



Clinicopathological Study of Mass in Right Iliac Fossa

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Abstract

The present study was done to know the various diseases which can present with mass in the right iliac fossa and also to study the modes of investigations available to diagnose various types of mass in right iliac fossa and also the various modes of management including complications.

Majority of the cases were related to the appendicular pathology 48% either in the form of appendicular mass or abscess. Majority of patients were in 3rd and 4th decade of life. Most of the times it was people from low socioeconomic status who came with mass in right iliac fossa. Ultrasonography of the abdomen was the main mode of investigation. Almost all the cases were managed surgically and it was found to be effective. Post operative complications included wound infection, were managed appropriately. The overall hospital mortality was 12%.

Appendicular pathology was the commonest cause of mass in right iliac fossa.

Almost all cases of appendicular abscess were managed surgically and it was found to be effective. Cases of appendicular mass were managed conservatively followed by appendicectomy 6 weeks later. Majority of patients with iliocaecal TB were managed conservatively on ATT and those with obstructive features were operated and then received ATT post operatively. Main stay of treatment for ca caecum was surgery.

Keywords: RIF Mass, right iliac fossa, Ileocaecal TB, Appendicectomy.

Introduction

A mass per abdomen has always been considered to be a temple wonders or Pandora's magic box. Despite the advancements in the field of diagnosis, the surprises never cease, hence the abdomen has been rightly called temple of surprises. Mass in the RIF is one of the commonest problems faced in surgical practice. Mass may be intra abdominal or parietal in origin. Mass may develop in connection with the structures which are normally present in this region or may originate from organs lying in other

regions and abnormally invade this region.¹ These masses are different in their etiology, in different age groups and sexes. The varied etiology of these conditions presents a diagnostic challenge to the surgeon, as appropriately said by Sir Hamilton Bailey "A correct diagnosis is the handmaiden of a successful operation".

The structures which are normally present in this region are:

- 1) Appendix
- 2) Caecum
- 3) Terminal part of the ileum

- 4) Lymph nodes
- 5) Iliac arteries
- 6) Retroperitoneal connective tissue
- 7) Iliopsoas sheath
- 8) Ileum.

Appendicular lump is the commonest swelling in the right iliac region. The lump may be either an appendicular mass or an appendicular abscess. Important differential diagnosis is between appendicular mass, abscess, carcinoma caecum and intestinal tuberculosis.

Intestinal tuberculosis is seen more common in people of poor socioeconomic status. There will be early involvement of regional lymph nodes which become matted along with the involved terminal part of ileum and caecum to produce the lump.

1)Caecal carcinoma is more common in high socio-economic people who use less fibrous and purified diet. Carcinoma of caecum is curable when diagnosed early and treated.

2)Diagnosis of abdominal mass mainly depends on clinical examination and investigations. The patients are subjected to pathological and radiological investigations. The main intention of this study is to know the incidence, varying modes of presentation, different modalities of diagnosis, treatment and prognosis as seen in MNR Medical College and Hospital, Sangareddy and to identify factors which can help in better management of these cases thus helping to improve the prognosis and management care.

Materials and Methodology

Source of data were patients with mass in right iliac fossa admitted to MNR Hospital, Sangareddy.

Age incidence

Diagnosis	No. of cases	11-20	21-30	31-40	41-50	51-60
Appendicular mass	22	4	10	4	0	4
Appendicular abscess	2	0	0	2	0	0
Ileocaecal tuberculosis	8	0	0	4	2	2
Ca.caecum	8	0	0	0	0	8
Others	10	4	0	0	4	2
Total	50	8	10	10	6	16

Study period from September 2015 to September 2017. It was a prospective type of study.

Patient provisionally diagnosed to have mass in the right iliac fossa by clinical evaluation will be included in this prospective study.

- A total minimum number of 50 patients will be studied.
- The period of study is from September 2015 to September 2017.
- Direct interview with patient and obtaining a detailed history.
- Through clinical examination.
- Appropriate investigations performed over the patients.
- A pretested structural proforma will be used to collect relevant information for each individual patient selected.

Results

Period of study from September 2015 to September 2017. In our study 50 cases of “mass in right iliac fossa” were chosen.

Incidence of various conditions

Diagnosis	No. of cases	Percentage
Appendicular Mass	22	44%
Appendicular Abscess	2	4%
Ileocecal TB	8	16%
Ca Caecum	8	16%
Others	10	20%
Total	50	100%

In our study, 48% of cases were related to appendicular pathology either in the form of appendicular mass (44%) or appendicular abscess (4%). 16% of cases were ileocaecal tuberculosis and 16% of cases were Ca caecum and 20% of cases were related to other pathology.

In our study it was observed that the youngest patient was of age 20 years who presented with appendicular mass and the oldest was 60 years of age admitted with carcinoma of caecum.

Appendicular mass was seen more commonly in 3rd decade followed by 2nd, 4th and 6th decade.

Appendicular abscess was common in 4th decade.

Ileocaecal tuberculosis was common in 4th and followed by 5th and 6th decade.

Carcinoma caecum was common in 6th decade.

Others was common in 2nd, 5th and followed by 6th decade.

In our study appendicular mass (72%) and appendicular abscess (100%) was predominantly seen in males. Ileocaecal tuberculosis was also more common in males (100%), carcinoma caecum was more common in females (25%) when compared to males (75%) and others was also more common in males (60%) compared to females (40%).

Duration of symptoms

Diagnosis	No.of cases	2-30 days	1-3months	3-6months	>6months
Appendicularmass	22	21	0	1	0
Appendicularabscess	2	2	0	0	0
Ileocaecaltuberculosis	8	2	4	2	0
Ca.caecum	8	0	4	0	4
Others	10	0	2	6	2
Total	50	25	10	9	6
Percentage	100%	100%	100%	100%	100%

In the study, appendicular mass and abscess presented within 30 days, commonest symptom was pain in abdomen with fever, pain was initially localized to umbilicus but later shifted to right iliac fossa pain was colicky and associated with vomiting.

Ileocaecal tuberculosis 4 patients presented between 1 to 3 months and 2 patients between 2-30 days and 2 patients between 3-6 months. It was dull acting pain. In carcinoma caecum 4 patient presented within 1-3 months and 4 patients after 6months and 1 patient presented after 6 months.

Symptoms (fever, vomiting, loss of weight)

Diagnosis	No.of cases	Fever		Vomiting		Loss of weight	
		No	%	No.	%	No	%
Appendicular mass	22	14	63	12	54	1	4
Appendicular abscess	2	2	100	0	0	0	0
Ileocaecal tuberculosis	8	8	100	2	25	1	12
Ca.caecum	8	2	25	4	50	5	62
Others	10	5	40	4	18	5	50
Total	50	28	56	22	44	12	24

In the present study, 63% of appendicular mass presented with fever and 54% with vomiting and 4% with loss of weight. All cases of appendicular abscess presented with fever.

All cases of ilcocaecal tuberculosis presented with fever and weight loss and 25% presented with vomiting, 12% loss of weight. 25% caecum presented with fever, 50% with vomiting and 62% with loss of weight.

Mass per abdomen (as a symptoms)

Diagnosis	No.of cases	Massperabdomenas a symptoms	Percentage
Appendicular mass	22	2	9
Appendicular abscess	2	2	9
Ileocaecal tuberculosis	8	4	18.2
Ca.caecum	8	6	27.3
Others	10	8	36.4
Total	50	22	100

In our study, 9% of cases of appendicular mass presented with mass per abdomen, 9% of cases of appendicular abscess presented with mass per abdomen, 18.2% of cases of ileocaecal

tuberculosis presented with mass per abdomen, 36.4% of other cases presented with mass per abdomen.

Clinical signs

Clinical signs	No.of cases	Percentage
Mass per abdomen	22	44
Tenderness	46	92
Consistency		
Soft	4	8
Firm	37	74
Hard	9	18
Mobility		
Restricted	13	28
Fixed	24	48
Mobile	13	24
Border		
Regular	27	54
Irregular	11	22
Diffuse	12	24

In the present study 44% of patient had mass per abdomen, 92% of patients had tenderness in right iliac fossa.

8% of patients with mass was soft in consistency. This included all cases of appendicular abscess and 74% case of patient of mass was firm in consistency. This included all cases of appendicular mass and all cases of ileocaecal tuberculosis.

In 18% of patients mass was hard in consistency. These included 6 cases of carcinomacaecum.

In 24 cases mass was fixed. These included patients of appendicular mass 14 and 2cases of Ca.caecum.

In 27 patients borders were regular and in another 11 patients borders were irregular and in 12 patients borders were diffuse.

Investigations

Findings	USG		Ba.studies		CT	
	No.	%	No.	%	No.	%
Appendicular mass	17	37	2	11.1	1	4.8
Appendicular abscess	2	4.3	0	0	0	0
Ileocaecal tuberculosis	8	17.4	6	33.3	6	28.6
Ca.caecum	10	21.7	10	55.6	8	38.1
Others	9	19.6	0	0	6	28.6
Total	46	100	18	100%	21	100%

In the present study, all patients got ultrasound abdomen done and all of them were correctly diagnosed. Barium enema was done for ileocaecal tuberculosis and carcinoma caecum.

The main feature in ileocaecal tuberculosis was pulled up caecum, narrowed terminal ileum with widened ileocaecal angle (obtuse).

In carcinoma caecum main feature was irregular filling defect with shouldering sign positive. In

one study, colonoscopy was done only for one patient and it showed malignant growth in the caecum. Computed tomography was done in 1 cases of appendicular mass 8 cases of ca. caecum, 6 cases of ileocaecal tuberculosis and 4 cases of retroperitoneal mass, 1 cases of psoas abscess and 1 cases of unascended kidney.

Mode of treatment

Diagnosis	No. of cases	Conservative		Surgical	
		No.	%	No.	%
Appendicular mass	22	14	63.36	8	36.4
Appendicular abscess	2	-	-	2	100
Ileocaecal tuberculosis	8	-	-	8	100
Ca. caecum	8	-	-	8	100
Others	10	2	20	8	80
Total	50	16	32	34	68

In our study of 50 cases, 16 cases were managed conservatively and 34 cases were managed surgically.

All 8 cases of appendicular mass were managed surgically, all two cases are appendicular abscess were managed by extraperitoneal drainage. These two cases of appendicular abscess were subjected to interval appendicectomy 6- 8 weeks later.

All 4 cases of psoas abscess were managed by extra peritoneal drainage.

All 8 cases of ileocaecal tuberculosis, were managed surgically, because of obstructive symptoms and rest 5 received ATT and came for regular follow-up.

All 8 cases of carcinoma caecum, were managed surgically. Two cases of unascended kidney didn't agreed for surgery. Among 14 cases of appendicular mass initially were managed by (conservative) oschnerscherren regime, 12 cases were subjected to interval appendicectomy 6-8 weeks later. 2 cases of appendicular mass put on oschnerscherren regimen did not turn up for surgery.

Surgical treatment

Type of surgery	No. of cases	Percentage
O Sregime with appendicectomy	6	17.6
Immediate laparotomy with appendicectomy	2	5.9
Extra peritoneal drain age with antibiotics	2	5.9
Extra peritoneal drain age with interval appdicectomy	2	5.9
Right hemicolectomy	12	35.3
Right radical hemicolectomy	10	29.4
Total	34	100

In our study among 34 cases managed surgically, among 8 appendicular mass, 6 cases of appendicular masses were managed by OS regimen initially and appendicectomy was done at 6-8 weeks later and 2 cases of appendicular masses were managed by right radical hemicolectomy.

All cases of appendicular abscess were subjected to laparotomy and immediate appendicectomy. In 2 cases of psoas abscess extra peritoneal drainage was done

followed by which two cases was put on antibiotics.

Among 8 cases of ileocaecal tuberculosis managed surgically for 6 cases right radical hemicolectomy, where as 2 cases they had underwent right hemicolectomy.

In 8 cases of Cacaecum managed surgically all cases treated with right hemicolectomy.

Complications (post op follow up)

Post op complications	No. of cases	Percentage
Wound infection	6	17.94
Mortality	6	17.94
Total	12	35.88

In the present study wound infection occurred in 6 cases. Out of 34 cases operated 6cases died.

Post-operative follow up

	No. of cases 32	Percentage 32%
Surgery done	14	14
ATT	10	10
Chemotherapy	4	4
Normal	4	4

32% of cases back for follow up. 14 cases were operated i.e. interval appendicectomy in case of appendicular mass (12) managed by o-s regimen and all cases of appendicular abscess (2). 8 cases of ileocaecal TB were regularly taken ATT and respond well. 4 cases of Ca.caecum were regularly coming for chemotherapy. Others were normal at follow up.

Discussion

Mass in right iliac fossa is one of the most commonly encountered clinical conditions today. Among them, in our study, 48% of cases were related to the appendicular pathology either in the form of appendicular mass (44%) and appendicular abscess (4%).

In our study appendicular mass was more common in 2nd and 3rd decade followed by 4th and 6thdecade.

Appendicular abscess was more common in 3rd decade.

The highest incidence of ileocaecal tuberculosis was common in 4th, 5th followed by 6th decade.

In our study, carcinoma caecum was more common in 6th decade.

As seen in Table 3, appendicular mass (3.4:1), all cases of appendicular abscess and ileocaecal TB predominantly seen in males. In our study the incidence of Ca caecum was higher in males (75%) than males (25%).

Appendicular mass is most likely to be present in patients who have come to the surgeon 48 hours or so often the onset of symptoms. This is nothing but matting together of omentum and bowel around the inflamed appendix. In our study 63% of patients with appendicular mass presented with fever and 54% with vomiting, 4 % with loss of weight.

Patients with appendicular abscess in our study came to the hospital with complaints of pain in abdomen, fever and vomiting, pain initially was colicky in nature which later changed to throbbing type. No patient complained of mass per abdomen. But on examination all cases had mass per abdomen with diffuse borders and it was tender and soft in consistency. All patients with appendicular abscess had fever.

Intestinal tuberculosis is seen more common in people of poor socioeconomic status. There will be early involvement of regional lymph nodes which become matted along with involved terminal part of ileum and caecum to produce a lump.² In our study all patients with ileocaecal tuberculosis presented with fever, 12% of patient with loss of weight but only 25% of them had vomiting. Ileocaecal tuberculosis formed 18.2 % of cases of mass in right iliac fossa.

50% of these cases had associated pulmonary tuberculosis.

50% of cases the duration of symptoms was between 1 to 3months, 25% of patients presented between 2 to 30 days and 25% of patient presented between 3 to 6 months.

A high index of suspicion should be maintained for ileocaecal tuberculosis in patients with

appropriate clinical feature, even if classical risk factors for tuberculosis are absent.

In our study 27.3% cases presented with mass per abdomen, 62% of patients presented with loss of weight, 25% of patients had fever and 50% had vomiting. Average duration of symptoms was from 1-6 months.

In many instances the only manifestation will be of deterioration of general health with loss of weight and anaemia. In our study all 8 patients had altered bowel habits. All the patients had pain in abdomen in right iliac fossa associated with tenderness.

In the present study, 50% of cases, Hb was less than 10 g/dl and 50% of cases Hb was > 10g/dl in ileocaecal tuberculosis. Also 32% of cases ESR was more than 40 mm/hr and 32% had ESR between 5-20 mm/hr and 32% had ESR between 20-40 mm/hr and 4% of cases had ESR more than 60mm/hr. Among 8 cases of Ileocaecal tuberculosis ESR was 41-60mm/hr. According to Prakash ATM39 et al more than 50% of cases had Hb% less than 10g/dl and ESR > 30 mm / hr.

Investigations formed an important part of management of patients with mass in right iliac fossa. Diagnosis of appendicitis can be made in patients with right lower quadrant pain when a non compressible appendix greater than 6mm diameter is shown in ultrasound. In the present study abdominal ultrasound was done in all patients.

In the present study out of 14 cases of appendicular mass, 2 cases did not agree for surgery. The rest 12 cases (85%) were initially managed by Oschner Sherrin's regime and appendicectomy was done after 6 weeks.

The management of appendicular mass is surrounded with controversy.

A conservative management is still a highly acceptable approach for appendiceal mass. This should be followed by interval appendicectomy especially in patients with persistent right iliac fossa pain.

In the present study, all those who underwent interval appendicectomy, the specimen was sent

for histopathological examination and all were reported as chronic appendicitis.

Investigations used in the diagnosis of appendicular abscess were ultrasound and computerized tomography. In the present study ultrasound was done for all patients and CT was done in 21 patients to confirm the diagnosis. On CT scan, appendix appears dilated (> 5 cms) and the wall is thickened. An important suggestive abnormality is arrow head sign. This is caused by thickening of caecum. The diagnostic accuracy with CT i.e., 92 to 97% sensitivity, 85 to 94% specificity, 90-98% accuracy.

In the present study, all cases of appendicular abscess underwent immediate Appendicectomy.

Patients who had diffuse peritonitis must undergo immediate appendicectomy but other patients can be managed with intravenous antibiotics and percutaneous drainage of the abscess if suitable. After expectant management interval appendicectomy can be offered in the light of the significant risk that appendicitis may recur and low morbidity rate is associated with this procedures. The complication rate were 67% for the immediate appendicectomy group and 24% for the expectant management group.

Unless there is intestinal occlusion, in those patients with tender mass or appendicular abscess, we must start, a medical treatment based on antibiotics and later on carry out the appendicectomy through laparoscopy. According to Hurme et al if appendicular abscess is operated on in the acute phase, there may be complications, but it is often not possible to make the correct diagnosis before operation. The routine of interval appendicectomy may be questioned, but adequate follow-up should be arranged.

In the present study, all cases of ileocaecal tuberculosis underwent ultrasonography of abdomen and barium studies. 6 cases underwent CT abdomen. 4 cases (50%) had associated pulmonary kochs as seen in chest X-ray. According to Kelly J et al a high index of suspicion should be maintained for ileocaecal tuberculosis in patient with appropriate clinical

feature, even if classical risk factors for tuberculosis are absent. According to Schoefied PF et al in ileocaecal tuberculosis there are characteristic radiological appearances in barium enema examination like caecum is pulled up, ascending colon shortens, ileum retains its normal caliber.

According to Malik A et al combination of ultrasonography findings in proper clinical settings are diagnostic of tuberculosis. FNAC confirms the diagnosis in lymphadenopathy, abscesses and focal lesions of the viscera. According to Yilmaz T et al if peritoneal thickening, ascites, abdominal lymphadenopathies and thickened intestinal walls are obtained in CT abdomen, abdominal tuberculosis should be considered in differential diagnosis in developing countries. According to Afzal S et al in patients with suspected ileocaecal tuberculosis, predetermined clinical criteria can be readily applied for early diagnosis, without resorting to surgery and with excellent clinical response.

Hypertrophic ileocaecal tuberculosis should be considered in the differential diagnosis of abdominal pathology located in the right lower quadrant.

In the present study, among the 8 cases, 2 cases under went right hemicolectomy and 6 cases underwent right radical hemicolectomy. According to a study done by H.B. Byrone et al resection rather than the bypass of the diseased bowel in the preferred surgical treatment. Resection by right hemicolectomy should be carried out where possible. In certain circumstances (for eg. poor general condition or on current procedure making a lengthy procedure unwise), a temporary ileotransverse colostomy is a sensible compromise. This is supported by Anand series. According to IP Elhence and BD Sharma et al clinical subjective improvement after surgery occurred after 2-6 months of ATT which may be because of surgical removal of basic tuberculosis lesion. In the present study, 100% of cases underwent definitive surgery and followed by this, the patients were put on

antituberculous therapy. These patients responded well. Standard regimen used was first 2 months of intensive phase 2 (HRZE)³ and next 4 months of continuation phase 4 (HR) ³. Category I regimen-DOTS, Dr. D.Banerji et al. After surgery, resected specimens were sent for HPE and report showed itas caseating granulomatous lesion.

In the present study all cases of ca caecum underwent ultrasound of abdomen and barium studies. NGB Richardson et al said that sensitivity, specificity and accuracy of abdominal USG in colonic tumours considered to be consistent with colonic carcinoma was 96% and 97% respectively. In Goligher study barium enema examination revealed a bulky tumour that projects into the lumen of caecum of ascending colon, producing a filling defect with an irregular edge.

In the present study, 8 cases underwent right radical hemicolectomy and 4 case expired while receiving chemotherapy. According to Goligher, experience with regards to growth of caecum and ascending colon, he prefers to practice the more extensive right hemicolectomy except when patients general condition is such as to compel restriction of the resection to the minimum that offers a reasonable chance of cure.

Among the 8 operated cases of carcinoma of caecum, all were sent for histopathological examination and 2 were reported as moderately differentiated adenocarcinoma, 4 were mucinous secreting adenocarcinoma and 2 cases were found to be actinomycosis.

Conclusion

Appendicular pathology (48%) either in the form of appendicular mass (44%) or appendicular abscess (4%) was the commonest cause of mass in right iliac fossa.

Mass in right iliac fossa was common in the age group of 20-40 years.

Overall incidence was more in males as compared to females (3.5;1)

Carcinoma caecum was more common in males 75% as compared to females 25%.

The diseases were more common in people from low socioeconomic status and commonest symptom was pain in abdomen.

USG abdomen was the 1st investigation of choice and it had a sensitivity of 100%.

In patients with appendicular mass, initially conservative management With Oschner Sherrin's regime was done followed by interval appendicectomy. This had good results.

Patients with appendicular abscess underwent immediate appendicectomy and the complications were less. Only complication seen was wound infection.

Cases of ileocaecal tuberculosis received ATT for 6 months post operatively.

Surgery was the mainstay of treatment for Ca caecum.

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