International Journal of Science and Research (IJSR)
ISSN (Online): 2319-7064
Index Copernicus Value (2015): 78.96 | Impact Factor (2015): 6.391

Clinical Study of Mass in Right ILIAC Fossa

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Abstract: ***Background: A mass in the right iliac fossa is a common entity which is frequently encountered in clinical practice, requiring skill in diagnosis. The common swellings which occur in the right iliac fossa are appendicular lump, carcinoma of the caecum, ileocaecal tuberculosis and Crohn's disease. Most of the causes need surgical intervention and are curable. Although an extensive subject, this study was undertaken to unravel some of mystery of a mass in right iliac fossa. Aims: The main intention of this study is to know the incidence, varying modes of presentation and management of these cases. Materials and methods: Fifty patients with signs and symptoms of a right iliac fossa mass admitted to Mahatma Gandhi Hospital were included in this study. Results: Our study showed that 62% of cases were related to appendicular pathology either in the form of appendicular mass (48%) or appendicular abscess (14%). 16% of cases were of ileocaecal tuberculosis, 12% of cases were of Ca caecum and 10% of cases were of Psoas abscess. Conclusion: In patients with appendicular mass, initially conservative management with OchsnerSherren's regimen followed by interval appendicectomy had good results. Patients with appendicular abscess underwent immediate appendicectomyand the complications were less. Cases of ileocaecal tuberculosis received Anti Tubercular Therapy post operatively. Surgery was the mainstay of treatment for Ca caecum and Psoas abscess.***

Keywords: Appendicular mass, Appendicular Abscess, Mass in right iliac fossa, Ileocaecal tuberculosis

1. Introduction

A mass in the right iliac fossa is a common entity which is frequently encountered in clinical practice, requiring skill in diagnosis.[1]A swelling in the right iliac fossa may arise from the structures normally present in that region or from structures, which are abnormally situated in the region.The common swellings which occur in the right iliac fossa are appendicular lump, carcinoma of the caecum, ileocecal tuberculosis and Crohn's disease. Rare swellings are actinomycosis, amoeboma, psoas abscess and lymph node masses.

A clinical diagnosis is often difficult due to other conditions such as obesity and guarding, with the mass being palpable only when patient is on the operating table.[2] Patients with a mass in the right iliac fossa are often admitted in surgical departments. Most of the causes need surgical intervention and are curable. A mass in the right iliac fossa mainly arises from appendix, caecum, and terminal part of ileum, lymph nodes, iliopsoas sheath, and retroperitoneal connective tissue. An important differential diagnosis is between an appendicular lump, carcinoma of the caecum and ileocecal tuberculosis. Non-operative management of an appendix mass followed by elective appendicectomy is a safe and effective method of management.[2]

As rightly said by Sir Hamilton Bailey "A correct diagnosis is the hand maiden of a successful operation." The diagnosis of appendicitis remains essentially clinical, requiring a mixture of observation, clinical acumen and surgical science. In an age accustomed to early and accurate preoperative diagnosis, acute appendicitis remains an enigmatic challenge and a reminder of the art of surgical diagnosis. A lump in the abdomen has always held a fascination for clinicians. The patients presenting with mass per abdomen form bulk of the cases in surgery. Among the various quadrants of abdomen, the right iliac fossa enjoys the pride of place as far incidence of mass per abdomen is concerned. Although an extensive subject, this study was undertaken to unravel some of mystery of a mass in right iliac fossa, the very presence of mass proving a diagnostic problem.

The most common differential diagnosis encountered by surgeons today are[1]

- Appendicular Lump
- Appendicular Abscess
- Ileocaecal Tuberculosis
- Right Ovarian Mass
- Right Ectopic Kidney
- Rectus Sheath Hematoma
- Ca Caecum
- Amoeboma

2. Aims & Objectives

To study the various conditions / diseases presenting as Mass in the Right Iliac Fossa in Mahatma Gandhi Hospital from January 2015 to December 2016 with relation to:

1) Incidence, Age and Sex Distribution of Different Conditions.
2) Varying modes of Clinical Presentation.
3) Different modalities Treatment.

3. Material & Methods

Source of data (sample)

Fifty patients with signs and symptoms of a right iliac fossa mass admitted to Mahatma Gandhi Hospital were included in this study.

Method of collection of data

All patients with signs and symptoms of a right iliac fossa mass fulfilling the inclusion criteria were included in this study. A detailed clinical history was elicited and a careful

general physical and systemic examination was carried out along with the necessary investigations and treatment.

Inclusion Criteria

All patients attending the surgical OPD with mass in right iliac fossa

Exclusion Criteria

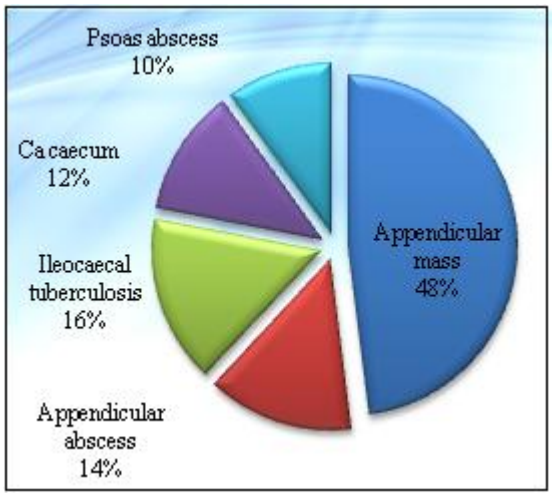
- Pregnant Women
- Terminally ill cancer patients
- Immuuno-compromised patients
- Structures presenting abnormally in the Right Iliac Fossa

Observations and Results

Table 1: Incidence of Various Conditions

Diagnosis	No. of Cases	Percentage
Appendicular mass	24	48
Appendicular abscess	7	14
Ileocaecal tuberculosis	8	16
Ca caecum	6	12
Psoas abscess	5	10
Total	50	100

Table 1 shows in our study, 62% of cases were related to appendicular pathology either in the form of appendicular mass (48%) or appendicular abscess (14%). 16% of cases were ileocaecal tuberculosis, 12% of cases were Ca caecum and 10% of cases were Psoas abscess.



Graph 1: Incidence of Various Conditions

Table 2: Age wise Distribution of the cases according to Diagnosis

Diagnosis	Upto 20yrs		21 to 30yrs		31 to 40yrs		41 to 50yrs		>50yrs		Total	P value LS
	No	%	No	%	No	%	No	%	No	%		
Appendicular mass	2	8.33	9	37.50	9	37.5	3	12.5	1	4.17	24	0.5NS
Appendicular abscess	0	0.00	0	0.00	4	57.14	2	28.57	1	14.29	7	0.35NS
Ileocaecal tuberculosis	1	12.50	2	25.00	3	37.50	0	0.00	2	25.00	8	0.22NS
Ca caecum	0	0.00	2	33.33	2	33.33	2	33.33	0	0.00	6	0.65NS
Psoas abscess	0	0.00	1	20.00	3	60	1	20	0	0.00	5	0.84NS
Total	3	6.00	14	28.00	21	42	8	16	4	8.00	50	

Table 2 shows in our study, it was observed appendicular mass was seen more commonly in 3rd and 4th decade followed by 5th and 2nd decade. Appendicular abscess was common in 4th decade. Ileocaecal tuberculosis was common in the 4th decade. Carcinoma caecum was common in the 3rd, 4th and 5th decades. Psoas abscess was common in the 4th decade.

Table 3: Sex wise distribution of the cases

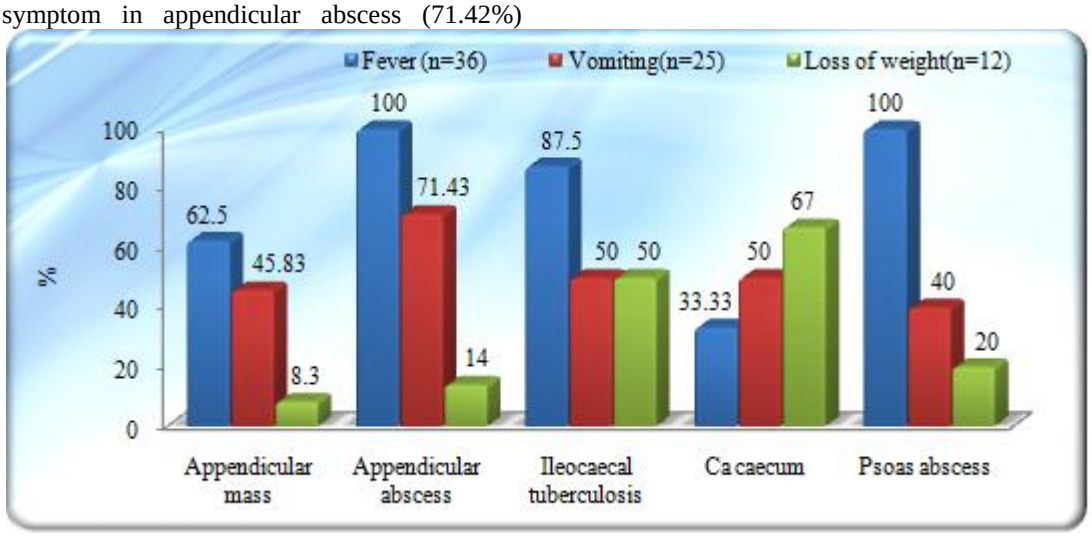
	Female		Male		Total	P Value LS
	No	%	No	%	No	
Appendicular mass	12	50	12	50	24	0.79NS
Appendicular abscess	4	57.14	3	42.86	7	0.81NS
Ileocaecal tuberculosis	3	37.50	5	62.50	8	0.88NS
Ca caecum	2	33.33	4	66.67	6	0.82NS
Psoas abscess	2	40.00	3	60.00	5	0.85NS
Total	23	46.00	27	54.00	50	

Table 3 shows in our study, 50% cases of appendicular mass were males and remaining 50% were females. Appendicular abscess (57.14%) was predominantly seen in females. Ileocaecal tuberculosis was also more common in males (62.50%) when compared to females (37.50%). Carcinoma caecum was more common in males (66.67%) when compared to females (33.33%). Psoas abscess was more common in males (60%) compared to females (40%).

Table 4: Association of diagnosis with Symptoms (fever, vomiting, loss of weight)

Diagnosis	No. of cases	Fever (n=36)		Vomiting (n=25)		Loss of weight (n=12)		P Value LS
		No	%	No	%	No	%	
Appendicular mass	24	15	62.5	11	45.83	2	8.33	0.23NS
Appendicular abscess	7	7	100	5	71.42	1	14.3	0.64NS
Ileocaecal tuberculosis	8	7	87.5	4	50	4	50	0.46NS
Ca caecum	6	2	33.33	3	50	4	66.7	0.04S
Psoas abscess	5	5	100	2	40	1	20	0.73NS
Total	50	36	72	25	50	12	24	

Table 4 shows fever was the most common presenting symptom in appendicular abscess (100%) and psoas abscess (100%) followed by Ileocaecal tuberculosis (87.5%) and appendicular mass (62.5%). Vomiting is the most common presenting symptom in appendicular abscess (71.42%) followed by ileocaecal tuberculosis (50%) and Ca caecum (50%). Loss of weight is the most consistent symptom with Ca caecum (66.7%) followed by ileocaecal tuberculosis (50%).



Graph 2: Clinical Features (Fever, vomiting and loss of weight)

Table 5: Mode of Management (considering Appendicular mass managed initially by OS regimen followed by interval appendectomy after 6 weeks, in conservative management, N=15)

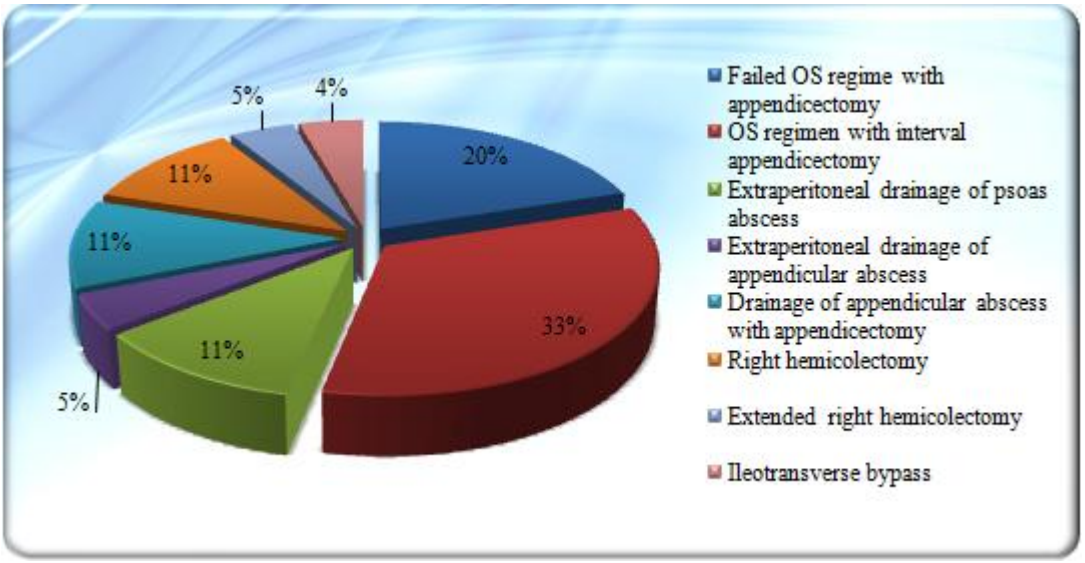
Diagnosis	No. of cases	Conservative		Surgical	
		No	%	No	%
Appendicular mass	24	15	62.5	9	37.5
Appendicular abscess	7	0	0	7	100
Ileocaecal tuberculosis	8	5	62.5	3	37.5
Ca caecum	6	0	0	6	100
Psoas abscess	5	0	0	5	100
Total	50	20	40	30	60

Chi-square = 18.750 with 4 degrees of freedom; P < 0.001S

Table 5 shows conservative management was mainly done in Appendicular mass (62.5%) and Ileocaecal tuberculosis (62.5%) while all cases of Appendicular abscess, Ca caecum and Psoas abscess were mainly managed surgically.

Table 6: Types of Surgical Management

Treatment	No. of Cases	Percentage
Failed OS regime with appendicectomy	9	20
OS regimen with interval appendicectomy	15	33.3
Extraperitoneal drainage of psoas abscess	5	11.1
Extraperitoneal drainage of appendicular abscess	2	4.44
Drainage of appendicular abscess with appendicectomy	5	11.1
Right hemicolectomy	5	11.1
Extended right hemicolectomy	2	4.44
Ileotransverse bypass	2	4.44
Total	45	100



Graph 3: Type of Surgical Management

4. Discussion

Appendicular Mass

In the present study, appendicular mass accounted for 48% of cases. S K Shettyet al[3] in their study of 50 cases of "mass in right iliac fossa" concluded that appendicular masses accounted for 32% of cases. Raju B et al[4] in their study of 50 cases of right iliac fossa mass concluded that appendicular masses accounted for 46% of cases.

S K Shettyet al[3] reported the maximum age incidence in the 3rd (31%) and 4th (31%) decade, followed by the 2nd decade (18%). Raju B et al[4] reported the maximum age incidence in the 3rd decade (39%), followed by the 4th, 5th and 6th decades. Appendicular mass was seen more commonly in 3rd and 4th decade followed by 5th and 2nd decade.

According to S K Shettyet al[3], appendicular masses were more common in males than in females (1.66:1). According to Raju B et al[4], appendicular masses were more common in males than in females (1.55:1). The present study found appendicular mass to be equally common in males (50%) and females (50%).

S K Shettyet al[3] claim fever was the prominent symptom (93%), and there was vomiting in about 50% of cases. Raju B et al[4] claim fever was present in 74% patients and vomiting in about 65% patients. The present study found that fever was present in 62.5% of cases and vomiting was present in about 45.83% of cases. Skoubo-Kristensenet al[5] claim 55% of their cases experienced febrile episodes with a temperature >39º C.

According to S K Shettyet al[3], 93% of patients were treated conservatively by Ochsner-Sherren (O-S) regimen followed by interval appendicectomy. In the present study, 62.5% of patients were treated conservatively by Ochsner-Sherren (O-S) regimen followed by interval appendicectomy and 37.5% of patients who failed O-S regimen, underwent emergency appendicectomy.

According to Gahukambleet al[6], "in situ" delayed appendicectomy seems beneficial for all the patients who respond well to the initial management of appendicular mass.

Skouboet al[5] say that conservative management of appendicular masses is successful in most cases and complication rates seem lower than with early operative treatment. In this study, cases managed conservatively underwent interval appendicectomy 6-8 weeks later.

Appendicular Abscess

In the present study, appendicular abscess accounted for 14% cases. As per S K Shettyet al[3], appendicular abscess formed 20% of their series. AnuradhaDyanmote et al[1] in their clinical study of mass in right iliac fossa of 50 patients found appendicular abscess accounted for 22% cases.

According to SK Shettyet al[3], most of the cases were in the 3rd to 5th decade. According to Anuradhaet al[1] appendicular abscess was common in the 3rd decade followed by 2nd and 4th decades. In the present study, appendicular abscess was common in 4th decade followed by 5th decade.

SK Shettyet al[3] said that appendicular abscess was more common in males (70%). Raju B et al[4] said appendicular abscess was more common in females(77%). In the present study, appendicular abscess was predominantly seen in females (57.14%).

S K Shettyet al[3] said fever was the most common presenting symptom in appendicular abscess (100%) followed by vomiting in 70% patients. Raju B et al[4] reported all patients of appendicular abscess had fever followed by vomiting (60%). The present study also reported fever as the most common presenting symptom (100%) followed by vomiting in 71.42% patients.

According to Bradley et al[7], the complication rate was significantly lower and the hospital stay shorter in patients managed expectantly than in those undergoing 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 light of the significant risk that the appendicitis recurs and of the low morbidity rate associated with this procedure.

Ileocecal Tuberculosis

In the present study, 16% cases were diagnosed as ileocaecal tuberculosis. S K Shettyet al[3] reported 22% of cases with mass in right iliac fossa to be due to ileocaecal tuberculosis. Shashikala V et al[8] reported that ileocaecal tuberculosis accounted for 20% of their cases.

According to Prakashet al[9], the highest incidence of this disease was found in the age group of 20 to 40 years. S K Shettyet al[3] concluded the maximum age incidence in the 3rd and 4th decade (83%). Shashikala V et al[8] concluded the maximum age incidence in the 4th decade. The present study found the maximum age incidence in the 3rd and 4th decade.

S K Shettyet al[3] reported a higher incidence in males (64%). Shashikala V et al[8] also reported a higher incidence in males (60%). The present study also reported a higher incidence in males (62.5%).

S K Shettyet al[3] found that fever was present in 91% patients. Raju B et al[4] said that 50% patients had fever. The present study found, 87.5% patients had fever.

S K Shettyet al[3] said that loss of weight was the commonest symptom present in all cases. B Rajuet al[4] also found loss of weight in all the cases. The present study found loss of weight in 50% cases.

Elhenceet al[10] said, gastrointestinal tuberculosis, though rare in industrialized countries, continues to be a problem in developing countries. In India, tuberculosis has been reported to be the cause in 3 to 4% of patients with intestinal obstruction. About 5 to 7% of all gastrointestinal perforations (excluding appendix perforations) have been reported to be due to tuberculosis. Tuberculosis enteritis is

commonest in the ileocaecal region in series conducted by Prakash[9]. According to Prakash, abdominal pain is the commonest symptom in both the obstructive and the non-obstructive group. In the latter, it may be colicky in nature, but it is often vague, related to umbilicus and right iliac fossa.

According to Kelly et al[11], a high index of suspicion should be maintained for ileocaecal tuberculosis in patients with appropriate clinical features, even if classical risk factors for tuberculosis are absent.

Elhence et al[10] said that clinical and subjective improvement after surgery occurred after 2-6 months of anti-tuberculous treatment which may be because of surgical removal of basic tuberculosis.

Shashikala V et al[8] managed 80% cases conservatively. S K Shettyet al[3] managed 82% cases surgically. Raju B et al[4] managed 50% cases surgically. In the present study, 62.5% cases were managed conservatively. 3 cases (37.5%) were managed surgically.

Carcinoma of the Caecum

S K Shettyet al[3] said, carcinoma of the caecum formed 16% of their cases. Raju B et al[4] said, Ca caecum accounted for 8% of their cases. Sarathet al[12] claimed, Ca caecum accounted for 16% of their cases. In the present study, Ca caecum formed 12% of the cases.

S K Shettyet al[3] reported that 87% cases were more than 40 years old. Raju B et al[4] reported that all the cases were more than 40 years old. In the present study, Ca caecum was common in the 3rd, 4th and 5th decades.

S K Shettyet al[3] said that Ca caecum was more common in females (63%). Raju B et al[4] said that Ca caecum was more common in males (75%). In the series done by McDermott et al[13], 51% were males and 49% were females. The present study revealed that Ca caecum was more common in males (66.67%).

According to Goligher's[14] experience with regard to growths of the caecum and ascending colon, he prefers to practice the more extensive right hemicolectomy except when the patients general condition is such as to compel restriction to the minimum that offers a reasonable chance of cure. All cases of Ca caecum were managed surgically.

In this series, the general condition of the patients was improved by giving high-protein diet and haematinics. Almost all the patients in this series needed blood transfusion, either in the preoperative period or in the peri/postoperative period. In 2 out of 6 cases, right radical hemicolectomy was done, followed by chemotherapy (5-FU based).

Iliopsoas Abscess

S K Shettyet al[3] reported that 8% cases were of psoas abscess. In the present study, psoas abscess accounted for 10% cases.

According to S K Shettyet al[3], 75% cases presented in the 4th decade. In the present study, 60% cases presented in the 4th decade.

SK Shettyet al[3] found psoas abscess predominantly in males (75%). In the present study, psoas abscess was found predominantly in males (60%).

S K Shettyet al[3] reported all cases of psoas abscess had fever, 75% cases had vomiting and 25% cases had loss of weight. The present study reported, all cases had fever, 40% cases had vomiting and 20% cases experienced loss of weight.

As conservative management failed, all cases underwent laparotomy and drainage. Histopathologically, they all proved to be of tubercular origin. Psoas abscess is, as a rule, associated with detectable tuberculous disease of the vertebral column. However, the osseous lesions may not be discernable clinico-radiologically in the initial stages.

5. Conclusion

- Appendicular pathology (62%) either in the form of appendicular mass (48%) or appendicular abscess (14%) was the commonest cause of mass in right iliac fossa, followed by ileocaecal tuberculosis (16%), Ca caecum (12%) and psoas abscess (10%).
- Mass in right iliac fossa was common in the age group of 20-40 years (70%).
- Carcinoma caecum was more common in males (66.67%) as compared to females (33.33%).
- The commonest symptom was pain in abdomen (100%) followed by fever (72%) and vomiting (50%).
- Conservative management was mainly done in Appendicular mass (62.5%) and Ileocaecal tuberculosis (62.5%) while all cases of Appendicular abscess, Ca caecum and Psoas abscess were mainly managed surgically.
- In patients with appendicular mass, initially conservative management with OschnerSherrin's regimen 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 Anti Tubercular Therapy post operatively.
- Surgery was the mainstay of treatment for Ca caecum and Psoas abscess.

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