# Do Antibiotics have a Role in the Conservative Management of Appendix Mass?

**Dhafir Dawood Sulieman**, Ali Batarfi*, Abdullah Salman Dalol***


## ABSTRACT:

**BACKGROUND:**

Management of acute appendicitis is strictly surgical but acute appendicitis presented as appendix mass could be treated in different ways including using antibiotic treatment regime but these options remains controversial. The aim of this study was to evaluate the role of antibiotic in the conservative management of appendix mass.

**METHODS:**

The medical records of 1051 patients diagnosed as acute appendicitis at two different teaching hospitals in in Yemen, have been reviewed for the purpose of this study. 516 cases collected from Kuwait University Hospital,(K.U.H.) Sanu'a (between Jan 2005 to Dec 2007 ) and 535 cases collected from Ibn Sina Teaching Hospital ,(ISTH). Mukalla, (between Jan 2007 to Dec 2007). It has been found that 893 cases had urgent operation, and 98 patients diagnosed as suspected non obstructive acute appendicitis and got recovered completely with conservative treatment. On the other hand 60 cases, (5.7%), presented with appendix mass, and have been treated conservatively by distributing them randomly into two selected groups, group A treated with rest + antibiotic, group B treated with rest only and results analyzed prospectively

**RESULTS:**

The 35 appendix mass cases treated at K.U.H, represent (7.5%) ,cases distributed as Group A, had an average hospital stay of Sdays ( ranging from3-7), while group B, had stayed an average of 6.5 days (ranging from3-ll). 25 appendix, mass cases

represent 5.1% at I.S.T.H. Group A. had an average hospital stay of 5.5 days(3-8) ,while group B, had an average of 8 days (3-20). the proportion of appendix mass presented with pyrexia in both groups were 41.6%.

Complications: two cases reported at I.S.T.H with signs &symptoms of recurrent sub acute appendicitis and palpable residual appendix mass, both from group A, refused operation and were treated conservatively with the same regime (antibiotics+ rest) signs and symptoms subsided in few days & discharged. Other complications such as abscess formation or spreading peritonitis were absent.

Interval appendicectomy; all patients were advised to come back in 6 weeks for elective appendicectomy. 6 cases reported at K.U.H, and only 2 at I.S.T.H. All were free from signs & symptoms and they had operation

**CONCLUSION:**

Conservative treatment for appendix mass is effective and safe, antibiotic, might shorten the resolution time but not essential. Complications is only 3% and represented by recurrent sub acute appendicitis, which responded to conservative treatment. Interval appendicectomy is probably unnecessary and should be reserved for cases with recurrent of signs and symptoms only


***KEY WORDS:*** appendix mass, appendicitis, interval appendecectomy, conservative treatment

## INTRODUCTION:

The risk of developing acute appendicitis for adults is 0.04 %. Etiology of acute appendicitis is obstructive in nature and in 60% is due to hypertrophy of lymphoid tissue within the appendix, in 35% due to faecolith [1]. 50% of cases of angrenous or perforated appendix are associated with faecoliths . 20% of patients with acute appendicitis have perforation at the time of operation (while in children below 5 years and adults above 60 years .the rate of perforation is 60%). since the second half of the past century , there was a trend of continuous fall in the incidence of appendicitis ,but no reason for this decline in the incidence has been identified, [2].the incidence is

*Ibn-Sina Teaching Hospital/Medical College/Hadhramout University. Al-Mukala Yemen.

**Kuwait University Hospital/ Sana'a University. Sana'a Yemen

maximum in the 2-3 decade .The sex distribution male/female is 1:1 before puberty, between 15-25 year male ratio increase and male/female ratio approach 2/1, after that the male ratio decline until equalize. Clinical presentation is not always typical, 30% of patients do not experience shift of pain. 20% of patients will also have diarrhea particularly when appendix is pelvic type. Nausea and vomiting is common and anorexia is inevitable. 50% will have furred tongue and fetor oris . Management of appendix mass traditionally differ between adults and children, in children conservative treatment could be better with shorter hospital stay, but carry a high risk of recurrence , early surgical treatment also carry high risk of complication[3], nearly all surgeons favors prompt operation for all categories in children , and interval appendicectomy after conservative treatment is recommended ,while in adults conservative treatment is safe and better, and interval appedicectomy as a routine procedure is not a necessity[4] and should be reserved for cases who present with recurrence of sign and symptoms of acute or sub acute appendicitis. This remain the most common approach worldwide .However a number of studies has challenged this [2,5,6,7,8 ].This paper study the role of antibiotics in the conservative management of appendix mass and its consequences in Yemen in both children and adults .

## METHOD:

All patients with acute appendicitis presented to K.U.H in Sanna,Yemen ( from Jan 2005 to Dec 2007)and ISTH in Mukalla,Yemen ( from Jan 2007 to Dec 2007), were studied ,the clinical presentation of these patients were in three distinct groups;Table (1) 1 - Cases that needed immediate surgery

2-Cases that presented with less acute symptoms and signs (Alvarado score less than 6 )and suspected of having non-obstructive appendicitis and recovered completely with conservative treatment.

3- Cases of appendix mass, these were studied prospectively to assess the role of antibiotics in the conservative management of appendix mass while group 1&2 were studied retrospectively.

A total of 1051 patients presented as acute appendicitis ,group 1 (893)patients who had immediate appendicectomy, (434 from K.H.U,459 from I.S.T.H.), group 2 (98) patients .47 from KUH,51 from I.S.T.H. diagnosed as suspected unobstructed acute appendicitis who recovered completely with conservative treatment, group 3 ,( 60) patients of appendix mass ( 35 from KUH.25 from I.S.T.H.). Were treated conservatively in two randomly selected groups, group (A), treated with NPO, I.V fluid + antibiotics (cefuroxime + metronidazole ),group (B), was treated with rest, ymptomatic treatment and observation only .the results of the treatment and complications were analyzed prospectively Criteria for assessment were the 1- Average time for recovery and subsidence of pyrexia, tachycardia and pain. 2- Clinical and U/S evidence of resolution.of the mass 3- CT scan to exclude other pathology. 4- Recurrence of acute appendicitis with or without mass, and other complication..

## RESULTS:

Number of appendix mass cases at ISTH was 25 cases, represent (5.45%) (Female 137 male 12.), average distribution of appendix mass by age, were (7-<10 years) was 5, (10-20 years) was 15 , and > 20 years was 5 cases .The youngest was 7 year. Number of appendix mass at K.U.H. were 35 cases, represent (7.5%), (female 14, Male 21), distribution of appendix mass by age were, (5-<10 years) was7, (10-20 years) was21, and (> 20 year) was 7.The youngest was 5 year. Frequency distribution of groups A and B in both hospitals, by sex and age is shown in table (2). Average number of cases presented with pyrexia in both group was 41.6%, Average duration of symptoms and signs for both groups at K.U.H. was 5.2 days (3-8 days), while in I.S.T.H. was 5.41.days (3-7 days) average 5.3 days for both. The average duration of sign and symptoms of operated cases on the other hand were 2.25 days at K.U.H. and 3.2days at I.S.T.H.(average 2.7 days for both). Table (3).

Average hospital stay for group A 5.5 days (3-8 days), and group B was Sdays (3-20 days). .All cases responded successfully to the conservative treatment, and were advised to report in 6 week for interval appendicectomy, unless they have acute symptoms, only 6 cases were reported at K.U.H, and 2 cases at I.S.T.H . All were free of symptoms and signs and were operated on. Complications of treatment of appendix mass, only 2 cases from group A who received antibiotics in I.S.T.H and presented with symptoms and signs of acute appendicitis .and palpable mass, one female return after three weeks and one male after four weeks, both refused operation and were treated conservatively with quick recovery . There were no cases of generalized peritonitis or abscess formation. Table (4).

Improvement in symptoms and signs occurred quickly in the first few days, but the mass usually took longer (few weeks) to resolve completely.

Operated cases at K.U.H were 434. Sex distribution F/M 58.% / 42 %. Age distribution; most cases 409 (15-30 years). 23 cases, (5- <15 years), 2 cases were 55&60 years, Average duration of symptoms & signs was 2.25 days (10 hour - 4day). Average hospital stay 3days. Operated cases at I.S.T.H. were 459 cases, sex distribution F/M 36%:64%. age distribution, most cases 429, (15-45 years).30 cases,( 5- <15year), Average duration of signs & symptoms 3.2 days (1-Sdays ).Average hospital stay 5 days. Cases suspected of having appendicitis with less than 6 on Alvarado scale treated conservatively, total 98, at K.U.H 47 cases F/M 37/10. Average hospital stays 1.5 days. At I.S.T.H. 51 cases M/F 35/16. Average hospital stays 2days
Sex distribution in the I.S.T.H. of operated cases (M/F 1.77/1), follow the known distribution where M/F ratio, approach near 2/1 at the K.U.H data which is different from the result of I.S.T.H and M/F is 0.7/1, No reason for this difference has been identified .Table (5)

## DISCUSSION:

Appendix mass ( phlegmons),is omentum wrapped around inflamed appendix. If there is fever and high WBC and U/S .evidence of abscess then percutaneous drainage is indicated, otherwise appendix mass treated conservatively. 15% will develop recurrent appendicitis after conservative treatment of appendix mass. Appendix mass usually develons in about 5-8% and usually develops quickly ( in the first few days), it represents a protective mechanism to localize the inflammation and it either took the form of phlegmon or there is loculi of pus around the perforated appendix or less common a single abscess within the mass. It is rare in very young, probably because of the configuration of the appendix at this age, in our study the youngest were 5 and 7 years,

Pathogensis and prognosis: During the several hours between acute appendicitis and rupture nature walling off process is able to quarantine the inflammation in about 95% and confine the spill to perappendicular area and a phelgmons is produced which consist of a mass of inflamed mottled intestine and omentum with little or no discrete collection of pus. This process will slowly resolve. In some patients a progressive process produced an expanding collection of pus contained by walling off process and perappenduclar abscess will develop .if the walling off process has not been completed by the time appendicecal rupture occurs, contamination spread beyond R.I.F.

Management of appendicular mass:

A.J Ochsner in 1901 advocate expectation treatment for ruptured appendicitis with frank perappendicecal abscess formation [9], this consist of, starvation +N/G tube and l.V fluid +close observation ,(no antibiotics).if abscess increased ,this will need drainage [10,1 l],if improved continue the conservative treatment Currently appendix mass could be treated in several ways [12,13,14,15], early surgery , surgery after initial resolution ( within 1/52) surgery after conservative treatment and entirely conservative approach although non was universally accepted [16,17,18].

Advocate of entirely conservative management describe the advantage that appendicectomy whether immediate or interval is unnecessary [13,14.15,16,17,18] .While advocates of immediate appendicectomy describe the advantage of avoiding the need for interval appendicectomy and the exclusion of other pathologies [19,20,9,21].

Advocate of interval appendicectomy describe the advantage of avoiding recurrence of symptoms and the misdiagnosis of an appendix mass Conservative treatment however could follow either of the following:

1- Modified Ochsner sherin protocol
Rest + NG tube + l.V fluid +broad spectrum antibiotics

2- Rest + observation only, allowing natural protective mechanism to follow its course, since the body have already localized and walled off the inflamed appendix. The aim of this study is to evaluate the role of antibiotics in the conservative management of appendix mass.

The result obtained suggest that antibiotics has little role in the conservative management of appendicular mass and might be unnecessary.

Interval appendectomy: All patients were advised for interval appendectomy about 6-12 weeks after the recovery, only few returned (Spatients), all were free of symptoms and signs of recurrence. The reason for the non compliance is probably the absence of any symptoms, and those patients had decided for themselves that surgical treatment is unnecessary. This observation is common in many other Middle East country (personal correspondence) and probably interval appendectomy should be confined to cases who actually develops recurrence, the advocates of interval appendicectomy is avoidance of recurrence and misdiagnosis of appendix mass, recurrence in this trial were rare and CT scan can exclude other pathology

## CONCLUSION:

Conservative treatment for appendix mass is effective and safe, antibiotic, might shorten the resolution time but not essential. Complications is

only 3% and represented by recurrent sub acute appendicitis, which responded to conservative treatment. Interval appendicectomy is probably unnecessary and should be reserved for cases with recurrent of signs and symptoms only and in conclusion appendicectomy for appendicular mass, whether immediate or interval is unnecessary

**Table 1: Frequency distribution of clinical presentations of acute appendicitis by location and types (N= 1051)**

| Acute appendicitis groups | K.U.H | I.S.T.H | Total |
|---|---|---|---|
| Operated cases | 434 | 459 | 893 (85%) |
| Non obstructive cases | 47 | 51 | 98(9.3%) |
| Appendix mass cases | 35 | 25 | 60 (5.7%) |

**Table 2: Frequency distribution of group A and group B of appendix mass cases by Sex and age group**

| Variable | Group A | Group B |
|---|---|---|
| Sex | | |
| M | 18(30%) | 15(25%) |
| F | 14(23%) | 13(22%) |
| Age Group | | |
| 7-<10 | 4 (6.7%) | 4 (6.7%) |
| 10-20 | 16(26.7) | 14(23.3%)) |
| >20 | 12(20%) | 10(16.6) |

Group A: is the treated group with antibiotic Group B: is without antibiotic cases

**Table 3: Distribution of appendectomy cases and appendix mass cases by duration of signs and symptoms of**

| Type of cases | Duration of signs and symptoms (days) |
|---|---|
| Appendectomy | 2.7 (.5-5) |
| Appendix mass | 5.35(3-8) |

**Table 4:Comparing groups (A and B) by subsidence of symptoms and signs and occurring of complications**

| Variable | Group A | Group B |
|---|---|---|
| Subsidence of Signs and symptoms Average hospital stay (days) | 5.25(3-8) | 7.25 (3-20) |
| Complication | | |
| Recurrence | + | - |
| Abscess formation | - | - |
| Generalized peritonitis | - | - |

+ (only 2 cases among group A)

**Table 5: Frequency distribution of operated cases by locations and age groups.**

| Variable | K.U.H | I.S.T.H |
|---|---|---|
| Sex | | |
| F | 250 (58%) | 195(36%) |
| M | 180(42%) | 294 (64%) |
| Age group | | |
| 5-<15 | 23 (5.5%) | 30(6.5) |
| 15-30 | 409 (94%) | 412(89.8%) |
| >30 | 2 (0.5%) | 17(3.7%) |

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