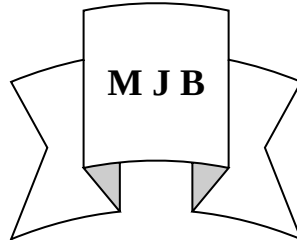


The Effectiveness of Right Iliac Fossa Ileus AS A Helpful Clinical Finding in Acute Appendicitis

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Abstract

The diagnosis of appendicitis is still based primarily on the patients history and the physical examination, accurate diagnosis reduce the risk of perforation and prevent complication.

Ileus is a sign which can be diagnosed by inspection as distention in the right iliac fossa and by palpation as a gurgle (functional obstruction) and confirmed by radiological examination.

The aim of this study is to evaluate the ileus in patients presented with acute appendicitis and its correlation with the pathology of acute appendicitis.

This is a prospective study done on (100) patients with clinical diagnosis of acute appendicitis.

Fifty patients with ileus (Group A) and Fifty patients without ileus (Group B) were interviewed, examined, investigated and operated on.

In group (A) perforated appendix was found in 10%, while in group (B) it was 16% with a range of 13% in our study.

four patients 8% had normal appendix while in group (B) severe inflammation found in 50%, mild inflammation found in 40% and five patients 10% had normal appendix.

Thirty patients 60% of those with ileus in the right iliac fossa presented late after 24 hrs and sixteen patients 32% presented within 24 hrs from beginning of pain in the right iliac fossa.

The sensitivity and specificity of ileus is 50.05%, 55.5% respectively, in comparison with other symptoms and signs which help in the diagnosis of acute appendicitis.

From this study we conclude that ileus is a helpful sign in the diagnosis of acute appendicitis, especially in cases presented late after (24) hours with mild inflammation of the appendix, but this finding need to be studied more thoroughly and on a larger number of cases in the future.

الخلاصة

أن تشخيص الزائدة الدودية لا زال مبني أساساً على التاريخ المرضي والفحص السريري، حيث أن التشخيص الدقيق يقلل خطر انفجار الزائدة الدودية وحدوث اختلاجات مرضيه.

أن القرقرة هي إحدى علامات التهاب الزائدة الدودية ويمكن تشخيصها كارتفاع في الجهة اليمنى السفلى من البطن أو بتحسس قرقرة في نفس المنطقة وإثباتها بواسطة الرقائق الإشعاعية.

الغاية من هذه الدراسة لتقييم القرقرة في المرضى الذين يعانون من التهاب الزائدة الدودية وعلاقتها مع طبيعة التهاب الزائدة الدودية.

هذه الدراسة التقييمية أجريت على مائة مريض يعانون من التهاب الزائدة الدودية وقد أجريت لتقييم القرقرة في الجهة اليمنى من أسفل البطن. خمسون مريض (المجموعة أ) توجد لديهم قرقرة والخمسون الآخرون (مجموعة ب) ليست لديهم هذه العلامة، جميع هؤلاء المرضى تمت مقابلتهم وفحصهم وأجراء الفحوصات المختبرية ثم العمليات الجراحية لهم. عدد حالات انفجار الزائدة الدودية في المجموعة أ كان ١٠% بينما في المجموعة ب ١٦% مع معدل ١٣% في هذه الدراسة.

في المجموعة أ كان التهاب الزائدة شديد في ٣٦% من الحالات وبسيط في ٥٦% وأربعة مرضى ٨% كانت الزائدة غير ملتهبة، أما المجموعة ب فكان الالتهاب شديد في ٥٠% وبسيط في ٤٠% وخمسة مرضى ١٠% كانت الزائدة غير ملتهبة.

ثلاثون مريض من هؤلاء الذين لديهم قرقرة في الجهة اليمنى من أسفل البطن ٦٠% كانت مراجعتهم متأخرة بعد أربعة وعشرون ساعة

من بداية الأعراض بينما ستة عشر مريض ٣٢% راجعوا خلال أربعة وعشرون ساعة من ابتداء الأعراض. الحساسية والخصوصية لهذه العلامة بالمقارنة مع العلامات الأخرى المستخدمة لتشخيص التهاب الزائدة الدودية كانت ٥٥,٠٥ و ٥٥,٥٥ على التوالي .
من هذه الدراسة نستنتج أن القرقرة في الجهة اليمنى من أسفل البطن هي علامة مساعدة لتشخيص التهاب الزائدة الدودية خاصة للحالات التي تراجع متأخرة بعد أربعة وعشرون ساعة من بداية الأعراض ويكون الالتهاب من النوع البسيط ، لكن هذه النتائج تحتاج إلى دراسة على عدد اكبر من الحالات في المستقبل .

Introduction

Appendicitis is the most common cause of acute surgical condition of the abdomen, approximately seven percent of the population will have appendicitis in their life time [1-2].

Despite technologic advances, the diagnosis of appendicitis is still based primarily on the patient's history and the physical examination ,accurate diagnosis reduce the risk of perforation and prevent complication .The mortality rate in imperforated appendicitis is less than one percent ,but may increase to five percent in children and elderly patients[3-5].

The limited but real morbidity associated with the removal of a normal appendix and the necessity of post operative hospitalization have stimulated surgeons to develop techniques which would decrease the number of negative explorations without increasing the incidence of perforated appendix . [6-7]

Several authors now made a period of intensive observation as a method of increasing diagnostic accuracy, others have devised scoring systems to the various symptoms and signs of acute appendicitis . [8-9-10]

In retrocaecal appendicitis rigidity is often absent and even deep pressure tenderness may be lacking (silent appendix), the reason being that, caecum distended with gas prevents the pressure exerted by the hand from reaching the inflamed structure and ileus may even be elicited [11-12].

The aim of this study is to evaluate the ileus in patients presented with right iliac fossa pain and it's

correlation with the pathology of acute appendicitis.

Patients and Methods

This is a prospective study done for (100) patients admitted to surgical wards with provisional diagnosis of acute appendicitis in Basrah general hospital from Jan. 2001 to July 2002.

Patients were interviewed, examined, investigated, operated on and followed up by the same surgeon. Fifty patients with ileus (group A) and fifty patients without ileus (group B) involved in this study.

Those patients with ileus can be diagnosed by palpating gurgling in the right iliac fossa and confirmed radiologically by supine plain abdominal x ray when available while those without ileus doesn't have this physical sign .

So the parameters that we depend on to reach the diagnosis of ileus were the physical examination (palpation) and supine plain abdominal x ray when available.

The age, sex, presenting symptoms, duration, physical finding and operative notes of both groups of patients were introduced into a proforma data sheet.

Although plain x ray of the abdomen in erect position is important but only twenty-one patients of group A and seventeen patients of group B were subjected to x – ray according to hospital circumstances and limitation of x – ray films.

All appendices after surgery were longitudinally bisected and examined throughly and macroscopically.

The inflammation was classified into mild (superficial ulceration of the mucosa , part or whole of the organ swollen and serosal surface shows patches of hyperemia) and severe (increased swelling , serosal vessels are congested , serosa lost its normal shininess or covered by fibro purulent exudates , the wall oedematous , lumen contain pus and mucosa shows areas of haemorrhage and ulceration).

Results

Total of (100) patients with right iliac fossa pain were included in this study ,
Fifty patients had ileus (group A) and Fifty patients without ileus (group B) for comparison.

Table (1) Shows age and sex distribution. In group (A) patients Twenty-seven male (54%) and twenty three female (46 %) with male to female ratio 1.1 : 1 . In group (B) patients twenty-five male (50%) and twenty-five female (50%) with male to female ratio 1 : 1. The age of patients for both groups ranged from seven to fifty-two years with an average of (20.8) years.

Table (2) Shows the incidence of perforated appendicitis . in group (A) patients was 10% while in group (B) was 16% .

Table (3) Shows severity of inflammation , in group A patients the operative findings was classified *macroscopically* into severe

inflammation in eighteen (36%) and mild inflammation in twenty eight (56%) patients and four (8%) had normal appendices, while in group B patients severe inflammation found in twenty –five (50%) , mild inflammation in twenty patients (40%) and five patients (10%) had normal appendices.

The severity of the inflammation was correlated with the duration of presenting symptoms . In group(A) thirty patients 60% presented with duration more than 24 hours while only sixteen 32% presented earlier with duration less than 24 hours .In group (B) patients twenty-five presented early before 24 hours while twenty patients presented late after 24 hours.

Four normal appendices found in group A, three of them are females, two of them had salpingitis and one child has mesenteric lymphadenitis , one male patient with Meckel's diverticulitis.

Table(4) Shows the validity of ileus , ileus is a functional obstruction associated with decrease bowel sounds which can be diagnosed by palpation as a gurgle and confirmed radiologically by supine plain x ray of the abdomen . In comparison with other symptoms and signs helpful in the diagnosis of acute appendicitis as shown in the table no 5, the sensitivity is 0.50 and specificity is 0.55 of ileus in the right iliac fossa .

Table 1 Age & sex distribution for group A & group B

Age (years)	No. of patient				Sex			
					male		female	
	A	%	B	%	A	B	A	B
1-10	2	4	3	6	1	2	1	1
11-20	25	50	23	46	16	13	9	10
21-30	14	28	13	26	6	6	8	7
31-40	6	12	7	14	2	3	4	4
41-50	2	4	2	4	1	-	1	2
51-60	1	2	2	4	1	1	-	1
Total	50	100	50	100	27	25	23	25

Table 2 incidence of complicated appendicitis in different age groups

Age (years)	No. of patients		Perforated appendix			
	A	B	A		B	
			No	%	No	%
1-10	2	3	-	-	1	3
11-20	25	23	1	2	2	4
21-30	14	13	2	4	2	4
31-40	6	7	1	2	-	-
41-50	2	2	1	2	-	-
51-60	1	2	-	-	3	6
Total	50	50	5	10	8	16

Table 3 Severity of inflammation in relation to the duration of the presenting symptoms

Pathology	No. of patients				Duration of symptoms			
	A		B		Early < 24		Late > 24	
	No	%	No	%	A	B	A	B
Severe	18	36	25	50	11	15	7	10
Mild	28	56	20	40	5	10	23	10
Normal	4	8	5	10				
Total	50	100	50	100	16	25	30	20

Table 4 Validity of ileus

operation results

	+ve	-ve	Total
group(A) ileus	46	4	50
Group(B)not ileus	45	5	50
Total	91	9	

Ileus in the right iliac fossa

$$\text{sensitivity} = \frac{46}{91} \times 100 = 50.05\%$$

$$\text{specificity} = \frac{5}{9} \times 100 = 55.5\%$$

Table 5 likelihood ratio for symptoms and signs of acute appendicitis

Procedure	Sensitivity	specificity
Right lower quadrant pain	0.81	0.53
Rigidity	0.27	0.85
Migration	0.64	0.82
Pain before vomiting	1.00	0.64
Psoas sign	0.16	0.95
Fever	0.79	0.97
Rebound tenderness test	0.63	0.69
Guarding	0.74	0.57
No similar pain previously	0.81	0.57
Rectal tenderness	0.41	0.77
Anorexia	0.68	0.36
Nausea	0.58	0.37
Vomiting	0.51	0.45
Ileus	0.50	0.55

Discussion

The morbidity and mortality of appendicitis remain significant even with advent of antibiotics and effective surgical management. [13-14]

Despite recent general advances in the diagnostic modalities , there is no ideal technique for the diagnosis of acute appendicitis and routine history and physical examination remain the most effective and practical diagnostic methods .[15]

In our study there is no difference in the mean age and age distribution between group A and group B patients, the median age 20.8 years is lower than that reported in other series, [16-17], this may be due to the age structure of our community in which the percent of the aged population is low.

Appendicitis was prevalent in the age group (11-30) years with lower incidence rate in the children and old aged patients, these results confirmed by previous reports which found that the amount of lymphoid tissue in the appendix parallels the incidence of acute appendicitis, the peak for both occurring in the early teens . [18-19]

The low incidence of perforation in our patients 13% can be explained by the fact that perforation in acute appendicitis is clearly more common in elderly people and children [20- 21] the percentage of both these age groups is low in our study, as well as the more accurate diagnosis depending on detailed history and précised physical examination .

Although perforated appendix is more in group B, the absences of

ileus may be explained by the early presentation because of more acute symptoms and signs.

Retrocaecal appendix is the commonst site in both groups, the retrocaecal position is found in most of the patients with mild inflammation mask the classical clinical features of acute appendicitis, leading to equivocal presentation and late diagnosis.

The ileus in patients with acute appendicitis is a late sign when the inflammation is mild but on the other hand ileus can be felt earlier when the inflammation is severe, the hot symptoms and signs of perforated and gangrenous appendix bring the patient earlier to the hospital and the guarding may prevent palpation of ileus, this may explain way in table 3 twenty-five patients had severe inflammation macroscopically, fifteen of them present early within twenty-four hours and ileus could not be felt.

Seven out of eighteen patients with severe inflammation, and twenty three out of twenty eight with mild inflammation had late presentation (more than 24 hours), but clinical observation and analysis of data in table 3 showed that patients with severe or mild inflammation needed long duration to develop ileus.

Table(4) shows the sensitivity and specificity of ileus in the right iliac fossa in patients with acute appendicitis, so ileus is a helpful sign in diagnosis of acute appendicitis especially cases with mild inflammation and late presentation, but this finding need s to be studied more thoroughly and on a larger number of cases in the future.

Conclusions

1- The presence of ileus in the right iliac fossa depends mainly on the duration of symptoms (more than 24 hours) and severity of inflammation.

2- In equivocal cases the presence of ileus in the right iliac fossa can be utilized as a helpful clinical finding for acute appendicitis correlated with other symptoms and signs as it has low sensitivity and specificity especially in patients presented late after (24) hours and have mildly inflamed appendix.

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