



Clinical Study of Right Iliac Fossa Mass Pathology At: Central Vidarbha Region

Anupam Kakade¹, Mangesh Padamwar^{*1}, Ajonish Kamble¹, Yashwant Lamture¹, Meenakshi Yeola²

¹Department of General Surgery, Datta Meghe Medical College, Shalinitai Meghe Hospital and Research Centre (Datta Meghe Institute of Medical Sciences), Higana, Nagpur, Maharashtra - 441110, India

²Department of General Surgery, Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences, Sawangi Meghe Wardha, Maharashtra - 442004, India

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ABSTRACT

One of the most common problems experienced in surgical practice, which challenges the surgeon and needs the ability to diagnose through knowing the anatomy and pathological process that can occur inside the abdomen, is a mass in the right iliac fossa. The purpose of this research was to examine clinical appearance, differential diagnosis and treatment methods for patients with the right iliac fossa. Study was carried out in the Dept. of General Surgery at Jawaharlal Nehru Medical College and Acharya Vinoba Bhave Rural Hospital, Sawangi (M), Wardha, Maharashtra, between August 2018 to December 2019. 43 patients with signs and symptoms of right iliac fossa mass were studied by taking detailed clinical history, physical examination, and were subjected to various investigations. In the present study appendicular mass constituted 60.46%, appendicular abscess 09.30%, ileocaecal tuberculosis 06.97 %, carcinoma caecum 13.95 %, intussusception 02.32%. Patients presented with constitutional symptoms like pain, fever, vomiting, weight loss. Appendicular lump remains the most common entity in right iliac fossa mass patients. Ileocaecal tuberculosis is one of the most common differential diagnosis to be considered for pain abdomen evaluation in rural population. Conservative treatment followed by interval appendicectomy remains the main management modality in appendicular lump. The rare cause of mass in right iliac fossa as intussusception should be kept in mind.



*Corresponding Author

Name: Mangesh Padamwar

Phone: 07507748914

Email: ambad.sawan@gmail.com

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INTRODUCTION

A mass per abdomen has always been considered to be a temple wonders or Pandora's magic box (Bhan-

dari et al., 2009). Despite the advancements in the field of diagnosis, the surprises never ceases, hence the abdomen has been rightly called temple of surprises. Volume in the right iliac fossa is one of the most common problems encountered in surgical practice, with various diagnosis of differentials. Most cases require surgical intervention and most are curative.

The varied etiology of these conditions presents a diagnostic challenge to the surgeon, as appropriately Sir Hamilton Bailey said, "The handmaid of a good procedure is a valid diagnosis." The mass in the right iliac fossa comes primarily from the appendix, caecum, terminal portion of the ileum, lymph nodes, sheath of the ileopsoas and connective tissue of the retroperitoneum.

In this area, an inflammatory mass is most frequently associated with an appendicular abscess, and rarely inflammatory swelling may occur in connection with the suppuration of iliac lymph nodes or psoas. Between an appendicular mass, an appendicular abscess is an essential differential diagnosis. Appendicular population management appears to be taking turns with the development of effective drugs, treatment. Appendicitis may rarely occur in connection with caecum carcinoma, particularly in elderly patients (Stuber *et al.*, 2001).

If the surgeon finds an unsuspected abscess during appendectomy, it is generally better to continue with the removal of the appendix. If the abscess is wide and further dissection is risky, drainage alone would be sufficient.

Not infrequently a surgeon encounters a patient seeking consultation regarding the presence of a mass in the abdomen. Sometimes while examining the abdomen the clinician comes across a lump. The diagnosis of an abdominal mass requires experience and skill. So the diagnosis of the abdominal masses are mainly depends on clinical examination and investigations.

MATERIALS AND METHODS

Study was carried out in the Dept. of General Surgery at Datta Meghe Medical College, Shalinitai Meghe Hospital & Research Centre, Nagpur in collaboration with Jawaharlal Nehru Medical College and Datta Meghe Institute of Medical Sciences(DMMC), Wardha, Maharashtra, between August 2018 to December 2019. Total 43 cases of lump in right iliac fossa were studied prospectively.

Inclusion criteria

1. Patients presenting with right iliac fossa mass associated with acute abdominal conditions.
2. Patients presenting with mass in right iliac fossa associated with chronic abdominal conditions.
3. Cases which were found incidentally on examination and investigation.

Exclusion Criteria

1. Patients having abdominal lump/mass other than in right iliac fossa.
2. Bony swellings of the region.
3. Children less than 10 yrs.

4. Gynaecological causes of RIF mass.
5. Abdominal wall swelling.

Mode of Study

The clinical history is taken as orientation from SNAPPS technique which provides explicit steps to the students and the responsibility of expressing their clinical reasoning, expressing uncertainties and probing the preceptor which leads to identification of issues for the self-study which in turn enhances the data quality and reliability (Jain *et al.*, 2018).

Relevant clinical results were reported in a case sheet in proforma. Patient underwent methodical physical examination to determine his general state. Local abdomen examination was performed, and relevant findings were reported. Rectal examination was performed in all cases, in female patients as per vaginal examination. To develop the diagnosis, the necessary and routine investigations were conducted. Relevant antibiotics were used to treat respiratory and other infections and patients were made ready for surgical operation. Wherever needed, adequate preparation of the intestine was done with oral antibiotics and mechanical washing of the intestines. Postoperative parenteral antibiotics were given in those cases. All solid organs in the abdomen were examined to rule out any other pathology intraoperatively.

Based on the type of pathology specific surgical procedures were performed. After 48-72 hours, drains were removed, and sutures were removed on the 7th to 10th post operational day. Many of the patients who underwent surgery had uneventful recovery.

OBSERVATION AND RESULTS

In our study, 43 cases of "Mass In Right Iliac Fossa" were studied over a period from Aug 2013 to Sept 2015.

Table 1 shows incidence of various pathologies of RIF mass and no of cases with its percentage.

Table 2 shows that, in our series, it was found that the youngest patient was 10 years of age who had appendicular lump and the oldest was 72 years of age admitted with carcinoma caecum and mean age of right iliac fossa mass presentation was 37.41 years

Table 3 shows 26 cases of Appendicular lump, 04 cases of appendicular abscess, 03 patients of Ileocaecal tuberculosis, 06 were carcinoma caecum, 03 ileopsoas abscess and 01 patient of intussusceptions.

Table 1: Showing Incidence of Various Pathologies of RIF Mass

Sr. No	Diagnosis	No. of Cases	Percentage (%)
1	Appendicular Lump	26	60.46
2	Appendicular Abscess	04	09.30
3	Ileocaecal Tuberculosis	03	06.97
4	Carcinoma Caecum	06	13.95
5	Ileopsoas Abscess	03	06.97
6	Intussusception	01	02.32
7	Total	43	100

Table 2: Showing Age Incidence

Sr. No.	Diagnosis	No. of Cases	Age - Range (in years)						
			10-20	21-30	31-40	41-50	51-60	61-70	>70
1.	Appendicular Lump	26	10	05	03	05	02	01	00
2.	Appendicular Abscess	4	00	02	00	01	00	01	00
3.	Ileocaecal Tuberculosis	3	00	01	00	00	02	00	00
4.	Carcinoma Caecum	6	00	00	02	00	01	02	01
5.	Ileopsoas Abscess	3	01	00	01	01	00	00	00
6.	Intussusception	1	00	00	01	00	00	00	00

Table 4 shows surgical and conservative management of patients.

Table 5 shows from study total of 34 patients underwent surgical treatment of which, 08 patients (23.52%) underwent early appendicectomy, 12 patients (35.29%) undergone interval appendicectomy followed by Oschner Sherren Regimen, 04 patients (11.76 %) not responded to Oschner Sherren Regimen and showed increase in local signs and systemic signs and posted for appendicectomy after 48 hrs of admission.

From 6 patients of carcinoma caecum only 02 patients (04.65%) were posted for Right Hemicolectomy with Ileotransverse Anastomosis, rest 04 patients were with advanced disease and unfit for surgery.

All 3 patients (100%) of ileopsoas abscess were treated with extraperitoneal drainage of abscess. Exploratory Laparotomy with Drainage of Appendicular Abscess done in all 4 patients (100%). Resection anastomosis was done for a case of intussusceptions.

RESULTS AND DISCUSSION

The most common disease presenting as right iliac fossa mass was Appendicular mass followed by Carcinoma caecum, Appendicular abscess, Ileocaecal tuberculosis, Ileopsoas abscess, Intussusception in that order. Similar results were obtained in a study conducted by Juniorsundresh *et al.* (2009).

Appendicular Lump

In our study Appendicular Lump was found in 60.46% of patients, which was the main presenting diagnosis of the study population.

All the patients came to the hospital with pain problems in the abdomen less than a month.

Several patients had nausea and vomiting associated with it. 26.92 percent of the patients had fever and 65.38 percent had vomiting.

In our study appendicular mass was more common in males (61.53%) than females (38.46%) which is comparable with the studies by Safir Ullah *et al.* [M-60%] (Ullah *et al.*, 2007), Bhumika Jayantilal Patel *et al.* [M-68.5%] (Patel and Patel, 2016).

Table 3: Showing Duration of Symptoms (Abdominal Pain)

Sr No	Diagnosis	No Of Cases	1-7 days	8-30 days	1-3 months	3-6 months	>6 months
1	Appendicular Lump	26	19	07	00	00	00
2	Appendicular Abscess	04	04	00	00	00	00
3	Ileocaecal Tuberculosis	03	00	00	00	02	01
4	Ca Caecum	06	00	00	00	03	03
5	Ileopsoas Abscess	03	00	02	01	00	00
6	Intussusception	01	01	00	00	00	00

χ^2 -value=88.11, p=0.0001, Significant.

In present study, maximum age incidence was between 10-20 years i.e., more common in 1st & 2nd decade, which was comparable with findings suggested by authors like Safir Ullah et al [30-40 yrs] (Ullah *et al.*, 2007), Bhumika Jayantilal Patel et al [20-30yrs] (Patel and Patel, 2016).

All patients (100 percent) with pain abdomen, 65.38 percent with vomiting and 26.92 percent with fever were present in our sample.

Abdominal pain (87.5 percent), vomiting (50 percent) and fever (93 percent) are the most frequent symptoms; these results are also comparable with studies by Ullah *et al.* (2007), and Skoubo-Kristensen and Hvid (1982).

In present study abdominal ultrasound was done in all patients. The diagnosis was made in correlation with history and clinical findings and confirmed by ultrasound.

In this study 02 patients (07.69%) out of 26 cases of Appendicular Lump were treated conservatively and 24 patients (92.30%) were treated surgically. 08 patients (23.52%) underwent early appendicectomy, 04 patients (11.76%) who were kept on Oschner-scherren regimen but not responded well.

Hence converted to appendicectomy, 12 patients (35.29%) who were kept on Oschner-scherren regimen, responded well and subsequently undergone interval appendicectomy.

Our findings correlates with finding suggested by Muhammad Ayub Jat et al (Jat *et al.*, 2012), where 30 patients from study population of 60. i.e. 50% of patients underwent early appendicectomy.

According to Gahukamble DB "in situ" delayed appendicectomy seems advantageous to all patients who react well to the initial management of appendicular mass (Gahukamble and Gahukamble, 2000).

The option of treatment in patients with appendicu-

lar mass is conservative, followed by elective appendicectomy, according to Erdoğan *et al.* (2005).

The most critical conditions in determining for immediate appendicectomy are non-responsive to medical care and malignancy suspicion (Erdoğan *et al.*, 2005). Ullah *et al.* (2007), concluded that in the majority of patients conservative management is successful.

Appendicular Abscess

The management of appendiceal abscesses is still the topic of debate with many modes of treatment options available for the same.

In our study 50% of the cases were in the 2nd and 3rd decade and mean age at which appendicular abscess occurred was 44.50±19.68 yrs. Bahram et al (2011), who conducted a study of 46 patients of appendicular abscess and found out 31 male patients (67.39%) which correlates with our study (Bahram, 2011).

In our study, all patients with appendicular abscess with pain abdomen, Fever in 50% of patients, 100% of patients with vomiting that is comparable to Vishwanath V Shindholimath in 2011 (Shindholimath *et al.*, 2011).

Throughout our research, the USG abdomen was used for diagnostic confirmation and all cases were correctly identified as having appendicular abscesses.

Hornez E et al., reported that USG allowed the diagnosis of appendix abscess with a high accuracy rate (72.7%), when the sonographic examiner is a surgeon or an emergency physician, the sensitivity rate is better (98.4%) (Hornez *et al.*, 2009).

In our study all the 04 patients (100%) of Appendicular Abscess underwent drainage of abscess and appendicectomy at same setting which is supported

Table 4: Showing Mode of Management

Sr. No.	Diagnosis	No. of cases	Conservative Treatment	Surgical Treatment	Treatment
1.	Appendicular Lump	26	02	24	
2.	Appendicular Abscess	04	00	04	
3.	Ileocaecal Tuberculosis	03	03	00	
4.	Ca Caecum	06	04	02	
5.	Ileopsoas Abscess	03	00	03	
6.	Intussusception	01	00	01	
7.	Total	43	09	34	

χ^2 -value=23.79, p-value=0.0001, S, p<0.05

by Zarba Meli E et al (Zarba *et al.*, 1997), Who concluded that even in the case of an appendix abscess, abscess drainage appendectomy is not only a healthy operation with a low morbidity rate but also a option treatment that allows for a substantial reduction in hospitalization and health costs. No big morbidity was detected, nor mortality.

According to J. Gillick et al, Non-operative management of an appendix mass followed by elective appendectomy is a safe and effective method of management (Gillick *et al.*, 2001).

As stated by, Amer Hayat Khan et al, False diagnosis of an appendiceal or colonic tumor can be appalling in patients with an appendiceal mass and should be vigilant when adopting a conservative approach. It can be difficult to rule out proper participation in pathologies if we follow a cautious approach without using sophisticated analysis methods.

A conservative management is still a highly suitable method for the mass of appendices (Khan *et al.*, 2012). Treatment of patients with appendicular abscess remains uncertain, ranging from an emergency appendectomy to non-operational therapy, according to Hornez E et al.

In our study, we surgically treated all 04 patients with appendectomy with mild morbidity after surgery in the form of wound infection and one death due to septicaemia.

Ileocaecal Tuberculosis

Abdominal tuberculosis (TB) is the sixth most common form of extra-pulmonary site of infection after lymphatic, genitourinary, bone and joint, miliary and meningeal TB with a rising incidence in recent years. In lymphatic entity constitutional signs and clinical and cytological characteristics help to identify cases of peripheral tubercular lymphadenitis and can open new barriers to further studies involving the cytological characteristics of those cases (Gupta and Bhake, 2017).

In cases of pulmonary disease when effusion sets in, levels of Serum Interferon Gamma plays a major role as diagnostic and prognostic indicator (Ali *et al.*, 2017).

At the time of diagnosis comorbidities should be strictly ruled out as there is strong association between diabetes mellitus and tuberculosis (Cladius *et al.*, 2017).

The clinical manifestations of abdominal tuberculosis are non-specific and mimic various GI disorders and cause delay in diagnosis and management (Awasthi *et al.*, 2015).

In our study Ileocaecal Tuberculosis accounted for 06.97%. This slight difference in co relation values may be because of small sample size of our study. In our study 66.66% of cases were in 5th to 6th decade and mean age was 49 ± 16.52 yrs. It was more common in females (66.66%) than males, from the 32 cases of abdominal TB, 17 (53.13%) were females.

In present study, all patients (100%) presented with pain abdomen. Other presentations were fever (66.66% patients), weight loss in 33.33% patients and 33.33% with vomiting.

In our study all patients were subjected to USG abdomen and CECT of abdomen and all cases were suggestive of ileocaecal tuberculosis.

In our series all patients were managed conservatively with medical management with Antitubercular Drugs. Strongly supportive clinical characteristics with promising nonspecific research results are also indicator of antitubercular therapy in all endemic countries such as Nepal, Bangladesh and India (Sharma *et al.*, 2004).

Abdominal tuberculosis treatment is in no way different from that of other traditional anti- TB therapy.

DOTS regimens was used 4 drugs were given 3 times a week for the first two months. (intensive phase)

Table 5: Showing Types of Surgical Treatment

Sr. No.	Types of Surgery	No. of Cases (n=34)	Percentage
1.	Early Appendicectomy	08	23.52%
2.	OschnerSherren Regimen with Appendicectomy (Converted)	04	11.76%
3.	OschnerSherren Regimen followed by Interval Appendicectomy	12	35.29%
4.	Right Hemicolectomy with Ileotransverse Anastomosis	02	05.88%
5.	Exploratory Laparotomy with Drainage of Appendicular Abscess	04	11.76%
6.	Extraperitoneal Drainage of Ileopsoas Abscess	03	08.82%
7.	Resection Anastomosis	01	02.94%
8.	Total	34	100%

Tab INH 600mg thrice a week for 2 months

1. Cap Rifampicin 450-600mg thrice a week for 2 months
2. Tab. Pyrazinamide 1500mg thrice a week for 2 months
3. Tab. Ethambutol 1200mg thrice a week for 2 months. After 2 months only two drugs were given for (continuation phase)-4 months
4. Tab. INH 600mg thrice a week for 4 months
5. Cap Rifampicin 450mg thrice week for 4 months. (Category I regimen (2(HRZE) 3 4(HR) 3 (DOTS) (Lieberman *et al.*, 2001).

Carcinoma Caecum

In present study carcinoma caecum accounted for 13.95% of patients. In our study, majority of patients were from 3rd and 6th decade of life and mean age was 57.16 ± 16.77 yrs, which correlates with finding of Bafandeh Y et al who studied Four hundred and eighty consecutive symptomatic patients in which the mean age of presentation was 42.73 to 16.21 years (Bafandeh *et al.*, 2008).

Graham et al, in 2012 conducted a study where he estimated the mean age of presentation in patients of carcinoma of caecum was 34.37 years (Graham *et al.*, 2012).

In our study of 43 patients, 6 were of carcinoma caecum of which 4 were females and 2 males, suggesting female preponderance in study population. Mäkinen MJ, conducted a study of 27 patients of Carcinoma Caecum where Eight patients were male and 19 were female (Mäkinen *et al.*, 2001).

In our study out of 06 patients of Ca Caecum, 03 patients (50%) of Carcinoma Caecum gave history of pain in abdomen over a period of 3 to 6 months, followed by 03 patients (50%) over a period of more than 6 months, 01 patient (16.66%) over a period of 8 to 30 days.

Majority of patients 05 (83.33%) in Carcinoma Caecum presented with loss of weight, 02 patients (33.33%) had vomiting, 01 patient had weight loss and 01 patient had only vomiting.

According to Goligher JC, in majority of cases of carcinoma caecum, persistent but not very extreme abdominal pain was felt in the right iliac fossa or subcostal or epigastrium frequently associated with local tenderness. Abdominal mass was felt in few cases usually in the right iliac fossa (Goligher, 1992).

In our sample, the mean Hb percentage for Ca Caecum was 10.73 ± 3.06 , which is consistent with Ho CH et al's results, which performed a retrospective analysis of 101 patients, and reported that the mean hemoglobin was 11.8 g / dL (Ho *et al.*, 2008).

All the 06 patients were subjected to Ultrasonographic evaluation and yielded the diagnosis of Carcinoma Caecum which can be supported by the statement of D Martinez- Ares et al who concluded that abdominal ultrasound presents high sensitivity, specificity, PPV and NPV in the diagnosis of colon cancer. (Martínez-Ares *et al.*, 2005).

Colonoscopy is currently the most accurate and the most complete method of examining the large bowel.

In our study out of 06 patients 04 were subjected to colonoscopy and revealed growth at caecum.

All 06 patients were evaluated with CECT abdomen which revealed Carcinoma Cecum.

David A et al, in his study of 3121 eligible persons conducted colonoscopy of 2885 patients for complete evaluation of colon upto the caecum and concluded that it is the important tool for diagnosis of malignancy in colon in the form of diagnostic and screening procedure for the disease (Lieberman et al., 2001).

In our study, out of 6 patients of carcinoma caecum only 02 patients (04.65%) were posted for Right Hemicolectomy with Ileotransverse Anastomosis followed by chemotherapy, out of which one patient died on post-operative day 14 because of respiratory complication and patient was elderly female 70 yrs of age. 04 patients in a study 04 patient was inoperable as it had features of advanced disease, therefore treated with palliative chemotherapy.

Consequently, diagnosis / staging laparoscopy is very useful in the prevention of non-therapeutic laparotomies in these patients and also assists in effective symptom palliation (Yeola et al., 2018).

For histopathological review the resected specimen was sent and identified as adenocarcinoma caecum. Regimen.(Adjuvat), Chemotherapy-FOLFOX(4), was given.

Ileopsoas Abscess

Psoas abscess is typically associated with vertebral column observable tuberculous disease. However clinicoradiological evaluation is of utmost importance to reach the final diagnosis.

In our study of 43 patients we encountered 03 patients(06.97%) of Ileopsoas Abscess which can be correlated with the study done by Malik A H et al 10% (Wani et al., 2012).

Ileopsoas abscess was common in 3rd to 4th decade (66.66%) & mean age of presentation is 33.33±15.01 years, it was more common in males (66.66%) than in females (33.33%). 02 patients (66.66%) of Ileopsoas abscess gave history of pain in abdomen for 8-30 days and 01 patient (33.33%) for a period of 1 to 3 months.

All 03 patients (100%) of psoas abscess gave history of loss of weight, 01 patient (33.33%) had vomiting, 01 patient (33.33%) was of Ileopsoas abscess who had abdominal mass on palpation. Hb less than 10 gm% is seen in 02 patients (04.65%) of Ileopsoas abscess. Elevated levels of ESR was detected in all 100% cases of Ileopsoas Abscess.

All cases of psoas abscess were surgically treated by doing Extraperitoneal Abscess Drainage. All the above mentioned findings are comparable with study conducted by and Hüseyin Tarhan Özgür. (Tarhan et al., 2014).

Intussusception

The disorder is also present in children and has the classic triad of cramping abdominal pain, bloody diarrhea and a noticeable tender mass. In adults, intussusception of the bowel is considered a unusual condition however. (Marinis et al., 2009).

In our study of 43 cases, 1 patient (02.32%) was of intussusception. Intussusception was found in 3rd to 4th decade. Intussusception was found in a male, who gave history of abdominal pain over a period of 1 to 7 days with history of vomiting as a chief complaint with abdominal tenderness on palpation over right iliac fossa. The treatment consisted of exploratory laparotomy with resection anastomosis.

Post Operative Complications

In our study of 43 patients, 09 patients (20.93%) landed up in complications, of which 06 patients (13.95%) encountered wound infection, 02 patients(04.65%) died of which 01 patient was of appendicular abscess who died on post-operative day 2 because of septicaemia and other patient was of carcinoma caecum who died on post-operative day 14 because of ARDS and subsequent respiratory failure, and 01 patient (02.32%) had respiratory tract complication.

CONCLUSIONS

As per our observations we concluded that the most common condition was appendicular pathology (mass/abscess) as the mass in right iliac fossa and appendicular lump is the most commonest in the patients with mass in right iliac fossa for which conservative treatment followed by surgery is the mainstay of management. Carcinoma of the colon is the next common entity which has a good prognosis if diagnosed and treated in early stages. Ileocaecal tuberculosis and ileopsoas abscess should be kept in mind while dealing with rural population belonging to poor socioeconomic status with chronic history of pain in abdomen. Intussusception should be kept under raest causes of mass in right iliac fossa. Pressure in the right iliac fossa, fever, diarrhea, and weight loss were the most common symptoms. Abdominal ultrasonography is the first-choice imaging tool in patients who have a proper iliac fossa mass.

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Conflicts of Interest

Nil

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