



DIFFERENTIAL DIAGNOSIS OF RIGHT ILIAC FOSSA MASS AND THEIR MANAGEMENT

General Surgery

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ABSTRACT

Background: Right iliac fossa mass is a common clinical entity encountered in routine surgical practice. The mass arises from different anatomical structures with varied aetiologies that require a high clinical suspicion in its management. The reason being that the mass may range from being benign to most aggressively malignant lesion which encompasses various specialities of surgery like genitourinary, vascular, gynaecological and colorectal surgery. **Methods:** This was a prospective observational study conducted between October 2021 and September 2022 in Silchar Medical College and Hospital, Silchar, Assam. 45 cases were studied after detailed history and physical examination, relevant investigations were done, and different surgical procedures done were noted and histopathological examination of resected specimens was done. **Results:** In this series out of 45 patients studied, 35 patients (77.5%) were diagnosed to have appendicular mass, 05 cases (11%) appendicular abscess, 02 cases (4.5%) ileocaecal TB, 02 cases (4.5%) psoas abscess, 01 cases (2.5%) Ca Caecum. Most commonly encountered in 3rd decade followed by 4th decade of life with male predominance. **Conclusions:** RIF mass is a challenging clinical scenario for the surgeons. Keeping in mind the various differential diagnosis with good clinical acumen supported by appropriate investigations, patients with RIF mass can be managed appropriately either by conservative or surgical management.

KEYWORDS

Right iliac fossa mass, Clinical presentation, Management

INTRODUCTION

Right iliac fossa (RIF) mass is one of the major problems faced in surgical practice. The mass is either intra-abdominal or parietal in origin.¹ The aetiology of these masses differ in different age groups and sexes. Hence, it presents a diagnostic challenge to the surgeon. Usually, RIF mass arises from the appendix, caecum, terminal part of the ileum, lymph nodes, iliopsoas sheath, and retroperitoneal connective tissue. The common swellings within RIF are appendicular mass, appendicular abscess, caecal carcinoma, and ileocecal tuberculosis. Rare conditions include Non-Hodgkin's lymphoma, amoeboma, lymph node mass, iliopsoas mass, retroperitoneal mass, actinomycosis, and Crohn's disease. Urologic and gynecologic masses may also present in RIF.² An important differential diagnosis is between an appendicular mass, appendicular abscess, carcinoma cecum, and ileocecal tuberculosis. An inflammatory mass in the RIF region is mainly seen in appendicular abscess cases and rarely arises with suppurating iliac lymph nodes or a psoas abscess. In India, 3-20% of patients have intestinal obstructions due to tuberculosis.³ Caecal carcinoma is more common in high socio-economic people because of their diet habits, including low fibre and purified diet. The availability of better antibiotics, care, and anaesthesia is improving the management of appendicular mass.

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 hand maiden of a successful operation."⁵ The mass has varied anatomical and etiological origin and requires versatility in its management. Right iliac fossa has 8 anatomical entities which includes appendix, caecum, terminal ileum, lymph nodes, iliac artery and vein, retroperitoneal connective tissues, ilio psoas muscle, and iliac bone, and other organs in the neighborhood like kidney, gallbladder, uterus, ovaries, urinary bladder and testis whose pathology may extend into this region.

Right iliac fossa masses arise either from the normal structures present in area between symphysis pubis, umbilicus and anterior superior iliac spine or sometimes the mass arises from the structures abnormally located in the region.^{6,7} In this study the patients were subjected to radiological and pathological investigations.⁸ The most common differential diagnosis encountered in order of frequency was appendicular mass, appendicular abscess, ileocaecal TB, right ovarian mass, Ca caecum, right ectopic kidney, Rectus sheath hematoma, psoas abscess and amoeboma.^{9,10}

This prospective observational study was undertaken at Silchar Medical College And Hospital, Silchar, Assam to study the varied etiologies of right iliac fossa mass, their clinical presentation, underlying pathologies and different methods of management.

METHODS

Inclusion criteria

Inclusion criteria were all cases of age between 18- 60 years that presented during the study period having mass in RIF; patients of both sex; patients with mass in RIF found incidentally on examination and by investigations are included in the study.

Exclusion criteria

Exclusion criteria were patients having mass in RIF due to gynecological or urological conditions; patients with debilitating illness like chronic renal failure, acute, Coronary artery disease, Liver failure etc.

Method of collection of data

Thorough clinical history and physical examination of all case was done.

The following investigations were done to the patients who met the inclusion criteria:

- Routine blood and urine routine.
- Urea, Creatinine and electrolytes.
- Stool for occult blood, ova and cyst.
- Plain X ray of chest and abdomen.
- USG abdomen and pelvis.
- CECT of abdomen and pelvis.
- Colonoscopy and biopsy in suspected cases of carcinoma caecum.
- Diagnostic laparoscopy and biopsy in selected cases.

Various surgical procedures in the form of:

- Interval appendectomy.
- Radical right hemicolectomy and ileo transverse colon anastomosis.
- Limited ileo-colic resection and ileo ascending colon anastomosis.
- Extra peritoneal drainage of abscess.
- Intra peritoneal drainage of abscess.

These interventions are done as per need in each case. Histopathological examination of resected specimens were done.

Statistical analysis

Data was entered into Microsoft excel data sheet and was analyzed using SPSS 22 version software. Categorical data was represented in the form of frequencies and proportions.

RESULTS

Total number of cases considered in this study is 45, admitted in the Department of General Surgery, Silchar Medical College and Hospital,

Silchar, Assam. The results of the study are discussed as following.

Table 1: Causes Of Right Iliac Fossa Swellings.

Diagnosis	No. of cases	Percentage (%)
Appendicular mass	35	77.5
Appendicular abscess	5	11
Ileocaecal TB	2	4.5
Psoas abscess	2	4.5
Ca Caecum	1	2.5
Total	45	100

In this series out of 45 patients, 35 patients (77.5%) diagnosed to have appendicular mass followed by appendicular abscess (5 cases, 11%), ileocaecal TB (2 cases, 4.5%), psoas abscess (2 cases, 4.5%), Ca caecum (1 case, 2.5%)

In this series age varied from 12 years to 60 years. appendicular pathology is commonest in 3rd decade, ileocaecal TB in 3rd decade followed by 4th decade, psoas abscess in 5th decade and Ca caecum in 6th decade. (Table 2). In total of 45 patients, 26 (57%) were males and 19 (43%) were females.

In the present study pain was the commonest symptom of presentation seen in all cases, fever was present in 72% cases, vomiting was present in 46% cases, loss of weight and appetite was present in 28% cases, constipation was present in 22% cases, diarrhea was present in 6% cases, mass per abdomen was present in 30% cases.

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In the present study USG abdomen was done in all cases. colonoscopy was done in all cases of Ca caecum and multiple biopsies were taken. CECT abdomen was done in all case of Ca caecum for staging.

In the present study 37 cases (83%) were managed conservatively and 08 cases (17%) were treated surgically. All the cases of appendicular mass were managed conservatively and all 02 cases of ileocaecal TB were managed conservatively with ATT.

Patients with appendicular abscess and psoas abscess are managed by surgical drainage. Ca caecum patients are managed by radical right hemicolectomy with ileo- transverse colon anastomosis.

All patients who underwent interval appendectomy, HPE suggestive of chronic appendicitis. One patients of Ca Caecum undergone radical right hemicolectomy and HPE report came as well differentiated adenocarcinoma.

Table 2: Age Wise Distribution Of Causes.

Age in years	Appendicular mass	Ileocaecal TB	Appendicular abscess	Ca caecum	Psoas abscess	Total no of cases	Percent age (%)
18-20	7	0	2	0	0	9	20
21-30	12	1	1	0	1	15	33.5
31-40	11	1	1	0	0	13	29
41-50	3	0	1	0	1	5	11
51-60	2	0	0	1	0	3	6.5
Total	35	2	5	1	2	45	100

Table 3: Gender Wise Distribution Of RIF Mass.

Gender	RIF mass
Male	26
Female	19

Table 4: Presenting Symptoms Diagnosis Wise.

S. No	Diagnosis	Pain	Fever	Vomiting	Loss of appetite and weight loss	Constipation	Diarrhoea	Mass
1	Appendicular mass	35	21	12	0	0	6	9
2	Appendicular abscess	5	5	2	0	0	1	3

3	Ileocaecal TB	2	2	1	2	1	0	2
4	Psoas abscess	2	2	0	0	0	0	0
5	Ca caecum	1	0	0	1	1	0	1
	Total	45	30	15	3	2	7	15

Table 5: Endoscopy And Radiological Imaging As Per Diagnosis.

S. no	Diagnosis	USG	Colonoscopy	CT scan
1	Appendicular mass	35	0	0
2	Appendicular abscess	5	0	0
3	Ileocaecal TB	2	0	0
4	Psoas abscess	2	0	0
5	Ca caecum	1	1	1
	Total	45	1	1

Table 6: Management As Per Diagnosis.

Diagnosis	No. of cases	Conservative management	Surgery
Appendicular mass	35	35	0
Appendicular abscess	5	0	5
Ileocaecal TB	2	2	0
Psoas abscess	2	0	2
Ca caecum	1	0	1
Total	45	37	08

Table 7: Details Of Surgery As Per Diagnosis.

Diagnosis	Intraperitoneal drainage of abscess	Interval appendectomy	Limited resection with ileo-ascending colon anastomosis	Radical right hemicolectomy with ileo-transverse colon anastomosis	Extraperitoneal drainage of abscess
Appendicular mass	0	26	0	0	0
Appendicular abscess	2	0	0	0	5
Ileocaecal TB	0	0	0	0	0
Psoas abscess	0	0	0	0	2
Ca caecum	0	0	0	1	0
Total	2	26	0	1	7

Table 8: HPE Report Of The Resected Specimens.

Pre op diagnosis	No of surgeries	Surgery	HPE report
Appendicular pathology	26	Interval appendectomy	Appendicitis
Ca caecum	1	Radical Right hemicolectomy	Well differentiated adenocarcinoma



Fig 1. Carcinoma Caecum

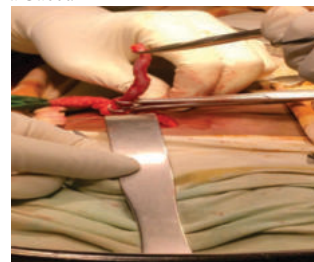


Fig 2-Interval Appendectomy

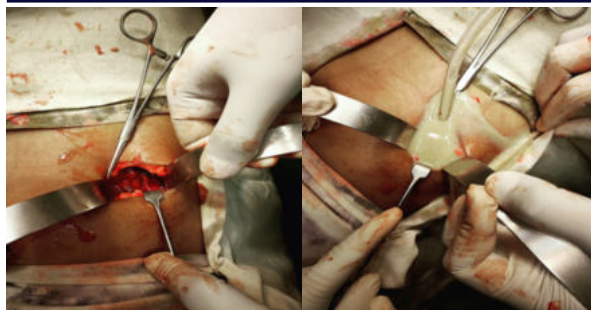


Fig3

Fig4

Fig- Intraoperative drainage of appendicular abscess

DISCUSSION

In the study, 45 cases of mass in right iliac fossa studied. This study was carried out to study the various conditions/diseases presenting as mass in the right lower abdomen with relation to incidence, age, sex, clinical resensation, management of the condition, histopathological examination of resected specimens. In this study, 45 cases with right iliac fossa mass were admitted in Department of General surgery, Silchar Medical College and Hospital, Silchar, Assam during the period from October 2021 to September 2022 were taken up. After detailed history and thorough clinical examination, provisional diagnosis was made. Later on patients were subjected to relevant investigations and operations if necessary and final diagnosis was made after the investigations and/or operation. The following are the observation and inference which was taken out. The distribution of various pathology according to the order of frequency is shown in Table I. Appendicular pathology (appendicular mass and abscess) was the most common disease encountered followed by ileocaecal tuberculosis, psoas abscess and Ca caecum.

In a prospective study conducted by Reddy GVVP, Konappa V et al. In this series out of 50 patients, 23 patients (46%) diagnosed to have appendicular mass followed by ileocaecal TB (10 cases, 20%), appendicular abscess (8cases, 16%), Ca caecum (6 cases, 12%), psoas abscess (3 cases, 6%). In this series age varied from 12 years to 60 years. Appendicular pathology 28(56%) were males and 22 (44 %)were females.¹¹

In a study conducted by Prakesh Mr et al . 50 patients with signs and symptoms of RIF mass were included, among which 62% of cases were related to appendicular pathology either in the form of appendicular mass (48%) or appendicular abscess (14%), ileocaecal TB (16%), Ca caecum (12%) other (10%).¹²

In an observational study of RIF mass conducted by Akhtar T et al. reported that Appendicular pathology 33.7% was the commonest finding followed by caecal carcinoma (9.8%), ileocaecal TB (9.8%), psoas abscess (7.6%), others (39%).¹³

In a prospective study conducted by Shashikala et al in Victoria hospital affiliated to Bangalore Medical college and research institute in 50 patients the most common cause of RIF lump was appendicular mass, followed by ileocaecal tuberculosis, appendicular abscess and ceacal carcinoma.¹⁴

In a prospective study conducted by Reddy NMV et al. reported that out of 60 patients having RIF mass : appendicular pathology was found in 70% either in form of appendicular mass or abscess, ileocaecal TB in 20%, Ca caecum in 6.6% and others 3.3% cases.¹⁵

In a study conducted by Shetty SK et al. Appendicular pathology was found in 52%, ileocaecal tuberculosis in 22% of the cases, Ca caecum in 16% of cases, psoas abscess in 8% of the cases.¹⁶

In a prospective study conducted by Hussain et al in Liaquat University, Jamshoro, Abudabi The most common cause of right iliac fossa mass was ileocaecal tuberculosis (33.9%) followed by appendicular abscess in (23.2%) and carcinoma caecum in 17% and psoas abscess in 4.5%.¹⁷

Study conducted by Venkatesh Subbiah et al. study showed that appendicular mass was the commonest pathology in the right iliac fossa, followed by carcinoma of the caecum. The most frequently

affected age group was 51 to 60 years, and females were affected more. Cases of ileocaecal tuberculosis received medical care while surgery was the mainstay of treatment for Ca caecum, appendicular abscess and psoas abscess.¹⁸ Results of our study correlated with most of the studies discussed here.

CONCLUSION

In the present study the most common cause of RIF mass encountered was appendicular pathology followed by ileocaecal TB, psoas abscess and carcinoma caecum. Majority of the patients presented in their 3rd decade followed by 4th decade of life with male predominance. All patients of appendicular mass were initially managed conservatively, and who responded well, were advised to undergo interval appendectomy. All Cases of appendicular abscess were treated by open drainage and appropriate antibiotic therapy. Patients with ileocaecal tuberculosis was common in age group of 30-50 years, with male predominance were managed conservatively with ATT. Only 01 cases of RIF mass were diagnosed to have Ca Caecum and were managed by radical right hemicolectomy with ileo-transverse anastomosis, followed by adjuvant chemotherapy. Psoas abscess case was managed by extraperitoneal drainage and appropriate antibiotic therapy. RIF mass is a challenging clinical scenario for the surgeons. Keeping in mind of differential diagnosis with good clinical examination aided with appropriate investigations patient with RIF mass can be managed appropriately either by conservative or surgical management.

REFERENCES

1. Amarendra Prasad N, Awaru AD TA. Clinicopathological Study of Mass in Right Iliac Fossa. J Med Sci Clin Res. 2018;6:720-80.
2. M S. A Clinical Study of Right Iliac Fossa Mass. Int J Surg. 2013;30:1-36.
3. Ullah S, Khan M, Ahmad S, Mumtaz N. Conservative treatment of appendicular mass without interval appendectomy: Is it justified? J Postgrad Med Inst. 2007;21:55-9.
4. Erdog'an D, Karaman I, Narci A, Karaman A, Cavusog'lu YH, Aslan MK, et al. Comparison of two methods for the management of appendicular mass in children. Pediatr Surg Int. 2005;21:81-3.
5. Bailey H. Bailey hamilton's demonstrations of physical signs in surgery. In: Clain A, ed. 18th edn. London: ELBS with Butterworth Heinmann; 1997.
6. Panarese A, Pironi D, Pontone S, Vendettuoli M, De Cristofaro F, Antonelli M, et al. A case of symptomatic mass in RIF: a Bermuda triangle which often lies the right diagnosis. Ann Ital Chir. 2014;24:85-8.
7. Sunderesh N Jr, Narendran S, Ramanathan M. evaluation of pathological nature of RIF mass and its management. J Biomed Sci Res. 2009;1(1):55-8.
8. Turnage RH, Mizell J, Badgwell B. Sabiston book of General Surgery. Chapter 43. South Asia Edition; 2017: 1079.
9. Howell S, Knappton PJ. Ileo-caecal tuberculosis. Gut 1964;5:524-9.
10. Dnyanmote AS, Sinha N, Chavan S, Sable S. Clinico pathological study of RIF mass. Webmed Central General Surg. 2014;5(11):26-30.
11. Reddy GVVP, Konappa V, Reddy VM, Kumar D. Spectrum of right iliac fossa mass differential diagnosis and their management. Int Surg J 2019;6:2312-7.
12. Prakash MR, Dutt SC. Clinical study of Mass in Right Iliac Fossa. Int J Sci Res. 2016;6(5):1-4.
13. Akhtar T, Sharif A, Akhtar M, Zia N, Hanif M. Mass in Right Iliac Fossa- Clinicopathological Evaluation. J Rawalpindi Med Coll. 2017;21(1):45-7.
14. Shashikala V, Victor AJ, Sonia Rani PB. Right Iliac Fossa Mass: A prospective study. Int J Biomed Adv Res. 2016;7(8):388-92.
15. Reddy NMV, Reddy RM. Study of Mass in Right Iliac Fossa. J Den Med. 2016;15(8):81-4.
16. Shetty SK, Shankar M. A clinical study of right iliac fossa mass. Int J Surg. 2013;30(4):1-11.
17. Hussain A, Shah SKA, Bhatti NK, Ahmed Z, Memon HNA, Shah SZA. Right iliac fossa mass, clinical spectrum. Prof Med J. 2016;23(8):953-8.
18. Venkatesh Subbiah et al./ International Journal of Surgery and Medicine (2021) 7(6):1-5