Appendicitis And Appendectomy In The Obese Patients

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ABSTRACT

Acute appendicitis is the most common indication for an emergency surgery in the world. The grid-iron and lanz incision over the McBurney's point have been the widely used approach in some centres. The lower midline became the incision of choice when there is ruptured appendis with abscess formation. The lower midline incision became an alternative approach when it took us about 3 hours to operate an acute appendicitis in an obese woman with BMI of 32 using the grid-iron incision. We therefore decided to explore the question of lower midline incision as compared with the grid-iron in appendectomy in the obese.

Keywords: *Appendicitis, Appendectomy, Obese, Midline, Lanz, Grid-iron, Incision.*

I. INTRODUCTION

Acute appendicitis is the most common indication for an emergency surgery in the world. The procedure of choice in some center depends on the skill of the surgeon and facilities available. The grid-iron and lanz incision over the McBurney's point have been the widely used approach in the world. The lower midline incision became an alternative approach when the appendices ruptured with abscess formation. The lower midline incision became our method of choice when it took us 3 hours to operate an obese woman (BMI=32) using the conversional method of grid-iron and lanz incision.[1] We therefore decided to explore the question of lower midline incision versus grid-iron of lanz in appendectomy in the obese. However, no single studies have been done to characterize the use of lower midline incision in appendectomy in the obese. The aim of this study was to document our experience in the management of acute appendicitis and the post-operative outcome in the use of lower midline as compared to grid-iron or lanz incision in the obese adult patients.

II. METHOD

The prospective observational study report on the pattern, management complication rate, length of stay in the operational room, length of hospital stay, in hospital cost and the follow-up period of 7 days, 14 days, 30 days, 6 months and one year of appendectomy in the obese patients that came to Comprehensive Health Centers Okoyong in Odukpani Local Government Area of Cross River State, Nigeria from January 2017 to December, 2018. Patients were recruited or reviewed for the following data; BMI, type of procedure operative, intra-operative findings, operative time in the room, time for bowl sounds to return, wound breakdown and wound infection. [9] The diagnosis of acute appendicitis was carried out by performing the analysis of symptoms, physical examination and ultrasound scan. [2,7] We included the patients that met the following criteria; BMI > 30, adults age 20 and above and those confirmed with ultrasound that they have acute appendicitis and the authorized written consent. [4,5]

III. DATA ANALYSIS

Student t-test was used to find out the significant differences.

IV. RESULT

During the establishment time, 15 obese patients met the inclusion criteria. The demographic data are shown in Table 1 and 2. 15 obese patients were recruited in the study. 13(86.6%) were females and 2 were males (13.4%). There was no difference in the BMI of patients who received lower midline incision and the grid-iron or lanz incision. The mean age of the patients was 30.5±2.21 years, with a range of 22-25years. The commonest age affected was 21-40 years. The lower midline was performed eight (8) of them and the lanz or grid iron incision was performed on seven (7) of them. Through the first seven post operative days, 3 patients with grid iron or lanz had wound breakdown and on the 14 day post operative day 2 patients had wound infection and the pus was drained out in the ward (both with a BMI of 32 and 35). The bowl sound returned earlier in the obese with lower midline incision within 24 hours to 36 hours while with the grid-iron or lanz 3 to 4 days. The outcome of the surgery was 3 patients with grid-iron incision had wound breakdown and 2 had wound infection, while there was none with lower midline incision. The bowl sound with grid-iron incision took 2-3days to return, while it takes 24 hours to 36 hours to return with the

lower midline incision. The length of stay in the hospital took 7 days for patients with the lower midline incision and 8-15 days for patients with grid-iron or lenz incision. Length of stay in the hospital was significant between patients with lower midline incision and patients with grid-iron or lanz incision (P < 0.02). Therefore, there was significant difference in the length of stay in the hospital, in hospital cost, wound break down and wound infection between patients with lower midline incision and grid-iron or lanz incision (P<0.002). The first 6 months post operative period, 2 patients with grid-iron or lanz had incisional hernia while there was none with the lower midline incision. In the first one year post operative period, there was no complication recorded in both groups.

Table 1: Demographic data

Variable	Number	Percentage (%)	P < 0.05
Female	13/15	86.6%	< 0.002
Male	2/15	13.4%	< 0.002

Table 2: Surgical variables

Surgical variables	Midline incision	Grid-iron or lanz incision	P-value
Length of stay in the operating room	1hour 30minutes	2-3hours	
Time for bowl sounds to return	24-26	2-3days	< 0.002
1st 7 day post operative period	Nil	Wound break down in 3patients	< 0.001
1st 14 days post operative period	Nil	Wound infection in 2 patients	< 0.002
Length of stay in the hospital	7 days	8-15days	< 0.002
1st 6 months post operative period	Nil	2 patients had incisional hernia	
1st 1 year post operative period	Nil	nil	

V. DISCUSSION

No paper has been found comparing the surgical outcome between the lower midline incision and grid iron or lanz incision in appendectomy in the obese patients. From our observation and review, it was demonstrated that lower midline incision is superior to grid iron of lanz incision in appendectomy in the obese patients as measured by complication rate, wound infection, length of hospital stay, hospital cost and operative room time.

The only related approach used in the management of Acute appendicitis in the obese, mentioned in the literature was the one used by Saverlands et al 11, 12 Laparoscopic appendectomy which had a higher incidence of intra-abdominal abscess and in hospital cost when compared to open appendectomy of which lower midlines incision was one of them.

Fifty seven percent of the world's adult population is expected to be overweight or obese in 2030. This rapid and dramatical physical change will have an impact on the clinical evaluation of patients, also for common problems such as appendicitis. Therefore, we could recommend the lower midline incision approach as the best surgical approach in the management of acute appendicitis in the obese patients.

VI. LIMITATIONS

Our study is limited by the small sample of 15 obese patients in a single institution and been an only prospective observational study. Therefore, this study set a base for a more elaborate prospective study.

VII. RECOMMENDATIONS

From our study and review information, we could recommend the lower midline incision approach for the obese patients with acute appendicitis as a useful therapeutic approach especially in the rural hospitals like ours.

VIII. CONCLUSION

We confirmed that the surgical outcome in the obese patients with acute appendicitis was good when a lower midline incision was performed in the obese patients. Though, we have a small number of obese patients, we have shown that lower midline incision approach is a feasible procedure with good results in a rural hospital with moderate skills and limited resources like ours.

IX. REFERENCES

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