

DETERMINATION OF PREVALENCE OF SURGICAL FINDINGS IN PATIENTS WITH APPENDICITIS

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Abstract - The goal of this prospective study was to determine the prevalence of certain surgical findings in Iranian patients with appendicitis in one of our surgical centers, including: position of the appendix, rate of true appendicitis, perforation, and peritonitis. Duplication was observed in 4%, surface exudate in 52%, gangrenous necrosis in 27%, swelling in 79%, appendix in the left lower quadrant in 2%, and mucocoele in 2% of the cases.

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Key words: prevalence, surgical finding, appendicitis.

INTRODUCTION

The cultural and geographical status(1) of Iran and special traditions have a direct effect on the nutrition styles of Iranians. The nutritional status may have many effects on the pattern of diseases(2). Epidemiologic studies from all over the world have reported an incidence rate of 0.9 - 1.9 cases of appendicitis in 1000 people (3-5). As no epidemiologic study has been conducted in Iran, we used these rates for our calculations. There is a tendency to report an anecdotal 20% false positive diagnosis of appendicitis in Iranian clinics. By decreasing the rate of false positive diagnosis to 7% (6-9), the number of surgery each year would be decrease by a number as high as 2500. Accurate diagnosis can reduce surgical complications(10, 11). As part of an extensive investigation on clinical and non-clinical findings in appendicitis, this study covers only the surgical findings.

MATERIALS AND METHODS

We report findings from patients with acute

abdomen who were finally operated on and had a pathological diagnosis that warrants the term appendicitis. We observed the patients admitted to our department with acute abdominal pain. The findings at the time of admission, before laparotomy, after laparotomy, along with radiological and pathological findings were recorded. In this paper we also report the findings of surgeons during the surgery (Table 1).

Table 1. Surgeon's reports of surgical findings during operations

| | Variable | n | Yes% | NO% | Undet% |
|----|--------------------------------|----|------|-----|--------|
| 1 | McBurney surface marking | 53 | 85 | 11 | 4 |
| 2 | Patches of serosal hyperemia | 56 | 77 | 21 | 2 |
| 3 | Exudate | 56 | 52 | 48 | 0 |
| 4 | Swelling | 56 | 79 | 21 | 0 |
| 6 | Empyema | 56 | 11 | 89 | 0 |
| 7 | Mucocoele | 56 | 2 | 98 | 0 |
| 8 | Patches of gangrenous necrosis | 56 | 27 | 73 | 0 |
| 9 | Hemorrhage in external | 56 | 12 | 88 | 0 |
| 10 | Twisted by fibrous bands | 55 | 22 | 78 | 0 |
| 11 | Fixed by fibrous bands | 55 | 27 | 73 | 0 |
| 12 | Perforation | 56 | 23 | 77 | 0 |

A questionnaire coined as After Laparotomy Patient Evaluation (ALPE), having three portions as under was used collect data of surgical patients.

- 1- Six questions related to the anatomy of appendix (If there was more than one appendix we accounted each one separately).
- 2- Ten questions related to the gross appearance of appendix and observation of appendix after amputation.
- 3- (a) Nine questions related to the complications during surgery.
(b) Two questions related to the diagnosis of

appendicitis according to the surgeon's point of view.

- (c) Two questions related to the presence of perforation, its site and complications.
- (d) Three questions related to abscess formation.
- (e) One question about peritoneal pseudo - myxoma

The Inclusion Criteria

- 1- Admission in the Sina Hospital.
- 2- Acute abdominal pain at least 6 hours before admission.
- 3- Agreement of the case for cooperation with the research section.

The Exclusion Criteria

- 1- Abandonment of treatment by the patient.
- 2- Presence of an authenticated evidence which rules out the involvement of appendix.

RESULTS

(1): Anatomic Findings

In this part, in 2 cases out of the total 57 records, there was no pathological diagnosis. Among the other 55 cases, in 2 cases we saw 2 appendices, in one case the surgeons reported the appendix in left lower quadrant. The position of appendix was paracolic in 8, retrocolic or retrocaecal in 32, pericaecal in 8 and pelvic in 4 cases.

(2): Gross Appearance

The surgeons reported slight exudate in 52%, serosal hyperemia in 77%, swelling in 79%, fragmentation of appendix in 11%, mucocele in one case, empyema in 11% and gangrenous necrosis in 27%. Twenty two percent of the appendices were twisted by fibrous band. Our center surgeons reported 13 cases (22%) of perforation, 15% of the latter were reported as mesenteric and 56% in antimesenteric position, the other cases however were not detected.

Perforation in the proximal two third and distal one third found in 47 and 23% of cases respectively. In cases of perforation, there was localized abscesses in 2 cases, and generalized peritoneal contamination in 3 cases. Other complications were found in 7 cases including 3 cases with undetermined diagnosis. Our pathologists, however, reported gangrenous appendicitis in 19%, perforation in 24%, and other findings in 40% of cases; 17% of the cases being undetermined.

DISCUSSION

We found duplication of appendix in 2 cases during appendectomy and slight surface exudate in 52%, fragmentation in 11%, gangrenous necrosis in 27%, and swelling in 79%. The most common form was cathartic appendicitis. This is in agreement with the literature on this subject. Also we saw perforation in 22%, commonly in the anti - mesenteric position. In 6% of cases, the surgeons excised the appendix through McBurney's incision with a non appendicitis diagnosis but the pathology report was appendicitis or congested appendix. We can see that surgical diagnosis has a high rate of false negative and we suggest appendectomy in all McBurney's incisions and suspicious cases.

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