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A CLINICOPATHOLOGICAL STUDY AND MANAGEMENT OF RIGHT ILLIAC FOSSA MASS-ORIGINAL ARTICLE

General Surgery

KEYWORDS: Right illiac fossa mass, carainoma caecum, appendicular mass

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ABSTRACT

INTRODUCTION: Mass in the right iliac fossa is not an uncommon entity.A thorough understanding of the anatomy and pathological process that may occur within the abdomen are essential for an accurate diagnosis and mode of treatmen **AIMS AND OBJECTIVES:** To study age, sex, various diseases which can present as mass in the right iliac fossa. To study various modes of management. To analyse the efficiency of current treatment and its prognosis in our setup.To follow up the studied cases their further management and to detect complications. **MATERIALS AND METHODS:** This is a prospective study of 50 cases of mass in the right iliac fossa admitted to King George Hospital attached to Andhra Medical College, Visakhapatnam and referals from peripheral hospitals RIMS srikakulam during the period from October 2013 to October 2015 over a span of 24 months. This study includes selection of patients with mass in the right iliac fossa on a randomized and prospective basis. The patients are selected after they are diagnosed as having intra abdominal mass in the right iliac fossa of various pathologies after careful history taking, thorough general and local examination and appropriate investigations. **OBSERVATIONS AND RESULTS:** In t his study of 50 cases more than 50% of cases were related to appendicular pathology either in the form of appendicular mass or appendicular abscess. There were about 9 cases of ileocaecal tuberculosis. In this study, youngest patient was of age 12 years, who presented with appendicular mass and the oldest was 68 years of age admitted with carcinoma of caecum. 96% of cases of appendicular mass presented within 30 days. Pain was colicky in nature and associated with vomiting. In this study of 50 cases, 7 cases were managed conservatively and 43 cases were managed surgically. Out of 21 cases of appendicular mass managed surgically 5 cases were taken up for surgery immediately whereas rest of the 16 cases were managed by Oschner scherren regime and appendicectomy was done at a later date. All 6 cases of appendicular abscess and 2 cases of psoas abscess were managed by extraperitoneal drainage. These 6 cases of appendicular abscess were subjected to interval appendicectomy 6-8 weeks later. 8 out of 9 cases of ileocaecal tuberculosis were managed surgically 1 case was not operated because of associated active pulmonary tuberculosis. 6 out of 8 cases of carcinoma caecum were operated upo. **CONCLUSION:** The highest incidence of mass in the right iliac fossa was seen in 2rd and 3rd decade. Males were affected more and M:F ratio was 1.7:1.Most of our patients were of low socio-economic status. Appendicular pathology either in the form of appendicular mass or appendicular abscess was the most common condition presenting as mass in the right iliac-fossa closely followed by ileocaecal tuberculosis and carcinoma caecum.

INTRODUCTION

Mass in the right iliac fossa is not an uncommon entity. Patient with mass in the right iliac fossa may confront the surgeon, physician, obstetrician and gynecologist. A thorough understanding of the anatomy and pathological process that may occur within the abdomen are essential for an accurate diagnosis and mode of treatment.

AIMS AND OBJECTIVES:

To study age, sex,various diseases which can present as mass in the right iliac fossa. To study various modes of management. To analyse the efficiency of current treatment and its prognosis in our setup. To follow up the studied cases their further management and to detect complications.

MATERIALS AND METHODS:

This is a prospective study of 50 cases of mass in the right iliac fossa admitted to King George Hospital attached to Andhra Medical College, Visakhapatnam and referals from peripheral hospitals RIMS srikakulam during the period from October 2013 to October 2015 over a span of 24 months. This study includes selection of patients with mass in the right iliac fossa on a randomized and prospective basis. The patients are selected after they are diagnosed as having intra abdominal mass in the right iliac fossa of various pathologies after careful history taking, thorough general and local examination and appropriate investigations.

Female patients with pathologies related to uterus and its appendages were not included in this study. Similarly masses arising from parietes (anterior abdominal wall) and bone in that region were not included in this study. All clinical findings were recorded in the proforma case sheets. With each patient admitted with mass in the right iliac fossa, detailed history was carefully elicited to chart out symptomato1ogy. Patient was subjected to methodical physical examination to assess his general condition and to know the basic vital data on admission. Local examination of abdomen was done in a methodical way and relevant findings were recorded. Rectal examination was done in all cases, while pervaginal examination was also done in female patients. Systemic examination like respiratory system and cardiovascular system were done routinely.

All relevant and routine investigations were done in these cases to establish the diagnosis. Ethical clearance has been obtained for the same. Patients were asked to present themselves for follow-up after a specific interval or at recurrence of symptoms.

Meanwhile all patients received supportive treatment aimed at correction of dehydration, anaemia, vitamin and other nutritional deficiencies. (Antihelmenthics w'ere given whenever indicated). Respiratory and other infections were treated with appropriate antibiotics. Bowel preparation was done in all cases requiring Exploratory laparotomy. During laparotomy, intra-abdominal examination of all organs was made in addition to specific pathology and specific surgery was done in each case. Post-operative follow-up was meticulously done, intake output charts and vital charts were maintained. They were given antibiotics, analgesics and sedatives if needed. Most of the operated patients had uneventful recovery. Drains were removed after 48 hours and sutures were removed on the 7th postoperative clay.

OBSERVATIONS AND RESULTS:

In this study of 50 cases more than 50% of cases were related to appendicular pathology either in the form of appendicular mass or appendicular abscess. There were about 9 cases of ileocaecal tuberculosis.

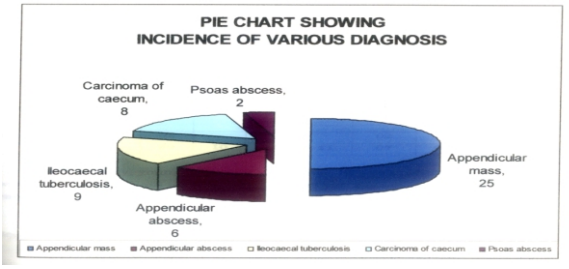

FIGURE : 1 Showing incidence of various diseases

In this study, youngest patient was of age 12 years, who presented with appendicular mass and the oldest was 68 years of age admitted with carcinoma of caecum.In this study appendicular mass manifested most commonly in 2nd decade (36%) and followed by 3rd decade (32%). Ileocaecal tuberculosis was common in the middle age group (i.e., 3rd and 4th decade) covering about 77% of cases.Carcinoma caecum was common in older age group (75%). Male : Female ratio - 2. 8 : 1. In the present study, appendicular mass (64%), appendicular abscess (67%) were common in males. In ileocaecal tuberculosis incidence in males was almost 90%. In carcinoma of caecum the incidence again was more in males.

96% of cases of appendicular mass presented within 30 days. Pain was colicky in nature and associated with vomiting. Some patients of ileocaecal tuberculosis presented with colicky abdominal pain and fullness in right iliac fossa. Some of them complained of constant dull pain in right iliac fossa interspersed with colicky abdominal pain '2-8 hours after taking food. Pain was releved usually by passing stools. In this series 22% cases presented within 1 month. 55% cases presented between 1-3 months and another 22% presented after 6 months. In this series out of 8 cases of carcinoma caecum, 3 cases presented within 30 days, 1 case presented between 1-3 months, 3 cases presented between 3-6 months and 1 case presented after 6 months. 2 cases of psoas abscess presented between 1-3 weeks associated with fever and fullness. In this series only 3 cases of appendicular mass and abscess presented with complaints of mass. 22% of ileocaecal tuberculosis patients complained of mass, but 75% of carcinoma caecum presented with mass. 100% cases of psoas abscess complained of mass. Actinomycosis and retroperitoneal tumour presented with mass in right iliac fossa.

In this study 64% of appendicular mass presented with fever and 40% presented with vomiting. In cases of appendicular abscess 50% presented with fever and 30% presented with vomiting. Out of 9 cases of ileocaecal tuberculosis, 8 cases presented with fever, 3 cases with vomiting and 4 cases with loss of weight. In 8 cases of carcinoma caecum 4 cases gave history of occasional vomiting and almost all cases gave history of loss of weight. Both cases of psoas abscess presented with fever. In present study of 50 cases, 90% cases had tenderness in right iliac fossa. 9 patients had mass which was hard in consistency which included all the 8 cases of carcinoma caecum and 1 case of actinomycosis. 66% of patients had mass which was firm in consistency which includes mostly cases of appendicular mass and ileocaecal tuberculosis. Remaining 16% cases had masses soft in consistency which included appendicular abscess and psoas abscess. 31 of 50 cases presented with swelling which were fixed. In this group it included patients of carcinoma caecum, appendiculr mass and few cases of ileocaecal tuberculosis. In this study 42% cases had Hb < 10 gm. Most of the cases of Ileocaecal tuberculosis and carcinoma caecum were in this group. In present study 12 (24%) cases had ESR reading of 1st hour between 5-20mm. 19 (38%) cases had reading between 21-40mm. In 16 (32%) cases reading was between 41-60mm. In 3 (6%) cases, ESR was more than 60mm. All cases of ileocaecal tuberculosis had high ESR levels.

In present series contrast x-ray barium studies were done in cases of carcinoma caecum and ileocaecal tuberculosis. In ileocaecal tuberculosis main feature was pulled up caecum with narrowed ileum. In carcinoma caecum main feature was irregular filling defect with shouldering sign positive. In this series 45 cases had ultrasound abdomen done and all the cases were correctly diagnosed. Immediate appendicectomy - 05 Cases, Late appendicectomy.16 Cases

In this study of 50 cases, 7 cases were managed conservatively and 43 cases were managed surgically. Out of 21 cases of appendicular mass managed surgically 5 cases were taken up for surgery immediately whereas rest of the 16 cases were managed by Oschner scherren regime and appendicectomy was done at a later date. All 6 cases of appendicular abscess and 2 cases of psoas abscess were managed by extraperitoneal drainage. These 6 cases of appendicular abscess were subjected to interval appendicectomy 6-8 weeks later. 8 out of 9 cases of ileocaecal tuberculosis were managed surgically 1 case was not operated because of associated active pulmonary tuberculosis. 6 out of 8 cases of carcinoma caecum were operated upon. One case was not operated as there were multiple secondaries in liver and another case was not operated as he was already operated once and it was diagnosed as recurrent carcinoma caecum. So both these patients were put on palliative chemotherapy.4 cases of appendicular mass put on *OS* regimen did not turn up for surgery.

In 21 cases of appendicular mass in 5 cases, appendicectomy was done immediately. Appendix was released and appendicectomy done. In all 6 cases of appendicular abscess, extraperitoneal drainage of pus was done immediately and interval appendicectomy done after 6 weeks.

In 8 cases of ileocaecal tuberculosis managed surgically, for 3 cases, limited ileocaecal resection with end to end anastomosis was done. Whereas in 3 cases (we had to go in for hemicolectomy. In rest of 2 cases as there was associated miliary tuberculosis with unresectable mass, only biopsy was done. In 2 cases of psoas abscess, extraperitoneal drainage was done followed by which one case was put on ATT and other on antibiotics.

70% of cases came back for follow-up. 22 cases were operated i.e., interval appendicectomy in case of appendicular mass (9) managed by O - S regimen and all cases of appendicular abscess (6). 8 cases of ileocaecal tuberculosis were regularly taking ATT and responding well. 3 cases of carcinoma caecum were regularly coming for chemotherapy. Others were normal at follow up.

DISCUSSION:

Appendicular mass formed 50% of cases of present study. All the patients came to the hospital for pain of duration of less than one month. They complained of colicky pain, initially around umbilicus which later shifted to right iliac fossa. Some patients had associated vomiting. According to R. C. Nagar et al[29] appendicular mass was more common in 3rd, 4th and 2nd decades of life. Male to female ratio was 19:4 (4.7:1).In present study maximum age incidence was in 2nd decade (36%) followed by 3rd decade (32%). This was more common in males than females (1.7:1). Only one patient complained of mass in present series. But on examination all cases were found to have mass in the right iliac fossa. According to Bailey and Love[3], on the third day (rarely sooner) after the commencement of an attack of acute appendicitis, a tender mass can frequently be felt in the right iliac fossa beneath some rigidity of the overlying musculature, the other quadrants of the abdomen being free from rigidity or tenderness. According to R. C. Nagar et al[29], 38 out of 46 cases had rigidity and 43 out of 46 cases had tenderness.

In present series all pateints gave history of pain and vomiting. All patients had masses which were tender and firm. In present study, 5 of the 22 cases had restricted mobility whereas rest of the cases were fixed. According to Erik Skoubo - Kristensen et al[10] 55% of his cases experienced febrile episodes with temperature > 39°.In present study 64% of cases presented with fever and in 72% of cases, Hb % was above 10gms%. In present series, 80% of patients were treated conservatively by Oschner Sherren regimen. Nil by mouth, Ryles tube

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aspiration, antibiotics and IV fluids. This decision was based on fact that nature has already localised the lesion and it is unwise to disturb these barriers. Inadvertent surgery at this time is dangerous, difficult and bloody.

Erik Skoubo-Kristensen et al[10] says that conservative management of appendicular mass is successfull in most cases and complication rates seem lower than with early operative treatment. Adalla SA et all says that in his study of 30 patients, 3 needed emergency appendicectomy, 2 had elective appendicectomy and remaining 83% were managed conservatively. In present series cases which were managed conservatively were called back for appendicectomy 6 weeks later. Specimens of appendix after appendicectomy were sent for histopathological examination and all were reported as chronic appendicitis.

Appendicular abscess:
These patients formed 12% of the present group study. 50% of the cases were in 4th decade and in 67% cases males were affected. All the patients presented within 1 month of symptoms. According to Edward L Bradley HI et al[8], mean age at which appendicular abscess occurred was 40. 7 + 2.7. Symptoms had been present on an average of 9.2 ± 0.8 days prior to admission.In present study initially pain was colicky which later changed to pricking/throbbing type. 33% of cases complained of mass per abdomen and mass was tender and soft in consistency. 50% of cases had fever. According to Hurme T et al[16], in his study of 147 patients 47% were primarily treated conservatively, of them 9% had to be operated on in acute phase because of worsening of symptom. Rest 53% were operated on primarily of which 28% had complications. In 31 % of conservatively managed patients - interval appendicectomy *was* done and 12% were treated conservatively only. In present study all 6 cases were taken up for immediate extraperitoneal drainage of abscess, which is a preparation for interval appendicectomy done after 6-8 weeks. Interval appendicectomy was done in all cases and histopathology report showed chronic appendicitis.

According to Edward L Bradley III et al[8], 6% of his patients group had wound infection after initial extraperitoneal drainage and after interval appendicectomy wound infection occured in 9% of his patients. In present study 16% of patients had wound infection after extra peritoneal drainage and after interval appendicectomy wound infection occured in 50% cases.

Ileocaecal tuberculosis:
Tuberculosis of the gastrointestinal tract presents a common diagnostic and therapeutic problem to a surgeon in most of the developing countries. In this series ileocaecal tuberculosis formed 18% of cases taken up for study of mass in the right iliac fossa most common only to appendicular mass. In present study 22% of cases of ileocaecal tuberculosis had associated pulmonary tuberculosis. 80% of cases of ileocaecal tuberculosis were from rural areas. Sputum positive for trebercle bacilli and unpasteurised milk containing bovine tubercle bacili were the main etiological factors in these cases. According to Aim Prakash et at[36] highest incidence of this disease was found in age group 20-40 years. According to SK Bhansali[5] in his study 2/3^{rds} of patients were in 3rd and 4th decades and sex incidence was almost equal.

In present study all patients were above 30 years age group with mass incidence between 30-40 years. Male patients were more predominantly affected. Tuberculous enteritis is commonest in the ileocaecal region in a series conducted by Ann Prakash[34] and also series conducted by Bhansali S.K.[5] followed by involvement of ileum as the next common site.

In present study all cases had involvement of caecum with associated involvement of ileum in few cases. According to Prakash et al,[34] in his study, abdominal pain is the commonest symptom in both obstructive and non-obstructive groups. In the latter it may be colicky in nature but in often vague related to umbilicus and right iliac fossa.

In present series, all patients complained of pain in right iliac fossa. All these patients had associated fever of mild degree and history of evening rise of temperature. History of loss of weight and appetite were also there in these pateints. In their study 62.3% of cases presented with bowel symptoms. Tenderness was present in 58% cases and 63% cases presented with mass. In present study 22% cases presented with altered bowel habits. Tenderness was present in 66% of cases and 22% of cases presented with mass in the right iliac fossa.

According to S. K. Bhansali[5] abdominal distension is also a common feature of non-acute case and is due to either ascitis or to chronic small bowel obstruction caused by lesion in ileum or ileocaecal region. In present study none of the cases had abdominal distension.

According to S.K. Bhansali et al[5] 60% of chronic cases of ileocaecal tuberculosis presented as mass in the right iliac fossa which may simulate either Crohn's disease, an appendix mass or a malignant lesion of caecum or ascending colon. It could be due to hyperplastic ileocaecal tuberculosis or lymphadenitis.

In a study of 300 patients by Prakash ATM a mass was present in almost 50% of cases in right iliac fossa. In present study only 22% of cases of ileocaecal tuberculosis complained of mass but on examination all the patients were found to have mass in the right iliac fossa.

In present study in 77% of cases duration of symptoms was less than 3 months and in others it was more than 6 months. According to Prakash et al[36] 27% cases had duration of symptoms < 6 months and 43% cases had duration ranging from 6 months to 3 years. Rest ranged > 3 years.

According to Prakash et al[36] > 50% cases had Hb% < 10 gms. and ESR > 30mrn/lst hour was noted in > 50% cases. In present study in 66% cases Hb% was < 10 gms and all cases had ESR > 40 mm/1st hour i.e., 77% cases had ESR levels between 40-60 mm and rest 23% cases had above 60 mm.

According to Schoefield PR, Anscome A.R. and Keedie N.C.[47] in ileocaecal tuberculosis there are characteristic radiological appearances in barium enema examination like caecum is pulled up, ascending colon shortens, ileum retains its normal calibre.

In present study, contrast x-ray barium enema study was done in all cases. Main radiological features were narrowing of terminal ileum, obtuse ileocaecal angle and pulled up caecum. I. P. Elhence and B.D. Sharma et al[9] said that clinical subjective improvement after surgery occurred after 2-6 months of ATT which may be because of surgical removal of basic tuberculous lesion.

Standard drug regimen used was :
- Streptomycin 0. 75mg - Ig i.m. daily / 2 months
- INH 300mg/day oral x 6 months
- Rifampicin 450mg to 600mg/day oral x 6 months.
- Pyrazinamide 1.5 - 2gm/day x 2 months.
- Treatment was used for 6 months.

According to B.D. Pujari[37] in study of modifiied surgical procedures in intestinal tuberculosis showed that, in 7.5% cases he could do only biopsy because of extensive adhesions and he did limited ileocaecal resection in 33% cases.

According to Ramesh C. Bharati el al[38] who did a study of pattern of surgical emergencies of tuberculous abdomen, they did right hemicolectomy in 4.5% of cases limited resections in 6% cases and strictureplasties in 36% cases. In present study of 9 cases of ileocaecal tuberculosis limited ileocaecal resection was done in 33% cases and right hemicolectomies in another 33% cases because of extensive associated involvement of ascending colon. In one case there was an

associated stricture for which strictureplasty was done. In 2 of these 9 cases only biopsy could be done because of extensive adhesions.

According to A.R. Undre et al[48] procedure of ileocaecal resection is ideal as it takes less time and can be done even in cases of peritonitis. It does not require extensive mobilization of colon and hence risk of damage to other structures is minimal or absent. It involves limited resection and hence a considerable length of functioning colon is preserved. Thus ileocaecal resection is safe, quick and effective surgery for benign granulomatous lesions of intestine and has obvious advantages over conventional surgical technique of right hemicolectomy.

Carcinoma caecum :
Carcinoma caecum formed 16% of cases of present study. 75% cases were seen in the age group above 50 years and oldest patient of this study was aged 68 years. 7 Cases were males and 1 case was female. According to Crerand S et al[6] in the series of 1553 patients who presented with primary colorectal cancer, over a period of 30 years at Mater Misericordiae Hospital, Dublin 39% patients were aged over 70 years and 51% were between 50-69 years. 70% carcinomas were left sided, 22% carcinomas were right sided and carcinoma caecum accounted for 18%. According to their study carcinoma caecum was more common in patients over 69 years and in elderly females and 30% of colorectal carcinomas occured in caecum.

In present study 6 out of 8 cases presented with mass and dull aching pain. Average duration of symptoms was from 1-6 months, 50% of cases had vomiting and 87% cases had loss of weight. In Goligher series[12], growths of the caecum, ascending colon and hepatic flexure, bowel symptoms were usually completely absent. In many instances the only manifestation will be of deterioration of general health with loss of weight and anaemia. In present series, 87% cases had a hemoglobin level of lower than 9 gm percent and the ESR reading was from 21-40 mm in 1st hour. According to Goligher J. C.[12] in majority of cases of carcinoma caecum constant but not very severe abdominal pain was experienced in the right iliac fossa or subcostal or epigastrium often associated with local tenderness. In Goligher[12] study, 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.

In present series, contrast barium enema examination was done in these cases. Barium enema revealed persistent short irregular filling defect in caecum. N.G.B. Richardson el al[41] said that sensitivity, specificity and accuracy of abdominal USG in colonic tumors considered to be consistent with colonic carcinoma was 96, 67 and 97% respectively. In present study 87.5% of cases were diangosed accurately on USG. According to Goligher's[12] experience with regards to growths of 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 of the resection to the minimum that offers a reasonable chance of cure.

In present study the general condition of the patient was improved by giving high protein diet, hematinics and bowel was prepared. Laparotomy was performed and right hemicolectomy was done. The structures removed in right hemicolectomy are last 30cms of ileum, caecum, ascending colon, appendix, junction of the right l/3rd and left 2/3rd of transverse colon, leaf of peritoneum containing vessels and lymphnodes. With care taken to avoid injury to the duodenum, right ureter, right spermatic and ovarian vessels.

Post operative period was uneventful and followed up by chemotherapy:

- 5 - Fluorouracil 600 mg/m2 IV bolus over 1 hour
- Leucovorin - 500mg/m2 in 2 hours IV infusion in saline
- Repeat cycle every week x 6 weeks.

Psoas abscess : These cases formed 4% of present study group and M:F ratio was 1:1. Both cases complained of mass abdomen and both cases presented with fever. According to Santaella RO et al[43], typical patient presentation included fever with complaints of pain in the flank, hip or abdomen. According to Vfalsh TR et al,[49] in his study of 11 cases, 8 cases had fever as the presenting symptom. In present study ESR was > 40mm/1st hour. Both the cases were immediately drained followed by which one patient was put on antibiotics based on culture and sensitivity as it was pyogenic abscess. Other case was tuberculous in origin which was secondary to tuberculosis spine, thus ATT was started. 1 case had wound infection post-operatively.

CONCLUSION:
The highest incidence of mass in the right iliac fossa was seen in 2rd and 3rd decade.Males were affected more and M:F ratio was 1.7:1.Most of our patients were of low socio-economic status. Commonest presenting symptoms were pain in right iliac fossa, fever, vomiting, loss of weight and altered bowel habits. Most of the cases presenting with mass in the right iliac fossa were managed surgically which turned out to be the most effective management while very few cases were managed conservatively. All cases were followed up till their stay at hospital. Most of the cases came for follow up regularly and good recovery without any complications were noted. Appendicular pathology either in the form of appendicular mass or appendicular abscess was the most common condition presenting as mass in the right iliac-fossa closely followed by ileocaecal tuberculosis and carcinoma caecum.

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