# **Original Research Article**

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# A study on right iliac fossa mass

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### **ABSTRACT**

**Background:** Patients with mass in the right iliac fossa may confront the surgeon, pediatrician or gynecologist. Thus, thorough understandings of the anatomy and pathological process that may occur within the abdomen are essential for an accurate diagnosis and plan of treatment. The objective of this study was to interpret aetiopathology, clinical presentation, differential diagnosis and management of mass in the right iliac fossa.

**Methods:** A total of 60 cases with mass in the right iliac fossa (RIF) were included in the study. Investigations like colonoscopy and CT scan were done. All the cases underwent right hemicolectomy followed by chemotheraphy. Other cases like psoas abscess, non-hodgkins lymphoma, Meckels diverticulum and intussusception were diagnosed and treated.

**Results:** During this study period, a total number of 36 cases of appendicular mass and 10 cases of appendicular abscess were encountered. In this study 10 cases of appendicular abscess were encountered and treated by extraperitoneal drainage, 4 cases of ileocaecal kochs were encountered. Patients presented with constitutional symptoms like pain, fever, weight loss etc. Right hemicolectomy was done, specimens after operative procedures were examined microscopically and histopathological diagnosis. 3 cases of carcinoma caecum and 3 cases of carcinoma ascending colon were seen. Contrast enema was done which showed filling defect and mucosal irregularities.

**Conclusions:** This study showed that appendicular mass is the commonest pathology in right iliac fossa amongst all and conservative treatment followed by interval appendicectomy is the best mode of treatment. Carcinoma of the colon and ileocaecal tuberculosis is the other two common causes for mass in the right iliac fossa. These cases also carry a good prognosis, if properly diagnosed and treated. The other rare causes of mass in the right iliac fossa are intussusception, psoas abscess and Non Hodgkins lymphoma.

**Keywords:** Carcinoma of the colon, Ileocaecal tuberculosis, Intussusception, Psoas abscess, Non - Hodgkins lymphoma

### **INTRODUCTION**

Mass in the right iliac fossa is not an uncommon entity in the surgical wards, whether detected clinically or as an Ultrasonography finding. Though we think of appendix more commonly in the right iliac fossa there are many other structures giving rise to a mass in the right iliac fossa. Thus preoperative diagnosis remains an enigmatic challenge and a reminder of art of surgical diagnosis. Patients with mass in the right iliac fossa may confront the surgeon, pediatrician or gynecologist. Thus, thorough understandings of the anatomy and pathological process 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.

As the mass in the right iliac fossa is a differential diagnosis, though some investigations are common, some may differ from individual cause and the management is according to the cause.<sup>2</sup>

The purpose of this study is to interpret aetiopathology, clinical presentation, differential diagnosis and management of mass in the right iliac fossa, the relative incidences of various pathological entities that we are seeing in our hospital, any complications that may arise, and morbidity and mortality as the case may be. Relevant literature has been reviewed.

The objective of this study was to study the etiopathology, clinical presentations of the various pathological entities of mass in the right iliac fossa along with its differential diagnosis and management.

#### **METHODS**

A total of 60 cases with mass in the right iliac fossa (RIF) were included in this observational study. This study was done in Saveetha Medical College & Hospital, Thandalam, during the time period of 2015 May to 2017 April.

#### Inclusion criteria

- All the cases that presented during the study period, having a mass in the RIF
- Patients of both sex
- Patients who have also been found to have a mass in the RIF incidentally on examination and investigations are included in the study.

### Exclusion criteria

 Patients having a mass in the right iliac fossa due to gynaecological conditions are excluded.

### Method of collection of data

All the 60 cases selected on a purposive sampling basis were subjected to

- Detailed clinical history
- Physical examination
- Investigations
  - a. Blood and urine routine, urea and electrolytes
  - b. Stool for occult blood, ova and cyst
  - c. Plain X-ray of chest and abdomen
  - d. Contrast X-ray-Barium meal follow through and Barium Enema
  - e. Ultrasonography right iliac region
  - f. Colonoscopy
  - g. CT Scan
  - h. Diagnostic laparoscopy.
- Surgical intervention in the form of

- a. Interval appendicectomy.
- b. Right hemicolectomy
- c. Limited resection
- d. Incision and drainage

These interventions are done as per need in each case. Patients having a mass in the right iliac fossa due to gynaecological conditions were excluded. All the findings of the cases were placed in the proforma case sheets and were considered for the purpose of the study. Analysis was made by using the arithmetic mean, the standard deviation, standard error, t-test and proportion test or chi-square test of significance. The p-value used was 5% or 0.05 level of significance.

During this study period, a total number of 36 cases of appendicular mass and 10 cases of appendicular abscess were encountered. Pain in abdomen, fever, vomiting and impaired appetite were the presenting features in all the patients, these were present more than 3-4 days. On clinical examination, the mass was palpable in the right iliac region. The clinical diagnosis was made on basis of symptoms and signs.

The patients were hospitalized for further management. A total number of 36 patients were treated conservatively with bed rest, intra venous fluids and antibiotics. These patients were closely observed with regard to rise in pulse, temperature, change in size of mass. The patients stayed in hospital until the mass was reduced to a small non-tender lump. As a rule, interval appendicectomy was contemplated to take place six weeks after the end of primary hospitalization. In this study 10 cases of appendicular abscess were encountered and treated by extraperitoneal drainage.

In this study 4 cases of ileocaecal kochs were encountered. Patients presented with constitutional symptoms like pain, fever, weight loss etc. Right hemicolectomy was done, specimens after operative procedures were examined microscopically and histopathological diagnosis was made followed by ATT. 3 cases of carcinoma caecum and 3 cases of carcinoma ascending colon were seen. Pain abdomen, loss of appetite, loss of weight, mass abdomen were the presenting features. Contrast enema was done which showed filling defect and mucosal irregularities. Other investigations like colonoscopy and CT scan were done. All the cases underwent right hemicolectomy followed by chemotheraphy. Other cases like psoas abscess, nonhodgkins lymphoma, Meckels diverticulum and intussusception were seen.

Patients were advised to come for regular follow up after specific interval or during the recurrence of the symptoms. All the cases were treated in the hospital and the treatments included conservative treatment and surgical treatment as the case may be and preanaesthetic examination was done in all cases that underwent surgery. Post operatively patients were managed by

giving IV fluids, IV antibiotics, Ryles tube aspiration and analgesics. Input / output, BP, TPR charts were maintained. Most of the patients did well in the post-operative period and during the follow up.

### Specific surgical intervention

Specific surgical interventions are done as per the need. Interval appendicectomy was done for appendicular mass and appendicular abscess, right hemicolectomy for IC tuberculosis, carcinoma caecum and colon.



Figure 1: Appendicectomy.



Figure 2: Right hemicolectomy specimen showing growth in the colon.



Figure 3: Another resected specimen of Rt. hemicolectomy.

#### **RESULTS**

From below table, it can be seen that appendicular pathology constituted (76.7%) including appendicular mass (60%) and appendicular abscess (16.7%).

Table 1: Different types of mass in the right iliac fossa.

Diagnosis	Male	Female	Total no. of cases
Appendicular mass	21	15	36
Appendicular abscess	7	3	10
lleocaecal tuberculosis	1	3	4
Carcinoma caecum	2	1	3
Carcinoma ascending colon	1	2	3
Psoas abscess	0	1	1
Non Hodgkins lymphoma	1	0	1
Intussusception	1	1	2

Table 2: Incidence of age/sex distribution.

Age in years	Males	%	Females	%
10-19	5	14.3	4	16
20-29	12	34.2	6	24
30-39	3	8.6	3	12
40-49	4	11.4	5	20
50-59	3	8.6	2	8
60-69	5	14.3	4	16
70+	3	8.6	1	4
Total	35	100	25	100

Sex ratio = 1.4:1

Above table shows male: female ratio was 35:25 (1.4:1). Maximum incidence of males (34.2%) and females (24%) was seen in the age group between 20-29 years. The mean age of male patients was 34.2 years and female patients were 39.8 years.

The below table shows that 100% of patients presented with pain abdomen, associated fever (55%), vomiting (51.66%), weight loss (10%), mass abdomen (6.66%) and with bowel disturbances (11.67%). The maximum number of male patients had Hb% level in the range between 13-15 gm% (34.3%). The maximum number of female patients had Hb% level in the range of 9-11 gm% (36%). The difference in the mean Hb% between males and females was statistically significant (S). The mean Hb of male patients was 11.4gm% and female was 9.5gm% with respective standard deviation of 2.3gm% and 2.1gm%. Percentage of male patients with Hb level < 10gm% was 20%. Percentage of female patients with Hb < 10gms% was 48%. Percentage of male patients with Hb > 10gms% was 80%. Percentage of female patients with Hb > 10gms% was 52%. P < 0.05 significant. It reveals that the number of anemic patients was more in females compared to males. The maximum duration of stay was

46.7% between 11-20 days followed by 35% in 1-10 days.

**Table 3: Clinical presentations.** 

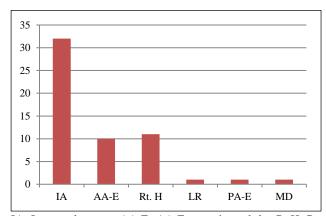
Diagnosis	Pain	Fever	Vomiting	Wt. Loss	Mass	Bowel disturbances
AM	36	19	19	-	2	4
AA	10	7	6	-	-	1
IT	4	2	3	3	-	-
CC	3	1	1	2	1	1
CA	3	2	1	1	-	1
Pa	1	1	1	-	-	-
NHL	1	-	-	-	1	-
II	2	1	-	-	-	-
Total	60 (100%)	33 (55%)	31 (51.66%)	6 (10%)	4 (6.66%)	7 (11.67%)

AM - Appendicular Mass, CA - Carcinoma Ascending colon, AA - Appendicular Abscess, PA - Psoas abscess, IT - Ileocaecal Tuberculosis, NHL - Non Hodgkins Lymphoma, CC - Carcinoma caecum, II - Ileocolic Intussusception

**Table 4: Investigation.** 

Diagnosis	Ultrasound abdomen	Colonoscopy	Ba Enema	CT Scan	Diagnostic laparoscopy
AM	36	-	-	-	-
AA	10	-	-	-	-
IT	4	-	1 (1.67%)	-	1 (1.67%)
CC	3	2 (3.33%)	1 (1.67%)	3 (5%)	-
CA	3	3 (5.00%)	1 (1.67%)	3 (5%)	-
PA	1	-	-	-	-
NHL	1	-	-	1 (1.67%)	-
Intussusception	2	-	-	-	-
Total	60 (100%)	5 (8.33%)	3 (5.01%)	7 (11.67%)	

AM - Appendicular Mass, CA - Carcinoma Ascending colon, AA - Appendicular Abscess, PA - Psoas abscess, IT - lleocaecal Tuberculosis, NHL - Non Hodgkins Lymphoma, CC - Carcinoma caecum



IA: I. appendectomy; AA-E: AA-Extraperitoneal dr.; Rt.H: Rt. Hemicolectomy; LR: Limited resection; PA-E: PA-Extraperitoneal dr.; MD: M. diverticulectomy.

Figure 4: Types of surgical treatments.

Ultrasound was done in all the cases i.e., 100% (60 cases) followed by CT scan (4.91%), colonoscopy (8.33%), barium studies (5.01%) and diagnostic laparaoscopy (1.67%). From the above table, it can be seen that the Interval Appendicectomy was done in 53.33% of cases following Ochsner-Sherren regimen in 27 cases and

extraperitoneal drainage in 5 cases of appendicular abscess. Extraperitoneal drainage of appendicular abscess was performed in 16.66%. Right Hemicolectory was done in 18.3% of cases, Limited Resection of the bowel in 1.66% and Meckel's Diverticulectomy was done in 1.66%.

### **DISCUSSION**

## Appendicular mass

Appendicular mass was 58.33% of cases in the present study. Male:Female ratio of appendicular mass is 1.4:1. The maximum age incidence was in 3rd decade (33.3%, 12 cases) followed by 2<sup>nd</sup> decade (22.2%, 8 cases). The age of appendicular mass ranged from 11 to 72 years. According to a study of appendicular mass the male to female ratio is 2:1. The patients ranged in age from 6 to 60 years with most patients in the 11 - 30 year age group.<sup>3</sup> In another study of appendicular mass the male to female ratio is 2:1. The patients ranged in age from 12 to 65 years with most patients in the 12 - 30 year age group.<sup>4</sup> According to Thomas et al., age ranged from 14 to 77 years, but the maximum incidence fell in the fifth decade.<sup>5</sup>

### Appendicular mass-comparison with other studies

All the patients came to the hospital for pain abdomen. 19 cases were associated with fever and vomiting. In 12 cases pain was of colicky type, initially it was around the umbilicus and later shifted to right iliac fossa. In the remaining cases, the pain was vague in nature and confined to right iliac fossa. In the present study, 19 cases (31%) of patients were febrile at presentation. Only 2 cases (3%) of patients presented with mass abdomen to the hospital. But all the patients have tenderness is right iliac fossa on clinical examination. According to Jordan et al study, 15 patients (33%) were febrile when they were admitted to the hospital. 5.6% of patients had abdominal mass at the time of admission.<sup>3</sup> According to Ali et al study gastrointestinal upset in different forms was found in 57 (95%) of the patients. 36 (60%) patients gave history of fever at the time of admission.<sup>4</sup> In the present series the duration of stay in hospital for appendicular masses ranges of 1-10 days, 18 cases (50%) and 11-20 days, 17 cases (47.2%). The average stay in hospital for appendicular mass was 10.8 days.<sup>5</sup> In another study the average hospital stay was of 10 days.6 According to Ali et al out of 60 patients, 24 stayed less than 3 days, 15 between 4 and 6 days while 21 patients stayed more than a week.4

In the present study, 36 cases (43%) were diagnosed clinically and on ultrasound abdomen findings. 7 cases (11.7%) are diagnosed (Table 3). 26 (43%) of patients are treated conservatively i.e., Nil orally, IV fluids, IV antibiotics and RTA. 75% of patients underwent interval appendicectomy (Figure 1). 25% of cases did not come for follow up. All the cases have done well in the follow up. The treatment of appendicular mass was conservative with no mortality rate and no morbidity rate. At subsequent elective operation the majority of appendices removed showed histological evidence of previous appendicitis. According to Thomas et al., the treatment of appendicular mass was conservative, with low mortality rate and a low morbidity rate is in correlation to our study.<sup>5</sup>

### Appendicular abscess

Resolution of appendicular mass is the usual outcome, but suppuration may occur resulting in an appendicular abscess. It is in appendicular abscess when pus has formed that incision and drainage are effective. In the present series, patients with appendicular abscess formed 16.66% of the cases, 27% cases were in 3<sup>rd</sup> decades and 27% cases were in 7<sup>th</sup> decade and 18% cases were in 5th decade. Male:Female ratio is 2.3:1. The Male:Female ratio of appendicular abscess 1.26:1 with ages ranging from 4 to 83 years (mean 40.7±2.7 years). Symptoms had been present for an average of 9.2±0.8 days prior to admission to the hospital.<sup>7</sup> In the present study all the patients with appendicular abscesses presented with pain abdomen. 63% had associated fever and 54% had history of vomiting at the time of presentation. Tenderness and

mass were present in right iliac fossa in all the cases on clinical examination. All the cases underwent surgical drainage of abscess with a 20% complication rates such as wound infection, treated by antibiotics and daily dressings. 50% of patients underwent interval appendicectomy. There was no recurrence after surgical drainage. According to a study 61 of 68 patients underwent surgical drainage of abscess with a 28% complication rates. Interval appendicectomy was performed in 42 cases with a 19% complication rate.7 In the present study, 2 patients developed wound infection extra peritoneal drainage. The complications developed are wound infection in 6% of patients and faecal fistula in 6% of cases. Wound infection followed interval appendicectomy in 9% of cases.7

### Appendicular abscess-comparison

According to Hurme et al, if appendicular abscess is operated on in the acute phase, there may be more complications.<sup>8</sup>

### lleocaecal tuberculosis

Tuberculosis remains as important cause of morbidity and mortality in developing countries and intestinal tuberculosis in not very uncommon in India. In this series, lleocaecal tuberculosis formed 6.6% (4 cases) taken up for study of mass in the right iliac fossa. In this study, 50% of cases of lleocaecal tuberculosis had associated pulmonary tuberculosis. In the present study 50% of cases are in age of 3<sup>rd</sup> decade (20-29 years) 25% of cases seen in 4th decade and 25% cases are seen in 5th decade. Females are predominantly affected. Male: Female ratio is 1:3. All the patients complained of pain in the right iliac fossa. 50% of patients presented with fever and 75% of patients had history of vomiting. All of them had associated fever of mild degree and history of evening rise of temperature is present. In all these cases, there was a mass in the right iliac fossa. None of the patients had given history of mass but on examination all the patients were found to have mass in the right iliac fossa. The mean age of presentation was 32 years (range 13-65 years) and ratio of male: female is 3:4.9 The patients presented with abdominal pain and with loose motions. Constitutional symptoms like low grade fever, weight loss and anorexia were present in 71% of patients. Abdominal pain is one of the commonest presentations and is found in around 70-90% of cases. 10 Tuberculosis of gut is commonest in the ileocaecal region (55.85% of cases) and the prevalence is approximately equal in males and females. The most frequent symptom being abdominal pain, weight loss, fever, nausea and borborygmi.<sup>10</sup>

## Ileocaecal tuberculosis-comparison with other studies

In the present study, 3 cases of Ileocaecal tuberculosis are diagnosed based on history, clinical examination, barium

studies, colonoscopy, ultra sound examination and diagnostic laparoscopy, and 1 case is diagnosed on laparotomy which was suspected clinically as acute appendicitis. Barium studies showed pulled up ceacum with multiple nodular areas with similar nodules in terminal ileum. Colonoscopic findings showed nodulo ulcerative lesions with thickened oedematous ileocaecal value. Barium enema in ileocaecal tuberculosis shows a pulled-up caecum with multiple nodular areas with similar nodular areas in terminal ileum.<sup>11</sup> The colonoscopy findings are nodular, nodulo ulcerative or ulcerative lesions with erythematous surrounding mucosa, thickened edematous ileocaecal valve are suggestive of tuberculosis. In the present study, 100% of cases underwent right hemicolectomy and followed by ATT. These patients responded well and had clinical improvement. The clinical subjective improvement after surgery occurred after 2-6 months of ATT which may be because of surgical removal of basic tuberculous lesion. In all the cases, the specimens are sent for histopathological examination and the reports were correlated with the clinical diagnosis.

### Carcinoma caecum and ascending colon

Carcinoma caecum formed 5% (3 cases) and carcinoma ascending colon formed 5% (3 cases) in the present study. 83% cases are seen in the age group above 50 years of age and 50% of cases are seen in 7th decade and the oldest patient was 75 years aged. The Male: Female ratio of carcinoma caecum was 2:1 and carcinoma ascending colon was 1:2. The sex distribution of colorectal carcinoma is approximately equal. The ratio of Male: Female is 2:3 for colonic carcinoma. 12 The incidence of carcinomas in the right colon (caecum and ascending colon) is 25-31%. 50-69% of all colon growths are in the sigmoid. 13,14 In the present study all the colonic carcinomas presented with dull aching pain but only one out of 6 cases (16.6%) presented with mass abdomen and 3 patients (50%) had given history of loss of weight. The duration of symptoms of presentation ranged from 1 month to 7 months. 2 patients (33.33%) gave history of vomiting. The mass was felt in the right iliac fossa in all cases and it was hard in consistency. Only one patient had mesenteric lymph node metastases. In majority of cases of carcinoma caecum is constant but not very severe abdominal pain was experienced in right iliac fossa or subcostal or epigastrium often associated with local tenderness. Abdominal mass was felt in only few cases usually in the right iliac fossa.<sup>13</sup> In the present study, contrast barium enema was done in two cases showed persistent irregular filling defect in caecum. The barium enema examination revealed a bulky tumor that projects into the lumen of caecum or ascending colon, producing a filling defect with an irregular edge thus correlating with the findings of our study (Table 4).<sup>13</sup>

In the present study, 40% of the cases are diagnosed based on ultrasound, and ultrasound findings correlated with colonoscopic findings and barium enema findings (Table 4). The sensitivity, specificity and accuracy of abdominal ultrasound in colonic tumours considered being consistent with colonic carcinoma was 96, 67 and 97% respectively.<sup>15</sup> In the present study, all the patients are subjected to right hemicolectomy with ileo-transverse anastomosis. All of the patients have done well post operatively and followed by chemotherapy with each cycle using 5 flouro-uracil 600mg/m2 i.v. bolus over 1 hour, Leucovorin 500mg/m2 in 2 hours i.v. infusion in saline, each cycle is repeated every week for 6 weeks. The histopathological diagnosis is correlated with the clinical diagnosis. According to Golighers experience, he practice the more extensive hemicolectomy for the growths of caecum and ascending colon.<sup>13</sup> Histopathological examination of the resected specimens revealed submucous lipoma in one of the cases. Patient was uneventful post-operatively and in follow-up.

### Non-Hodgkins lymphoma

A male patient aged 20 years presented with pain abdomen for 4 months, clinically it was diagnosed as ileocaecal tuberculosis. CT scan showed findings probably of lymphoma. On laparotomy, lesion involving ileocaecal junction was present and limited resection with end to end anastomosis was done, and the specimen was sent for histopathology, histopathological report suggested Non Hodgkins lymphoma. Patient was uneventful in post-operative period and started on chemotherapy. Patient did well in the follow up.

The recent ultrasound and CT scan examination of the chest and abdomen have largely replaced laparoscopic examination and were commonly used in the evaluation of organ involvement in patients with lymphoma. The primary colonic lymphoma may clinically simulate inflammatory bowel disease and that the physician must have high suspicion of this disease.<sup>16</sup>

### Psoas abscess

A 64-year-old immunocompetent female presented with right lower abdominal pain and fever of 2 days duration. On examination, there was a soft tissue mass over the right iliac fossa. Investigations revealed a primary tuberculous psoas abscess. Early diagnosis and prompt treatment with extraperitoneal drainage along with antituberculous drugs, led to a satisfactory outcome. Typical patient presentation included fever with complaints of pain in the flank, hip or abdomen.<sup>17</sup> In a study of 11 cases of psoas abscess, 8 cases had fever as the presenting symptom.<sup>18</sup>

### Intussusception

A 15-year-old female presented with the complaints of abdominal pain of 12 hours duration. She had no significant past medical history or previous abdominal surgery. There was no family history of any hereditary

illnesses. On admission, she had normal vital signs. Investigation findings were consistent with a bowel obstruction secondary to an enteric intussusception. A midline laparotomy was carried out. The intraoperative finding was intussusception of ileus due to an inverted Meckel's diverticulum located 20 cm from the ileocecal valve. The bowel was examined for signs of ischemia. No ischemic loop was identified. Diverticulectomy was performed. Histopathology revealed Meckel's diverticulum without any ectopic mucosa or malignancy. The postoperative period was uneventful and after 6 days the patient was discharged. A 61-year-old male presented with ten-day history of colicky central abdominal and right iliac fossa pain. It was more at the right iliac fossa and has gradually worsened. There was an associated anorexia, nausea but no vomiting. On examination, he was afebrile. The abdomen was slightly distended, diffusely tender but more at the right iliac fossa, with guarding and a palpable tender mass. A provisional diagnosis of appendicular mass was made. He underwent a laparotomy, which revealed some turgid peritoneal fluid, minimal ileal dilatation and an intussusception of the caecum into the ascending colon. A limited right recovery was uneventful and he was discharged home after 5 days. The histology confirmed an intussuscepting caecal polypoidal tumour of adipose tissue, in favor of a submucous lipoma, covered with partly ulcerated mucosa and atrophic appendix.

A retrospective study about adult intussusceptions concluded that the most common symptom was acute abdominal pain (64.3%) and that enteric intussusception (52.4%) was the common most type.<sup>19</sup>

A study concluded that most patients with adult intussusception in their series were men, and most intussusceptions were benign and of enteric origin. Operative reduction is recommended for enteric intussusceptions. The prognosis of adult intussusception after surgery is good except for malignant intussusception.<sup>20</sup>

### **CONCLUSION**

A total of 36 patients were diagnosed as appendicular mass, 10 patients as appendicular abscess, 3 patients as carcinoma ceacum, 3 patients as carcinoma ascending colon, 4 cases of ileocaecal tuberculosis and the remaining included other cases like, Non-Hodgkin's lymphoma, psoas abscess and Intussusception. This study showed that appendicular mass is the commonest pathology in right iliac fossa amongst all and conservative treatment followed by interval appendicectomy is the best mode of treatment. Carcinoma of the colon and ileocaecal tuberculosis is the other two common causes for mass in the right iliac fossa. These cases also carry a good prognosis, if properly diagnosed and treated. The other rare causes of mass in the right iliac fossa are intussusception, psoas abscess and Non Hodgkins lymphoma. Apart from the clinical examination in order to come to diagnosis, ultrasonography of the abdomen and, in selected patients, other investigations like colonoscopy, barium studies, CT scan and diagnostic laparoscopy are of immense help.

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institutional ethics committee

### REFERENCES

- 1. Millard FC, Me Collins, Peck RJ. Ultrasound in the investigation of the right iliac fossa mass. Br J Radiol. 1991;64(759):17-9.
- 2. Foran B, Berne TV, Rosoft L. Management of the appendiceal mass. Arch Surg. 1978;113:12-9.
- 3. Jordan JS, Kovalcak PJ, Schwab. Appendicitis with a palpable mass. Ann Surg. 2012;193(2):227-9.
- 4. Ali S, Rafique HM. Appendicular mass. Early exploration versus conservative management. Professional Med J. 2010;17(2):180-4.
- Thomas DR. Conservative management of appendicular mass. Surg. 1973;73(5):677-80.
- 6. Nagar RC, Kanwar DL, Appendix mass early appendicectomy or conservative therapy. Indian J Surg. 1983;54(2):259-62.
- 7. Broadley EL, Isaacs J. Appendiceal Abscess Revisited. Arch Surg. 1978;113:120.
- 8. Hurme T, Nylamo E. Conservative versus operative treatment of appendicular abscess: Ann Chir Gynaecol. 1995;84(1):33-6.
- 9. Das HS, Rathi P, Sawant P, Chodankar CM, Vyas K, Patrawala PJ, et al. Colonic tuberculosis: Colonoscopic appearance and clinico-pathologic analysis. JAPI. 2000;48(7):708-10.
- 10. Abraham P, Mistry FP. Tuberculosis of the Gastrointestinal Tract. Ind J Tub. 1992;39:251.
- 11. Makanjuola D. CT and barium features of gastrointestinal and peritoneal tuberculosis. Saudi J Gastroenterol. 1997;3:133-9.
- 12. Silverberg E, Lubera JA. A review of American cancer. J Clin. 1983:33:2-64.
- 13. Goligher JC. Surgery of Anus, Rectum and Colon, Vol. 1, Edited by Bailiere Tindall, London; 1992:426-489.
- 14. Gomez D, Dalal Z, Raw E. Anatomical distribution of colorectal cancer over a 10-year period in a district general hospital: is there a true "rightward shift"? Postgrad Med J. 2004;80:667-9.
- 15. Richardson NGB, Heriot AG, Kumar D, Joseph AEA. Abdominal ultrasonography in the diagosis of colonic cancer. Br J Surg. 1998;85:530-3.
- 16. Al-Harbawi LQ. Primary Colonic Non-Hodgkin's Lymphoma, Case Report and Review of Literature. Raf J Sci. 2005;16(6):23-7.
- 17. Santaella RO, Fishman EK, Lipsett PA. Primary versus secondary Iliopsoas abscess presentation,

- microbiology and treatment. Arch Surg. 1995;130(12):1309-13.
- 18. Walsh TR, Reilly JR. Changing aetiology of iliopsoas abscess. Am J Surg. 1992;163(4):413-6.
- 19. Ahn JH, Choi SC, Lee KJ, Jung YS. A clinical overview of a retrospective study about adult intussusceptions: focusing on discrepancies among previous studies. Dig Dis Sci. 2009;54(12):2643-9.
- 20. Chang CC, Chen YY, Chen YF, Lin CN, Yen HH, Lou HY. Adult intussusception in Asians: clinical

presentations, diagnosis, and treatment. J Gastroenterol Hepatol. 2007;22(11):1767-71.

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