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Incidence of inguinal hernia post open appendectomy

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Abstract

The diagnosis of acute appendicitis is predominantly a clinical one; many patients present with a typical history and examination findings. The cause of acute appendicitis is unknown but is probably multifactorial; luminal obstruction and dietary and familial factors have all been suggested. Appendectomy is the treatment of choice and is increasingly done as a laparoscopic procedure. This article reviews the presentation, investigation, treatment, and complications of acute appendicitis and appendectomy. In this study we aim to calculate the incidence of inguinal hernia following open appendectomy from a tertiary care prospective.

Keywords: incidence, inguinal hernia, appendectomy, cross sectional.

Introduction

The diagnosis of acute appendicitis is predominantly a clinical one; many patients present with a typical history and examination findings. The cause of acute appendicitis is unknown but is probably multifactorial; luminal obstruction and dietary and familial factors have all been suggested. Appendectomy is the treatment of choice and is increasingly done as a laparoscopic procedure. This article reviews the presentation, investigation, treatment, and complications of acute appendicitis and appendectomy.

Appendix is a worm like tubular structure present in Right Iliac Fossa originating from Caecum. Although considered a vestigial organ in past, it has assumed importance of an organ with functions of immunity in today's era.^{[1],[2],[3],[4]} Acute appendicitis is the most common surgical emergency faced in today's world.^[5] Although laparoscopy has gained importance in the western world, open appendectomy still remains the most widely carried out operation as far as appendicitis is concerned.^[6]

Hernia is defined as the protrusion of an organ or the part of an organ through the body wall containing it. Inguinal Hernia is the most common type of hernia seen in surgical practice. It consists mainly of a direct and an indirect type. While indirect type has a congenital cause, direct hernias are attributable to weakness of abdominal musculature^[7]. It was Hogue, who in 1911 first demonstrated the association of drained appendectomy with inguinal Hernia. It was due to weakness of ilioinguinal and iliohypogastric nerves during open appendectomy as the cause of weakness of anterior abdominal wall musculature and hence inguinal hernia.^[8] In this study we aim to calculate the incidence of inguinal hernia following open appendectomy.

Aims and Objectives

To find the incidence of inguinal hernia following open appendectomy.

Materials and Methods

Sixty cases were studied in the Department of General Surgery, Kanachur Institute of Medical Sciences. They were followed and the incidence were reported.

This was an observational prospective observational study.

All those patients who visited our OPD and had a history of Open Appendectomy were included in the study. After a thorough history, a comprehensive physical examination was carried out in these patients to rule out any evidence of Inguinal Hernia. Baseline investigations like complete blood count, kidney function test, liver profile, chest and abdominal x-ray, ultrasonography were done, some of the patients in whom there was any suspicion of underlying pathology contrast

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enhanced CT abdomen and pelvis and colonoscopy was performed. The examination consisted of inspection, palpation, percussion and auscultation and included various tests such as Cough impulse, three finger test, etc. These findings were later confirmed with an ultrasound examination. The data was tabulated in form of tables and graphs.

Inclusion criteria:

All were operated cases

Exclusion Criteria

Patients on chemo or radio therapy.

All patients on immunodeficiency drugs and immunomodulators were not included for the study.

Results

Table 1: Sex Distribution:

| | |
|--------|----|
| Male | 49 |
| Female | 11 |

Table 2: Age distribution

| Mean age | Std deviation |
|-------------|---------------|
| 43.17 years | 05.61 years |

Total Incidence was 7 out of 60 cases

Table 3: Side of the hernia

| | |
|-------|---|
| Right | 6 |
| Left | 1 |

Table 4: Direct vs Indirect

| | |
|----------|---|
| Direct | 2 |
| Indirect | 5 |

Table 5: Complicated vs Uncomplicated

| | |
|---------------|---|
| Complicated | 1 |
| Uncomplicated | 6 |

Discussion

Appendectomy is a relatively safe procedure with a mortality rate for non-perforated appendicitis of 0.8 per 1000. The mortality and morbidity are related to the stage of disease and increase in cases of perforation; mortality after perforation is 5.1 per 1000. As stated above, the average rate of perforation at presentation is between 16% and 30%, but this is significantly increased in elderly people and young children, in whom the rate can be up to 97%, usually because of a delay in diagnosis.

The increased mortality and morbidity associated with perforation has been used as justification for high rates of negative appendectomy, quoted as between 20% and 25%. Despite this, complications can occur after removal of a normal appendix, and the surgical community continues to strive to reduce the numbers of negative procedures. According to a large historical cohort study, a perforated appendix during childhood does not seem to have a long term detrimental effect on subsequent female fertility.

Traditionally, open appendectomy has been done through a muscle splitting gridiron incision over McBurney's point made perpendicular to a line joining the umbilicus and anterior superior iliac spine or through a more cosmetically acceptable Lanz's incision. The proportion of open procedures done has fallen with the increased use of laparoscopic techniques. Compared with open surgery, a systematic review found that laparoscopic appendectomy in adults reduces wound

infections, postoperative pain, length of hospital stay, and time taken to return to work, although the number of intra-abdominal abscesses was higher after the laparoscopic approach. However, this view is not shared by a recent study, which found no significant differences between the two procedures except higher quality of life scores at two weeks in the laparoscopic group. In children, laparoscopic appendectomy reduced the number of wound infections and the length of hospital stay compared with open surgery, but no significant differences in postoperative pain, time to mobilisation, or proportion of intra-abdominal abscesses were seen.

Although in the light of these findings laparoscopic appendectomy is becoming more common, it is often technically more demanding and requires specialist equipment. As a result, the method of approach for appendectomy is dictated by the level of expertise of the operating surgeon and the facilities available. An added advantage of laparoscopic techniques is the ability to do diagnostic laparoscopy initially, which may show alternative pathology as the cause of the presentation.

Conclusion

Appendectomy is a relatively safe procedure with a mortality rate for non-perforated appendicitis. Disregard to follow surgical principles can cause havoc to patient's life both immediate and late.

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