



Pattern of Presentation and Management Outcome in Right Iliac Fossa Mass

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Abstract

Background: Mass in the right iliac fossa is one of the commonest causes of admission in the surgical services. The various pathologies, multiple and varied modes of presentation of each disease entity, the difficulties encountered in investigative modality, diagnosis and treatment make masses presenting in right iliac fossa (RIF), a difficult entity to treat even at tertiary care centers. Assessing the incidence, pattern of presentation of right iliac fossa mass which often poses a diagnostic as well as therapeutic challenge hence identification factors help in the optimum management of these cases.

Materials and Methods: 100 cases of mass in the right iliac fossa who fulfilled the inclusion criteria admitted in the surgical wards of RIMS hospital during September 2019 to August 2021 were studied in detail. Ultrasonography (USG) was done as first line of investigation in cases of mass in the right iliac fossa. Results: Appendicular lump (63%) was the commonest condition causing mass in the right iliac fossa followed by appendicular abscess (23%), ileocaecal tuberculosis (6%), carcinoma caecum (7%) and Psoas abscess (1%). 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 (1.7:1).

Conclusion: 39% of the patients were managed surgically. Rare findings should also be kept in mind and special investigations should be used judiciously to further improve the diagnostic accuracy. Surgical management remains the mainstay management in cases of right iliac fossa mass.

Keywords: appendicitis, ileocaecal tuberculosis, carcinoma caecum, Psoas abscess

Introduction

As Galen said, in the quaint phraseology of Peter Lowe, 'Hard is it to cure any disease except we first know the nature and situation of that part whereupon we work, as also the cause of the disease; otherwise neither salve is able to prognosticate the event, nor cure the same'.¹ Patient with mass in the right iliac fossa may confront the surgeon, the paediatrician, the obstetrician and the gynaecologist. A thorough understanding of the anatomy and pathological processes that may occur within the abdomen are

essential for an accurate diagnosis and plan of treatment. Some patients will require immediate surgical intervention, whereas others will improve with conservative treatment.

Mass in the RIF is one of the commonest problems faced in surgical practice. Right iliac fossa 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 invading this region.

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 among appendicular mass, abscess, carcinoma caecum and intestinal tuberculosis.² The diagnosis of extrapulmonary tuberculosis can be difficult as it presents with nonspecific clinical and radiological features and requires high degree of suspicion for diagnosis. The abdominal tuberculosis, which is not as commonly seen as pulmonary tuberculosis, can be a source of significant morbidity and mortality and is usually diagnosed late due to its nonspecific clinical presentation. 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 involvement of terminal part of ileum and caecum to produce a lump in right iliac fossa.³

Caecal carcinoma is more common in high socioeconomic people who use purified diet and less fibrous diet. Carcinoma of caecum is curable when diagnosed early and treated. Crohn's disease, Giardia lamblia and diverticulitis of caecum, are uncommon in our country, are interesting causes of right iliac fossa mass. Such is the diversity of a right iliac fossa mass.⁴ The various pathologies, multiple and varied modes of presentation of each disease entity, the difficulties encountered in investigative modality, diagnosis and treatment make masses presenting in right iliac fossa, a difficult entity.

Materials And Methods:

A prospective observational study was conducted on 100 cases in Department of Surgery, RIMS, Imphal, between September 2019 to August 2021 on patients aged between 10-80 years with a mass in RIF in surgery ward excluding female patients with pathologies related to uterus and its adnexa or mass arising from parietes, vascular lesions and bony swelling. Independent variables were age, sex, marital status and occupation. Dependent variables included management, complications and manifestations. Study tools were Ultrasonography of whole abdomen, computed tomography (CT) scan abdomen. A proforma designed was used to record relevant information for each individual patient. Final diagnosis and the treatment given along with the outcome was recorded and follow up done for a

period 6 months. Statistical analysis was carried out using SPSS version 21.0 IBM. Mean, median, standard deviation, percentage, proportion, chi-square test for nominal variables and students' t-test for ordinal variables. The p-value of less than 0.05 was taken as significant.

Ethical issues: Approval from the Research Ethical Board, Regional Institute of Medical Sciences, Imphal, Manipur was obtained. Confidentiality and privacy were maintained.

Results:

Analysis of this cohort showed 86 (86%) of cases were related to appendicular pathology either in the form of appendicular mass or appendicular abscess. 6% of ileocecal tuberculosis and 7% of carcinoma caecum. Majority of the cases belongs to age 31-40 years (39%) followed by age group between 21-30 years (29%). Minimum number of cases reported from same age groups 51-60 years and 61-70 years (5%), appendicular mass manifested most commonly in age group 31-40 years. (39%) and followed by 21-30 years (29%). Appendicular abscess was common in the 21-40 age group (86%). Ileocaecal tuberculosis was common in the middle age group (i.e., 31-40 years and 41-50 years) covering about 80% of cases. Carcinoma caecum was common in older age group of 61-70yrs (40%) in the present study. Male:Female ratio – 0.6:0.4. Appendicular mass (39 cases, 62%), appendicular abscess (13 cases, 57%) was common in males. Incidence of ileocecal tuberculosis was more in males (5 cases, 83%). 35 cases (55%) of appendicular mass presented with fever and 40 cases (63%) presented with vomiting. Among the cases of appendicular abscess 14 cases (61%) presented with fever and 6 cases (26%) presented with vomiting. Out of 6 cases of ileocaecal tuberculosis, 3 cases (50%) presented with fever, 3 cases (50%) cases with vomiting and 4 cases (57%) cases with loss of weight. Among 7 cases of carcinoma caecum, 3 cases (43%) gave history of occasional vomiting and almost all cases gave history of loss of weight. Psoas abscess patient presented with fever only. Among carcinoma caecum patients the incidence was more in males (5 cases, 71%). 28 cases underwent for CT abdomen to confirm the diagnosis. Of the 100 cases, 62 cases were managed conservatively and 38 cases were managed surgically. All 23 cases of appendicular abscess were managed by

extraperitoneal drainage and subjected to interval appendicectomy 6-8 weeks later. Four out of 6 cases of ileocaecal tuberculosis were managed surgically and rest of the cases managed by Anti Tubercular Therapy (ATT) as patients were not fit for surgery. Five out of 7 cases of carcinoma caecum were managed surgically, 2 cases were managed with palliative chemotherapy as mass is unresectable and

patients were not fit for surgery. Out of 6 cases of ileocecal tuberculosis, 4 cases were managed surgically by limited ileocecal resection, rest of 2 cases were managed by ATT. Out of 7 cases of carcinoma caecum, 5 were managed surgically by right hemicolectomy and rest 2 cases are managed by palliative chemotherapy. In case of psoas abscess, patient was managed by abscess drainage.

Table 1. Age wise distribution of cases.

Sl No.	Age in years	Appendicular mass	Appendicular abscess	Ileocaecal tuberculosis	Carcinoma caecum	Psoas abscess	Total No. of cases	Percentage (%)
1	11-20	9	2	1	0	1	13	13
2	21-30	19	10	0	0	0	29	29
3	31-40	25	10	3	1	0	39	39
4	41-50	6	0	2	1	0	9	9
5	51-60	2	1	0	2	0	5	5
6	61-70	2	0	0	3	0	5	5
	Total	63	23	6	7	1	100	100

Table 2: Histopathological examination report of resected specimens.

Sl. No.	Pre-operative diagnosis	No. of surgeries	Surgery performed	Histopathology report
1	Appendicular pathology	51	Appendicectomy	Appendicitis
2	Ileocaecal tuberculosis	4	Limited ileocaecal resection	Ileocaecal tuberculosis
3	Carcinoma caecum	5	Radical right hemicolectomy with ileotransverse colon anastomosis	Well differentiated adenocarcinoma

Table 3: Details of surgery as per diagnosis.

Sl No.	Diagnosis	Emergency appendicectomy	Extraperitoneal drainage of abscess	Limited ileocaecal resection	Radical right hemicolectomy with ileotransverse colon anastomosis	Interval appendicectomy
1	Appendicular	6	0	0	0	35

	mass					
2	Appendicular abscess	0	23	0	0	10
3	Ileocaecal tuberculosis	0	0	4	0	0
4	Carcinoma caecum	0	0	0	5	0
5	Psoas abscess	0	1	0	0	0
	Total	6	24	4	5	45

Discussion:

According to R.C. Nagar *et al*⁵ appendicular mass was more common in 3rd, 4th and 2nd decades of life. In our study also appendicular mass was more common in 3rd and 2nd decade followed by 4th and 1st decade. According to Edward L Bradley III *et al*⁶ mean age at which appendicular abscess occurred was 40.7 ± 2.7 . In our study it was more common in 3rd and 2nd decade.

The highest incidence of ileocecal tuberculosis was found between 20-40 years according to Prakash *et al*.⁷ According to Bhansali SK⁸ two third of his patients were in 3rd and 4th decade. According to study of Amin *et al*⁴ carcinoma caecum was more common in age group between 45-65 years. In our study, carcinoma caecum was more common in 6th decade followed by 5th decade.

In this study the incidence of carcinoma caecum was higher in males (71%) than females (29%). In a study by Pescatori *et al*⁹, 71% of patients were males and 29% were females which was similar to our study. In the series done by McDermott *et al*¹⁰, 51% were males and 49% were females. In our study 55% of patients with appendicular mass presented with fever and 63% with vomiting and no one with weight loss which was similar to the study conducted by Erik Skoubro *et al*¹¹ in which 55% of his cases experienced febrile episode with temperature $>39^{\circ}\text{C}$.

Tuberculous enteritis is commonest in the ileocaecal region in a series conducted by Prakash *et al*⁷ and also in a series conducted by Bhansali S.K.⁸ followed by involvement of ileum as the next common site. In the present study, 83% of cases, duration of symptoms

between 1 to 3 months, 17% of cases presented between 4 to 6 months which was contradictory to study by Prakash A⁷ in which 27% of cases had duration of symptoms <6 months and 43% cases had duration ranging from 6 months to 3 years. Rest ranged more than 3 years. According to Kelly J *et al*¹² a high index of suspicion should be maintained for ileocecal tuberculosis in patients with appropriate clinical features, even if classical risk factors for tuberculosis are absent.

Carcinoma caecum accounted for 18% of the colorectal cancers according to Crerand S *et al*¹³, according to their study carcinoma caecum was more common in patients over 69 years and in elderly females. In our study all patients have altered bowel habits. All the patients had mass in the right iliac fossa and it was associated with tenderness. Study done by Goligher JC¹⁴ also supports this.

Investigations formed an important part of management of patients with mass in right iliac fossa. According to Ripolles T *et al*¹⁵ diagnosis of acute 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 97 patients and all the cases were correctly diagnosed.

According to Gahukamble DB and Gahukamble LO¹⁶ "in situ" delayed appendicectomy seems beneficial for all the patients who respond well to the initial management of appendicular mass. The management of appendicular mass is surrounded with controversy. According to Garba ES and Ahmed A¹⁷ 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. But according to Arshad M *et al*¹⁸ early appendicectomy is a safe and superior option in patients with appendicular mass compared to conventional treatment. Deu and Ghosh S¹⁹ favour operative management of appendicular mass by experienced surgeons thus obviating the old practice of conservative treatment followed by interval appendicectomy. But Erik Skoubo *et al*¹¹ says that conservative management of appendicular mass is successful in most cases and complications rates seems lower than with early operative treatment. In the present study, all those who underwent interval appendicectomy, the specimen was sent for histopathological examination and all were reported as chronic appendicitis.

In the present study ultrasound was done for all patients of appendicular abscess and computed tomography was done to confirm the diagnosis. According to literature, the diagnostic accuracy with computed tomography is 92-97% sensitivity, 85-94% specificity, 90-98 % accuracy.²⁰

Hypertrophic ileocaecal tuberculosis should be considered in the differential diagnosis of abdominal pathology located in the right lower quadrant.²¹

In the present study, among the 4 surgically treated cases, 4 cases underwent limited ileocaecal resection. According to a study done by Byrone HB and Mamn CV²² resection rather than bypass of the diseased bowel is the preferred surgical treatment. Resection right hemicolectomy should be carried out where it is possible.²³ In certain circumstances (e.g. poor general condition or concurrent procedure making a lengthy procedure unwise), a temporary ileotransverse colostomy is a sensible compromise. This is supported by Anand SS series²⁴.

In the present study, 4 cases of carcinoma caecum underwent right hemicolectomy, 2 cases were managed by palliative chemotherapy. According to Goligher JC,¹⁴ 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 5 biopsy specimens of carcinoma of caecum, all were sent for

histopathological examination and all cases are reported with well differentiated adenocarcinomas.

Conclusion:

Appendicular lump (63%) was the commonest condition causing mass in the right iliac fossa followed by appendicular abscess (23%), Ileocecal tuberculosis (6%) carcinoma caecum (7%) and Psoas abscess (1%). Mass in right iliac fossa was common in the age group of 20-40 years. 19% of our patients presented with complaints of mass in the right iliac fossa. Fever, vomiting and loss of weight were the common associated symptoms. Overall incidence was more in males as compared to females (1.7:1) Carcinoma caecum was more common in males 79 % as compared to females 21%. In our study, 39% of the patients were managed surgically and 61% was managed conservatively. Right iliac fossa mass in this study are comparable with most of the literature reviewed. While common etiologies should never be overlooked, rare things should also be kept in mind and special investigations should be used judiciously to further improve the diagnostic accuracy.

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