

Early Exploration Of Appendicular Mass

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The management of an appendicular mass has traditionally been conservative, involving a long hospital stay. The patients in whom mass resolves have to be readmitted for interval appendicectomy at a later stage. Those who develop an appendicular abscess during admission need to be operated upon for drainage of the abscess and still called later for elective appendicectomy. A prospective study was carried out to compare the merits and demerits of early exploration vs. conservative treatment of appendicular mass in the Department of Surgery, Unit-I, Lahore General Hospital attached to Postgraduate Medical Institute, Lahore. Fifty patients were admitted and divided in two equal group. One group was managed conservatively and the other underwent early exploration of the appendicular mass of five days or lesser duration. The mean hospital stay in the operated group was 3.48 days and in the other it was 5.7 days. No major complication occurred in patients who had early exploration except wound infection rate of 8 percent. We found that early exploration was not only safe and advantageous but cost effective as well. We recommend early exploration of appendicular mass of five days or lesser duration.

Key words: Appendicitis, appendicular mass, appendicectomy.

Acute appendicitis, the most common cause of an acute abdomen requiring surgery, is complicated by the development of a periappendicular mass in 2-6 % of cases. Appendicular mass is an inflammatory tumour of an inflamed appendix, its adjacent viscera and greater omentum. This may or may not contain pus². Such a mass may either resolve or become an abscess, within its midst is a perforated or otherwise inflamed appendix³.

The management of patients with appendicitis and a mass in the right iliac fossa or pelvis is controversial². Most of the surgeons favour initial non-operative treatment of appendicular mass with antibiotics⁴, followed by appendicectomy at a later stage⁵. Others advocate an immediate appendicectomy. The proponents of immediate appendicectomy claim that the procedure is safe and the total hospital stay is reduced by eliminating the need for readmission^{6,7,8}.

Some surgeons advocate immediate appendicectomy of all masses at any stage^{9,10}. We describe our experience with 25 patients who underwent treatment by immediate appendicectomy and compare our results with same number of patients who were managed conservatively.

Patients And Methods

The study was carried out in Surgical Unit I of Lahore General Hospital Lahore from April 1994 to December 1994. The patients were admitted through the casualty department. Those patients presenting with five days of onset of symptoms were randomly allocated to either group A or B. However those patients who presented after five days were included in group B and those patients in

which mass discovered only at palpation under anesthesia were included in group A.

A standard protocol involved history, physical examination, investigations and proper evaluation of the mass. The investigations included haemoglobin, leukocyte count, urinalysis routinely and in relevant cases blood sugar, urea and serum electrolytes. In group A all patients were operated under general anaesthesia (GA) by a consultant or a senior resident. A dose of prophylactic antibiotic was given at the time of induction which was continued if an abscess was found. The mass was palpated again under GA. The exploration of mass was done through the Gridiron incision by splitting or cutting the muscle fibres. After opening the peritoneum at a healthy site the mass was assessed again, the omentum separated gently from the gut and adhesions broken with finger dissection method, pus if present was drained and specimen sent for culture and sensitivity. The appendix was delivered and after ligating the meso-appendix, appendicectomy performed. In cases of retrocaecal appendix mobilization of the caecum facilitated delivery of the appendix into the wound. If the caecum was mobilized the area was regularly drained through a tube. The wound was closed in layers. Skin subcutaneous tissue was left open in cases where pus was present, otherwise it was loosely stitched after thorough irrigation with saline and povidone iodine. Oral sips and feeding was started when the bowel sounds returned. The patient was allowed to go home as soon as his general condition became stable with an advice to come for follow up at one week and six weeks of operation. The condition of the wound and other post operative complications were noted.

Patients in group B were managed with a combination of ampicillin, gentamicin and metronidazole administered intravenously for 7 days. Regular analgesia was given to relieve pain. Intravenous fluids were given as long as paralytic ileus lasted. The patients were monitored for pain, pulse rate, temperature, tenderness and size of the mass. They were discharged as their symptoms resolved and mass showed signs of regression with an advice to come back for interval appendicectomy after eight weeks or anytime earlier if their symptoms recurred.

Results

Our study of 50 patients included 35 male and 15 female patients. Minimum age was 6 years and the maximum 45 years with a mean of 24.8 years. In group A, the maximum number of patients (44%) presented with mass of 3 days duration while in group B 36% patients presented with mass of 5 days duration (Table 1).

Table 1: Duration of illness

Duration In Days	Group A		Group B	
	n=	%age	n=	%age
2	07	28	01	04
3	11	44	04	16
4	05	20	04	16
5	02	08	09	36
6	-	-	03	12
7	-	-	02	08
8	-	-	01	04
9	-	-	01	04

In clinically palpable masses the maximum size was 7.5x6.5cm. Those detected under group A, the maximum size was 3.75x3.25cm (Table 2). In group B the maximum size was 8x7.5cm.

Table 2: Dimension of the mass in centimetres

Group A	n=	%age	Min	Max	Mean
Clinically	18	72	5x4.5	7.5x6.5	6x5.20
Only under *G/A	7	28	3.5x3.0	4.5x4.0	3.75x3.25
Group B	25	100	4.5x3.5	8.0x7.5	6.04x5.18

*General Anaesthesia

Twenty one patients (84%) had appendicectomy done without caecal mobilization, while two (8%) required caecal mobilization. Only 2 (8%) needed right hemicolectomy for ileocaecal tuberculosis later confirmed on histopathology.

In group A 23 patients (92%) got complete relief of pain within 3 days of admission. On the other hand it took 5 days for patients in group B to become pain free after admission (Table 3).

Table 3: Relief from pain

Days	Group A		Group B	
	n=	%age	n=	%age
1	06	24	-	-
2	11	44	1	04
3	06	24	6	24
4	-	-	9	36
5	-	-	7	28
7	02*	08*	-	-
8	-	-	2	08

*2 patients who had right hemicolectomy

Oral fluids were started much earlier in group A as compared to that in group B indicating early recovery and return to normality (Table 4).

Table 4: Commencement of feeding

Days	Group A		Group B	
	n=	%age	n=	%age
1	8	32	-	-
2	13	52	-	-
3	2	8	-	-
4	-	-	3	12
5	2*	8*	10	40
6	-	-	5	20
7	-	-	5	20
8	-	-	2	08

*2 patients who had right hemicolectomy

The cost of treatment as assessed by calculating the cost of medicines, suture material, infusions and approximate daily expenses during hospital stay was almost half of that in group B (Table 5)

Table 5: Expense Of Medicine.

	Minimum	Maximum
Group A	Rs. 872	Rs. 1204
Group B	Rs. 1618	Rs. 2623

The hospital stay in group A was nearly half as compared to the group B (Table 6). The incidence of wound infection in our study was 8% which is comparable to wound infection rate in routine appendicectomy¹⁰

Table 6: Hospital Stay

Hospital Stay (In Days)	Minimum	Maximum	Mean
Group A	2	7*	3.48
Group B	4	8	5.7

*includes 2 patients who had right hemicolectomy

Majority of patients did not return for follow up. Only 8% came for interval appendicectomy, rest of the patients (25%) presented with recurrent disease (Table 7).

Table 7: Follow up of patients in group B.

Follow Up	n=	%age
Lost to follow up	15	60%
Recurrent appendicitis after 4 weeks	04	16%
Recurrent appendicular mass after 8 weeks	02	08%
Developed appendicular abscess during admission requiring drainage without appendicectomy	02	08%
Patients came for interval appendicectomy	02	08%

The morbidity was comparable to other studies (Table 8).

Table 8: Results compared with other series.

	Cyrus Vakili (n=32)	Jordan [*] et al (n=42)	Foran et al ⁷		Present study	
			A ⁷ (n=13)	B ⁷ (n=30)	A ⁷ (n=25)	B ⁷ (n=25)
Mean hospital stay (days)	09	<14	7.2	11	2.4	5.7
Morbidity %	17.66	0	24.13	24.13	8	26
Mortality	0	0	0	*1		0

⁷(Group)

* (Died of pulmonary embolism)

Discussion

The patients presenting with appendicular mass have conventionally been managed conservatively by hospital admission and treatment with antibiotics and intravenous fluids¹¹ for a period of 7-10 days. The patients have to undergo a period of considerable pain and unpleasant repeat physical examinations to monitor the course of disease. This involves heavy work load on staff, who remain on guard for any untoward happening. The patients are denied oral feeding for several days. Intravenous fluids and large dose of multiple antibiotics make the patient even more distressed. In case the appendix perforates urgent laparotomy is required with its associated complications³. In this way both the surgeons and the patient remain in a state of uncertainty. If the conservative treatment is successful, the patient goes home with a warrant that he will have to come back for interval appendicectomy^{11,5}. Readmission for interval appendicectomy adds to the cost of treatment and another period of absence from job. The protagonists of conservative management argue that performing appendicectomy in patients with appendicular mass is hazardous since it involves dissection of adherent loop of ileum, caecum and omentum. Injury to any part of the gut may lead to complications of which the most dreadful is a faecal fistula^{12,8}.

With improved anaesthesia, better supportive care and antibiotic therapy immediate exploration of appendicular mass is recommended by many surgeons². They believe that appendicectomy is technically possible in most of these cases and that when successfully accomplished it obviates the prolonged disability resulting for the policy of conservative management¹³. It cuts off the length of hospital stay, cost of treatment and the patient gets complete cure during his primary admission. Chemoprophylaxis, adequate relaxation during surgery, a generous incision and above all painstaking gentle dissection are prerequisites for an excellent outcome. Operating on appendicular mass (within 5 days) when the adhesions are flimsy, soft and easily separable is a procedure which should be taken up by a senior surgeon who has extensive experience of performing difficult

appendicectomies. This procedure although not generally advocated because of the fear of serious complications like faecal fistula, is relatively safe in the hands of senior surgeons⁹.

Our study clearly highlights that those patients who had early appendicectomy during primary admission had quicker relief of pain and at the same time they did not develop any complications e.g. pelvic abscess or recurrence of disease. It also shows that 60% of patients initially managed conservatively did not return for interval appendicectomy. Of those who did, majority came back with recurrent mass or appendicitis. The incidence or wound infection in our study is much less to preclude such a procedure¹⁴. We did not experience any faecal fistula formation. Another advantage observed during exploration of appendicular mass was early diagnosis and treatment of lesions other than appendicitis e.g. carcinoma of appendix and caecum¹⁵ and ileocaecal tuberculosis.

We recommend early exploration of appendicular mass as it ensures early recovery with complete cure and obvious cost effectiveness. It also prevents delay resulting from misdiagnosis of appendicular mass in ileocaecal tuberculosis and malignancy.

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