284-1295.
10. Lagoe R J, Milliren J W. A community based analysis of ambulatory surgery utilization, American Journal of Public Health 1986; 76(2): 150-153.
11. Kingsnorth A, Benet D H. Hernias. In : Russel R C G, Williams N S, Bulstrode C J K, (Editors). Bailey and Loves Short practice of Surgery. London: Arnold, 2000: 1143-1157.
12. Nyhus L M, Kleen M S, Rogers F B. Inguinal hernia. Curr. Probl. Surg. 1991: 406-447.
13. Pla H R, Zalesnik D F, Hopkins C C, Dellinger A W, Karchmer C S, Bryan J F, et al, Perioperative antibiotic prophylaxis for hernioraphy and breast surgery. The New England Journal of Medicine 1990; 332: 153-160.
14. American Journal of Surgery Supplement.