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Full Length Research Paper

Inguinal hernias: analysis of incidence, diagnosis and management of 172 consecutive adult cases at Igbinedion university teaching hospital Okada

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This study is to determine the incidence, pattern of clinical presentation, diagnosis and management at Igbinedion University Teaching Hospital Okada. 172 retrospective and prospective consecutive cases of operated adult inguinal hernias at Igbinedion University Teaching Hospital, Okada, Edo State, Nigeria were studied with regards to incidence, clinical presentation, diagnosis and management. 172 cases were involved in this study out of which 102 patients were males (57.3%) and 70 females (40.7%); almost twice as common in males. Males are more involved in manual work and increased activities compared with their female counterparts. Their ages range between twenty (20) and seventy (70) years with a mean of forty five (45) years. Our findings showed: (a) the incidence of inguinal hernia in adults in our hospital was 1 per 1000 (b) the peak age distribution was in the 31-50 years age group and (c) males were more affected than females in the ratio of approximately 2:1. Eight (8) cases had diabetes mellitus and five (5) cases with enlarged prostate were excluded until after their prostate surgery. There were no deaths recorded in this study. Early diagnosis of patients with hernia followed by elective surgical treatment as soon as possible seems to be the best way to minimize the relatively high morbidity and mortality associated with inguinal hernias.

Keywords: Inguinal hernia, Incidence, Diagnosis, Management.

INTRODUCTION

Inguinal hernia repair remains the commonest operation performed by general surgeons all over the world, and it is a common indication for surgery in Africa. Most cases involve men and are treated in advanced stages often

with complications because the patients present late to the surgeon (Pallas et al., 2000).

Inguinal hernias continue to be a source of morbidity and mortality in our centre. Early presentation and elective repair of inguinal hernias is pivotal in order to eliminate the morbidity and mortality associated with this very common problem (Mabula and Chalya, 2012).

Diagnosis of groin hernia is based on clinical

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examination. Symptomatic patients often have groin pain, which can sometimes be severe. Inguinal hernias may cause a burning, gurgling, or aching sensation in the groin, and a heavy or dragging sensation may worsen toward the end of the day after prolonged activity. An abdominal bulge may disappear when the patient is in the prone position (LeBlanc et al., 2013; Mensching and Musielewicz, 1996).

Groin ultrasound scan, computerized tomographic scan (CT) or magnetic resonance imaging (MRI) are rarely needed unless when the diagnosis is uncertain or if there are complications or in differentiating a hernia from other causes of groin swellings (Rosenberg et al., 2011).

Until now the benchmark technique for surgical management has been the well-defined herniorrhaphy technique (Pallas et al., 2000).

Surgical repair of uncomplicated inguinal hernia either by the open or laparoscopic method is advocated and the outcome is often favorable even though the laparoscopic method is still not widely available in our environment. Complicated hernias are fraught with increased mortality with and without operative management (Madziga and Nuhu, 2008).

Prophylactic elective herniorrhaphy is a safeguard for inguinal hernia as soon as identified irrespective of patient's age and surgical repair is usually advised in the presence of symptoms affecting daily life (Mbah, 2007; ElRashied et al., 2007; Nehme, 1983) and also because of the danger of incarceration and strangulation most especially in our environment where immediate access to surgical treatment might not be available.

This study is intended to describe our own experience with regards to the incidence, pattern of clinical presentation; diagnosis and surgical management of inguinal hernias in this area located in the Southern part of Nigeria.

MATERIALS AND METHODS

172 retrospective and prospective consecutive cases of operated adult inguinal hernias at Igbinedion University Teaching Hospital, Okada, Edo State, Nigeria were studied with regards to clinical presentation, diagnosis and management.

Ethical approval for this study was obtained from the University Teaching Hospital authorities before the commencement of the study.

Data collection was by patients' medical record number, sex, age, clinical presentation, diagnosis and the type of surgical operation carried out.

Data was initially documented on a special data collection form before being transferred to a data field

program of Microsoft excel before the analysis was carried out. Statistical data analysis was done using SPSS software version 17.0.

The files were reviewed regarding the history at presentation, incidence and sex distribution. The usual diagnostic pathway of taking history, physical examination and special investigations were followed since all the cases were operated as elective cases.

There were one hundred and two (102) males and seventy (70) females.

Their ages ranged between twenty (20) and seventy (70) years with a mean of forty five (45) years.

All the cases had elective open surgical tension free repair under spinal anesthesia without insertion of mesh because of non-availability on the one hand and cost of the mesh on the other when available.

All had a combination of cephalosporin and metronidazole in form of antibiotics at the commencement of surgery after the administration of the spinal anaesthesia. The antibiotics were continued for the next forty eight (48) hours in view of the fact that most of the patients had poor groin hygiene.

Presentation

Diagnosis of inguinal hernia is based on clinical examination. Symptomatic patients often have groin pain, which can sometimes be severe. Inguinal hernias may cause a burning, gurgling, or aching sensation in the groin, and a heavy or dragging sensation may worsen toward the end of the day and after prolonged activity. An abdominal bulge may disappear when the patient is in the prone position.

Examination involved feeling for a bulge or impulse while the patient coughs or strains.

Although imaging is rarely warranted ultrasonographic scan, computerized tomographic scan (CT) or magnetic resonance imaging (MRI) are rarely needed unless when the diagnosis is uncertain, or in a recurrent hernia or suspected hydrocele or in some patients without a palpable impulse or bulge on physical examination or if there are complications or in differentiating a hernia from other causes of groin swelling.

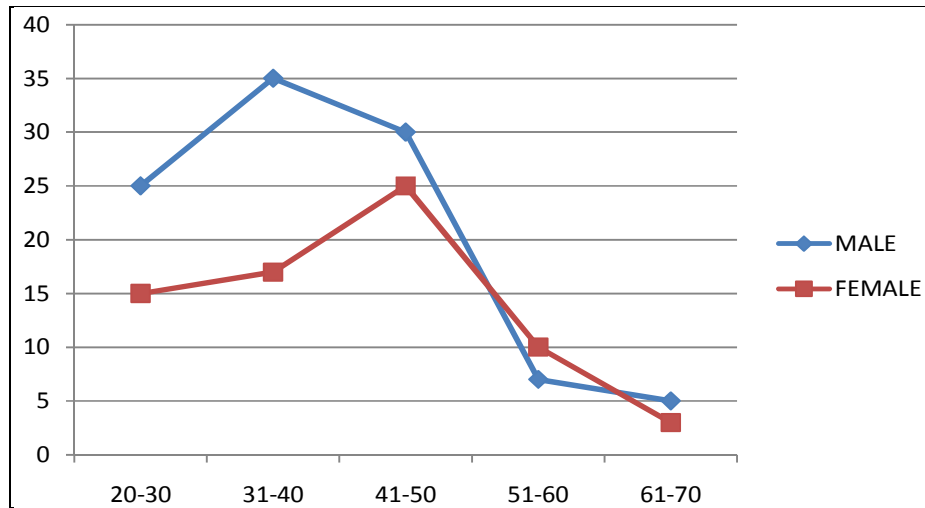
It must be stressed that adult inguinal hernia presentation in this environment is rarely in doubt because patients come at advanced stage of presentation usually as massive groin swellings (figure 1 below) and some came with excoriation of scrotal skin in cases that presented with inguino-scrotal swellings (figure 2 below) because of chronicity of the swellings coupled also with poor hygiene.



Figure 1



Figure 2



Graph 1. Showing the age and sex distribution ratio

RESULTS

There were one hundred and seventy two (172) patients whose ages ranged between twenty (20) and seventy (70) years with a mean of forty five (45) years.

The males were one hundred and two (102) 59.3% while females were seventy (70) 40.7%.

The condition occurred almost as twice in males than in females.

The age and sex distribution ration is as shown on graph 1 above.

In this area with a population of about 154,000, the incidence of inguinal hernia in adults is 1 per 1000.

Twenty two (22) 12.8% patients had direct hernias and one hundred and fifty (150) 87.2% were indirect.

One hundred and ten (110) 64% were on the right side; fifty two (52) 30.2% on the left side while ten cases (10) 5.8% were bilateral.

Fifty two (52) cases were inguino-scrotal, some of which apart from presenting as massive swellings also had scrotal excoriations depicting chronicity as to the length of time the hernia had been present.

All the cases had elective open tension free surgical repair since none had mesh insertion.

Post-operative hospital stay ranged from two (2) to five (5) days with a mean of three (3) days.

Eight (8) cases had diabetes mellitus and five (5) cases with enlarged prostate were excluded from this study until

Table 1. Showing post-operative complications

1.	Minor wound infections	Twelve (n 12) cases 7%.
2.	Haematomas/Scrotal Oedema	Five (n 5) cases 2.9%.
3.	Post-operative pain	Two (n 2) cases 1.2%.
4.	Ischaemic orchitis	None.
5.	Recurrence	None.
6.	Death	None.

after their prostate surgery. There were no deaths recorded during this project.

The post-operative complications are as outlined on table 1 above.

All the cases were followed up for a period of two months initially, then seen six months later and were instructed to come back should there be any recurrence but no one has reported so far for approximately two (2) years of follow-up.

DISCUSSION AND CONCLUSION

Inguinal hernia is a common indication for surgery in Africa. Most cases involve men and are treated in advanced stages often with complications. Until now the benchmark technique for surgical management has been the well-defined herniorrhaphy technique. Use of prosthetic implants has been rare because of its high cost and occasional unavailability in the developing world (Pallas et al., 2000; Matyja et al., 2008; Simons et al., 2013; Mjaland et al., 2001).

Our findings in this study showed the incidence of inguinal hernia in adults in our catchment area was 1 per 1,000; the peak age distribution was in the 31-50 years age group and males were more afflicted than females approximately in the ratio of 2:1.

Generally the diagnosis of inguinal hernia is based on clinical examination. Symptomatic patients often have groin pain, which can sometimes be severe. Inguinal hernias may cause a burning, gurgling, or aching sensation in the groin, and a heavy or dragging sensation may worsen toward the end of the day and after prolonged activity. An abdominal bulge may disappear when the patient is in the prone position (LeBlanc et al., 2013; Wang, 2012; Kingsnorth and LeBlanc, 2003).

Examination involved feeling for a bulge or impulse while the patient coughs or strains.

Although imaging is rarely warranted ultrasonographic scan, computerized tomographic scan (CT) or magnetic resonance imaging (MRI) are rarely needed unless when the diagnosis is uncertain, or in a recurrent hernia or suspected hydrocele or in some patients without a palpable impulse or bulge on physical examination or if there are complications or in differentiating a hernia from other causes of groin swellings (Rosenberg et al., 2011).

It must be stressed that adult inguinal hernias presentation in this environment is rarely in doubt because patients come at advanced stage of presentation usually as massive groin swellings as seen on figures 1 and 2 above under clinical presentation.

At the commencement of the repair routine prophylactic antibiotic administration might not be necessary except when contemplating on mesh insertion (Sanabria et al., 2007; Terzi, 2006).

Prophylactic elective herniorrhaphy is recommended as a safeguard for inguinal hernia as soon as identified irrespective of patient's age as we carried out in this study.

Also surgical repair is usually advised because of the danger of incarceration and strangulation (ElRashied et al., 2007; Adesunkanmi et al., 2000).

The choice of technique depends on several factors, including the type of hernia, anesthetic considerations, cost, period of postoperative disability and the surgeon's expertise (Wéber, 2010; Burney et al., 1997; Hair et al., 2000).

Usually surgical repair involves either the open or laparoscopic method. However whether repair is carried out by open or laparoscopic technique depends on local expertise, economical considerations and patient preference (Bax et al., 1999).

Generally in patients with primary unilateral or bilateral groin hernia the preferred method is mesh repair, either at open surgery (Lichtenstein) or laparoscopically, irrespective of age.

In this open repair it is recommended to use a mesh secured with a non-absorbable monofilament suture (Woods and Neumayer, 2008).

Conventional tension-producing methods of repair like Bassini, McVay or Shouldice are no longer recommended in a routine elective setting (Rosenberg et al., 2011; Lichtenstein et al., 1989).

Laparoscopic technique on the other hand could either be Transabdominal pre-peritoneal (TAPP) or Totally extra-peritoneal (TEP) repair (Memon et al., 2003; McCormack et al., 2003).

They require general anesthesia, and the long-term hernia recurrence rate with these procedures is still unknown.

Laparoscopic repair is associated with less acute pain and faster recovery. Furthermore, available data suggest

less chronic long-term pain after laparoscopic repair (Takata and Duh, 2008; Keidar et al., 2002).

Laparoscopic repair makes it possible for patients to return to normal activities more quickly, but they are more costly than open procedures and this expertise is not readily available as at now in our environment.

We believe that not too long in the distant future, use of laparoscopic method of repair will be more employed in our society.

Following initial herniorrhaphy, complication and recurrence rates are generally low.

Recently there has been a growing interest in video-assisted surgery throughout developing countries (Pallas et al., 2000). However this enthusiasm should not obscure the fact that the technique is still in the developing stage and thus is more costly for the local economy. Indications for video-assisted surgery should be carefully selected in function of local conditions as well as problems specific to developing countries.

All our cases had the open type of repair with emphasis on tension free and we did not insert any mesh. As to the recurrence rate which is none in the present study, we believe only time will tell most especially long follow-up period of not less than fifteen (15) years.

There is much variation in the time when a patient returns to work after inguinal hernia repair. Most surgical research has focused on the type of operation performed, but other factors may be equally or more important.

Factors other than operative technique, including patient expectations, are strongly associated with return to work after inguinal hernia repair (Jones et al., 2001; Ferzli et al., 2008; Delikoukos et al., 2008).

Virtually all our patients go back gradually to their farming work within one month even though they were instructed to avoid lifting heavy weight for a period of about three (3) months.

Generally inguinal hernias continue to be a source of morbidity and mortality in our centre. Early presentation and elective repair of inguinal hernias is pivotal in order to eliminate the morbidity and mortality associated with this very common problem.

We therefore recommend early diagnosis of patients with inguinal hernias and elective surgical treatment which is the best way forward to minimize the relatively high morbidity and mortality associated with emergency operations.

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