Appendicectomies At The Hospital Center Of Libreville. A Prospective Study.

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Citation

D FK, D PS, K O, K I, G L, T AO, N R, O F. *Appendicectomies At The Hospital Center Of Libreville. A Prospective Study.*. The Internet Journal of Surgery. 2012 Volume 28 Number 2.

Abstract

Appendicitis is a common disease in which both diagnosis and treatment have seen important developments during the recent years [1]. In Africa, people are still dying of appendicitis because of delays in diagnosis and therapy. The aim of this prospective study was to analyze the clinical and paraclinical diagnostic aspects, therapeutic modalities, and the immediate postoperative aspects of acute appendicitis cases received at the Centre Hospitalier de Libreville (Gabon). Acute appendicitis is still managed at an advanced or complicated stage at the Centre Hospitalier de Libreville. In our practice, radiography of the abdomen without preparation and ultrasonography occupy a prominent place in the preoperative assessment. Complications, especially sepsis, are frequent. Reducing the time to management and more peri-operative care will contribute to improved results.

INTRODUCTION

Appendicitis is a common disease in which both diagnosis and treatment have seen important developments during the recent years [1]. In Africa, people are still dying of appendicitis because of delays in diagnosis and therapy. The aim of this prospective study was to analyze the clinical and paraclinical diagnostic aspects, therapeutic modalities, and the immediate postoperative aspects of acute appendicitis cases received at the Centre Hospitalier de Libreville (Gabon).

MATERIAL AND METHODS

We conducted a prospective study from January 2005 to January 2006. This study was monocentric, conducted in the department of general surgery and urology. Were included 150 patients who underwent an appendicectomy. The series included 56% (n = 84) women and 44% (n = 66) men. The average age was 24 years (range from 9 to 73 years). We diagnosed peritonitis in the presence of peritoneal effusion, abundant fluid, diffuse effusion, or purulent or sero-purulent collection. We collected data relevant to the time to admission, clinical presentation, paraclinical results, operative findings and immediate post-operative events. Data were stored and processed with Epi Info ™ 6. Their analysis was performed by simple comparison of means and percentages.

RESULTS

TIME TO ADMISSION

Eighty-one percent of patients (n = 121) were admitted after a period of 5 +/- 2 days of evolution.

CLINICAL PRESENTATION

The clinical signs are shown in Table I.

Figure 1

Table I: Clinical aspects

Signs	Number	Percentage (%)
Defence of the RIF	105	70
Temperature above 38°	94	63
Vomiting	82	55
Abdominal wall contracture	62	41
Painful DRE	38	25
Umbilical pain	30	20

RIF: Right Iliac Fossa
DRE: Digital Rectal Examination

Digital rectal examination was performed in 51% (n = 77) and was painful in 25% (n = 38) of cases. Forty-three percent of patients presented an advanced disease associated with hyperthermia, leukocytosis and abdominal contraction.

PARACLINICAL FINDINGS

Fifty-six percent (n = 85) of cases showed a leukocytosis above 10,000 WBC/mm3. Abdominal plain film X-ray performed in 78% (n = 117) of patients showed a diffuse grayness in 28% (n = 42) of cases, a sentinel loop in 18% (n = 27) and a pneumoperitoneum in 10% (n = 15). In 22% (n =

33) of patients, the plain film X-ray was not contributory. Ultrasound was performed in 15 patients and confirmed the diagnosis of appendicitis in 8 cases and peritonitis in 2 cases. For two patients with no contributory radiography and ultrasonography, computed tomography (CT) found mesoceliac appendicitis.

OPERATIVE DATA

Figure 2

Table II: Types of incision

Incision	Number	Percentage (%)
McBurney	86	57
Midline	34	23
Para-rectal	18	12
Jalaguier	12	8
Total	**150**	**100**

The choice of surgical approach was dictated by the clinical presentation and the surgeon's experience. Among cases of peritonitis, ten McBurney incisions were converted to a secondary midline approach. The mean operative time was 60 minutes (range from 30 to 180 minutes).

Figure 3

Table III: Anatomic characteristics

Location	Number	Percentage (%)
Iliac	96	64
Pelvic	37	24.67
Retrocaecal	15	10
Mesocoeliac	2	1.33
Total	**150**	**100**

The appendix was catarrhal in 52% (n = 79), abscessed in 21.33% (n = 32), perforated in 10.66% (n = 16) and presented a gangrene in 6% (n = 9) of cases. Ten percent (n = 14) were macroscopically normal appendices. In all cases of generalized peritonitis (48% - n = 72), a large drainage was performed. This drainage was limited to the right iliac fossa in case of localized suppuration (52% - n = 78). All patients received an intravenous antibiotic treatment during surgery with 2g of ampicillin, 500mg of metronidazol and 160 mg of gentamicin. This antibiotic therapy was continued at least 5 days after surgery. In case of simple appendicitis, the protocol was as follows: ampicillin 2g x 3/day and metronidazol 500mg x 3/day. In case of proven peritonitis, it was either clavulanic acid 2g x 3/day and metronidazol 500mg x 3/day) or ampicillin 2g x 3/day, 160 mg gentamicin/day and metronidazole 500mg x 3/day).

POSTOPERATIVE FEATURES

In the immediate postoperative period, patients with generalized peritonitis were transferred to the intensive care unit where they stayed 5-6 days on an average. The others returned to the surgery department where the average length of hospital stay was 8 days (range from 3 to 35 days). We recorded 16% (n = 24) complications: parietal suppuration (n = 10), stercoral fistulas (n = 5), postoperative peritonitis (n = 3), evisceration (n = 3) and intestinal obstruction (n = 3). Six re-interventions were necessary: 3 cases of evisceration and 3 cases of postoperative peritonitis. Three patients (2%) died; they all presented a postoperative peritonitis complicated by septic shock.

DISCUSSION

Appendectomy is the most common procedure in abdominal emergency surgery at the Centre Hospitalier de Libreville. It accounts for 181 (65%) cases of the 278 non-traumatic acute abdomens in this hospital. This figure is relatively high compared to those found in other studies [2, 3]. The time to admission is long, but comparable to the average in most series [2-5].

Clinically, the presentation combines several signs of which the common ones are pain and/or a defense of the RIF, vomiting, fever above 38°C and leukocytosis exceeding 10,000 GB/mm3. Advanced types combining the last two signs and abdominal contraction were found in 43% (n = 65) of patients, and were specific to our areas of Africa as highlighted by some authors [5-7]. The high number of appendices in an abnormal position explains the difficulties of clinical diagnosis and motivates the realization of further investigations.

The choice of this additional review is variously appreciated. For some authors, the findings of plain film X-ray is exceptionally specific or even useless [3, 7]. Like for Ngowe et al., it allowed us the detection of suggestive signs in 56% of cases [4]. Ultrasonography visualizes not only the appendix but also inflammatory abnormalities of the right iliac fossa, which makes it so reliable for positive and differential diagnosis of acute appendicitis. In experienced hands, the sensitivity and specificity were 85 and 92%, respectively [8]. In our series, as in that of Harouna et al., it was very contributory [3]. Because of the numerous disadvantages of CT scan (cost, radiation, duration and possible allergic reaction), Montali et al. suggest that it is not performed routinely but reserved for some selected patients [1]. On the hand, some authors recommend its routine use to reduce unnecessary appendicectomies and the costs related to suspected appendicitis [8]. Unlike some series where CT scan was not used, we used it in 2 of our patients [3, 4].

Although laparoscopy is gaining interest in our areas of

Africa, it remains at a preliminary stage in Libreville. It was not used in this study. It would, however, have been a valuable contribution in the differential diagnosis, given the large number of young women involved in our study population. In their series, Farthouat et al. found benefits only for laparoscopy [7]. For other authors, diagnostic laparoscopy has proven advantages. However, because of significant morbidity, therapeutic laparoscopy is slow in establishing itself as it did for cholecystectomy [1, 11].

The frequency of advanced cases with peritonitis in our series explains the large number (43% - n = 64) of patients undergoing a non-elective approach (midline, pararectal). The high percentage of necrotic or abscessed appendix found in the exploration (38% - n = 57) influenced the choice of surgical approach. In the series of Ngowe et al., 71% of patients were approached by a McBurney incision [4]. This suggests that there were few advanced cases in this series. However, the lack of parallelism in anatomico-clinical disease cannot allow making conclusions. Anatomically, in our study, the classical location of the appendix at the right iliac fossa was predominant. Unlike in other studies, we have noted no Meckel's diverticulum or sub-hepatic appendix [3, 4, 7].

In the literature, the proportion of macroscopically normal appendices found at surgical exploration varies from 12.7 to 28.7% [2, 5, 6]. We believe that the 10% rate found in our series is related to gynecological conditions such as adnexitis and/or torsion of ovarian cysts. These conditions have indeed been found in 38 (n = 32) of 76% of women of childbearing age of our series. This point is emphasized by other authors who believe that diagnostic errors are more common in women of childbearing age [9, 11].

According to Mehinto et al., postoperatively, appendectomy can be complicated even if the diagnosis and the appendicectomy were easy [10]. In the different series studied, the morbidity rate varies between 3 and 46%, marked mainly by parietal and/or intra-abdominal sepsis. In Africa, most authors attributed these complications to long time to referral and the use of traditional medicine [3-6]. This morbidity remains high compared to that observed in Western countries. For us, like other authors, the rigor and precision of a surgical procedure can reduce this morbidity [7, 11]. We recorded a mortality rate of 2%, within the range of the series studied, which varies from 0.6 to 4% [2-6].

Deaths attributable to surgical complications could have been prevented by a better management, including a shorter time to admission and the rigor and accuracy in achieving the surgical procedures.

CONCLUSION

Acute appendicitis is still managed at an advanced or complicated stage at the Centre Hospitalier de Libreville. In our practice, radiography of the abdomen without preparation and ultrasonography occupy a prominent place in the preoperative assessment. Complications, especially sepsis, are frequent. Reducing the time to management and more peri-operative care will contribute to improved results.

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