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A Clinical Study of Right Iliac FOSSA MASS

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Abstract: *A lump in the abdomen has always held a fascination for the clinician. The challenge it offers in its diagnosis is not often surpassed by any other disease. Among the various quadrants of the abdomen, the right iliac fossa enjoys the pride of place as far as the incidence of mass per abdomen is concerned. The common conditions met with are appendicular mass, ileocecalKoch's, carcinoma caecum, iliac lymphadenitis, tubo-ovarian mass, etc. In this study some aspects like mode of presentation, relationship of a particular factor to a particular condition & some of the common conditions met within the right iliac fossa, were studied in detail which shows Appendicular pathology continues to be the most common cause for right iliac fossa mass. Appendicular mass is the most commonly encountered cases in this study constitutes 50% of cases. The main symptoms were pain abdomen, fever, impaired appetite and vomiting. Ultrasound is the imaging modality of choice in patients with right iliac fossa mass followed by CT scan abdomen, Barium meal follow through and colonoscopy.*

Keywords: *Appendicular mass, Right iliac fossa mass*

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I. Introduction

The abdomen has retained an element of fascination over the years, offering an intriguing diagnostic challenge. The "temple of surprises", the "tomb of mysteries", the magic box of Pandora" – These various names precisely describe the enigma it holds for the surgeon. A lump in the abdomen has always held a fascination for the clinician. The challenge it offers in its diagnosis is not often surpassed by any other disease. Among the various quadrants of the abdomen, the right iliac fossa enjoys the pride of place as far as the incidence of mass per abdomen is concerned. Though an extensive subject, this study was undertaken to unravel some of the mystery of a mass in the right iliac region. The common conditions met with are appendicular mass, ileo-caecalkoch's, carcinoma caecum, iliac lymphadenitis, tubo-ovarian mass, etc.

The subject is so extensive that it is not possible to study all the details regarding various diseases. However, an effort has been made to study some aspects like mode of presentation, relationship of a particular factor to a particular condition, & some of the common conditions met within the right iliac fossa, were studied in detail which forms the basis of this work.

II. 2. Methods

This study is conducted at Department of General Surgery in RIMS hospital, Kadapa, Over a period of 24 months from November 2015 to November 2017. All cases attending & admitted in surgical units with Mass in the right iliac fossa i.e., 50 patients selected for study purpose.

2.1. Inclusion criteria

2.1.1Both male and female patients are included.

2.1.2It includes the patients who present with a mass in the right iliac fossa associated with symptoms or without symptoms.

2.1.3It includes the cases which are found accidentally on examination and investigations.

2.2Exclusion criteria:

2.2.1Patients with masses from other regions extending & occupying right iliac fossa.

2.2.2All cases less than 12 years of age.

2.3. Method of Collection of Data:All 50 cases who attended this hospital with right iliac fossa mass were subjected to:

2.3.1 Detailed clinical history (in pre-posted computerized proforma)

2.3.2 Physical examination of allpatients in detail as per proforma

2.4. Investigations:
2.4.1Routine Blood and Urine.
2.4.2Stool for occult blood, ova and chest.
2.4.3Pain X-ray of abdomen and chest.
2.4.4Contrast X-ray: Barium meal follow-through & Barium enema.
2.4.5Ultrasonography of abdomen (with emphasis on right iliac fossa).
2.4.6Colonoscopy.

III. Results

Table-1: Distribution of Various Masses In Right Iliac Fossa Clinically

S.NO	Disease	No. of cases	Percentage (%)
1	Appendicular mass	25	50
2	Appendicular abscess	10	20
3	IleocecalKoch's	5	10
4	Ovarian tumours	3	6
5	Carcinoma caecum	4	8
6	Parietal abscess	2	4
7	Retro peritoneal tumour	1	2
	Total	50	100%

Table – 2: Age – wise distribution of right iliac fossa mass

Diagnosis	No. of cases	10-20	21-30	31-40	41-50	>50
Appendicular mass	25	8	9	4	3	1
Appendicular abscess	10	4	3	2	1	-
IleocecalKoch's	5	-	2	3	-	-
Ovarian tumours	3	-	2	1	-	-
Carcinoma caecum	4	-	-	-	1	-
Parietal abscess	2	-	1	1	-	-
Retro peritoneal tumour	1	-	1	-	-	-
Total	50	12	19	11	5	1

Table – 3: sex – wise distribution of right iliac fossa mass

Diagnosis	Male		Female	
	No. of cases	%	No. of cases	%
Appendicular mass	15	60	10	40
Appendicular abscess	7	70	3	30
IleocecalKoch's	2	40	3	60
Ovarian tumours	-	-	3	100
Carcinoma caecum	3	75	1	25
Parietal abscess	1	50	1	50
Retro peritoneal tumour	-	-	1	50
Total	28	56	22	44

Table-4: Symptoms in right iliac fossa mass

Diagnosis	No. of cases	Pain abdomen	Fever	Vomiting	Impaired appetite	Altered bowel habits	Loss of weight	Cough
Appendicular mass	25	25(100%)	19(76%)	18(72%)	18(72%)	3(12%)	-	-
Appendicular abscess	10	10(100%)	10(100%)	6(60%)	4(40%)	-	-	-
IleocecalKoch's	5	5(100%)	3(60%)	3(60%)	5(100%)	-	5(100%)	1(20%)
Ovarian tumours	3	3(100%)	-	-	-	-	1(33%)	-
Carcinoma caecum	4	4(100%)	-	-	4(100%)	2(50%)	4(100%)	-
Parietal abscess	2	2(100%)	2(100%)	-	-	-	-	-
Retro peritoneal tumour	1	1	-	-	1	-	1	-
Total	50	50	34	27	31	5	10	1

Table 5: Types of surgical treatment

Type of surgery	No. of cases	Percentage
Interval /Emergency appendectomy	35	74
Resection with Ileo-transverse anastomosis	3	6
Right hemicolectomy	3	6
Right sided ovarian cystectomy	2	4
Right sided oophorectomy	1	2
Excisional biopsy	1	2
Incision and drainage of abscess	2	4

Table 6: Types of treatment

Diagnosis	No. of cases	Conservative	Surgery
Appendicular mass	25	21(84%)	4(16%)
Appendicular abscess	10		10(100%)
IleocecalKoch's	5	3(60%)	2(40%)
Ovarian tumours	3		3(100%)
Carcinoma caecum	4		4(100%)
Parietal abscess	2		2(100%)
Retro peritoneal tumour	1		1(100%)
Total	50	24(48%)	26(52%)

IV. Discussion:

A total number of 50 patients presenting as mass in the right iliac fossa, from November 2015 to November 2017, attending surgical units in RIMS hospital, Kadapa, A.P., were selected and studied.

Appendicular mass, appendicular abscess, ileocecalkoch's carcinoma caecum being the most commonly encountered cases in this study. This incidence similar to study conducted by Samraj et.al 2017[1], where appendicular pathology constitutes 76.7%. In present study appendicular pathology is 70% "Table 1".

4.1. Appendicular mass:

In case of appendicular mass, the maximum number of cases was found to be in the 2nd and 3rd decades of life. There were 9 cases (36%) in 21-30 years of age and 8 cases (32%) in 10-20 years of age group "Table 2". In other series by J.S.Jordan et al; 1981 [2]and Erik Skoubo-Kristensen et al; 1982 [3] the greatest incidence was in the 2nd and 3rd decades of life, which were comparable with my study.

There were 15 male & 10 female patients in this series (1.5:1) and in series by J.S.Jordan et al [2]; 1981the male & female ratio was 2:1 and Erik Skoubo –Kritensen et al [3]; 1982 male to female ratio is 1.44:1. This shows the male predominance in both the studies. In study conducted by Samraj et.al 2017 [1] male to female ratio 2:1.

J.S.Jordan et al	1981	2:1
Erik Skoubo-Kritensen et al	1982	2:1
Samraj et.al	2017	2:1
Present Study	2017	1.5:1

No particular relationship could be established regarding the occupation and geographic distribution. The main symptoms were pain abdomen (100%), fever (76%) impaired appetite (72%) and vomiting (72%) "Table 4". All the patients had a vague, tender mass in the right iliac fossa with local guarding.

Out of 25 cases 21 cases were treated conservatively with I.V. Fluids, antibiotics, bed rest and observation "Table 6". All cases responded well with an average of 6-8 days, and interval appendicectomy was done after 6-8 weeks. 4 patients were taken immediately for surgery at first presentation in single admission. 1 patient was subjected to open appendicectomy. According to Thomas et al the treatment of appendicular mass was conservative, which is in correlation with our study.

Post operatively one patient of open appendicectomy had wound infection which was treated conservatively with antibiotics based on culture and sensitivity and post-operativestay ranged from 8-10 days.

In patients with laparoscopic appendicectomy there were no post-operative complications and average stay in the hospital was 5 days ranging from 4-10 days, in other series Yau et al 2007 [4] the mean post-operative stay is 5 days. In pokala et al [5] mean post-operative stay was 6 days which was comparable with this study.

In treatment of appendicular mass early operation has an edge of being curative in index admission and ensures early return to work and patient compliance where when conservatively managed patient requires second admission for interval appendicectomy where some patients may lose for follow up and more duration of hospital stay.

4.2. Appendicular abscess:

There were 10 cases of appendicular abscess in this series, who presented as a mass in the right iliac fossa which constitutes 20%. The study conducted by Samraj et.al 2017 [1] appendicular abscess constitutes 16.6%. Highest incidence was seen in 11-25 years age group. In the other series by J.S. Jordan et al; 1981[50] the incidence was in the 2nd and 3rd decade. Male to female ratio was 2.3:1, this is similar to study conducted by Samraj et.al 2017 [1].

Pain abdomen (100%), fever (100%), vomiting (60%) and impaired appetite (40%) were prominent symptoms in all the cases "Table 4". All the cases had increased body temperature, vague mass & tenderness in the right iliac fossa. Ultrasound examination of the abdomen confirmed the diagnosis.

Out of 10 patients 7 cases were treated by laparoscopic drainage and appendicectomy at admission and 3 cases were treated with abscess drainage by retroperitoneal approach followed by interval appendicectomy after 6-8 weeks "Table 5".

Patients who underwent laparoscopic drainage and appendicectomy had nil post-operative complications and average post-operative stay of 5 days ranging from 4-10 days.

Due to the technical advantage in laparoscopic and magnification achieved by it and incisions far from the pathology, laparoscopy appears to be a feasible option as there are no post-operative complications, less post-operative pain, shorter post-operative stay, low morbidity and patient compliance.

4.3. Ileocaecalkoch's:

In the present study, the incidence of ileocecalkoch's was five which constitutes 10%. Highest number of cases was seen in 31-40 years of age group (60%)"Table 2" in other series by M.J.Joshi et al, 1976[6] over two – thirds of the patients were in fifth decade. In other series patients were in the 3rd and 4th decades of life as reported by S.K.Bhansali, A.N.Desal et al, 1968.

In the present study the male to female ratio was 1:1.5. it is comparable to the study as reported by M.J.Joshi et al [6], 1976 the male to female ratio was 1:1.3 In other series by Singh H.N. et al, 1973[7] the male to female ratio was 4:5 A female preponderance was found in most series too.

The main symptoms were pain abdomen (100%), loss of weight (100%), vomiting (60%) cough (20%) and fever (60%)"Table 4". While according to ATM Prakash et al, 1978 main symptoms were pain abdomen (95%), loss of weight (88.66%), vomiting (63.66%).

	Prakash et.al	Present study
Pain abdomen	95%	100%
Loss of weight	88.66%	95%
Vomiting	63.66%	60%

1 patient had previous history of pulmonary tuberculosis. All these patients had a mass in the right iliac fossa. Most of them had tenderness in the right iliac fossa.

Investigation revealed in many with low Hb%, leucocytosis and raised ESR. Ultrasonography of abdomen in all the 5 cases revealed presence of mass in right iliac fossa. Barium contrast studies were performed for all five cases, which showed pulled up & contracted caecum with narrow terminal ileum and obtuse ileocecal angle.

2 cases were treated surgically (Ileo-transverse anastomosis and limited resection with Ileo transverse anastomosis)"Table 5". Remaining 3 cases were managed conservatively. All the 5 cases were discharged with antitubercular treatment.

4.4. Carcinoma caecum:

In the present series the incidence of carcinoma caecum was 4. Highest cases were seen in 51-60 years age group (75%)"Table 2", similar to study conducted by Samraj et.al 2017 [1]. Male to female ratio was 3:1 which showed male predominance.

In carcinoma caecum, pain abdomen, loss of appetite, loss of weight and altered bowel habits are the predominant symptoms"Table 4".

Ultrasonography of abdomen was performed for 4 cases, which revealed presence of mass in all the cases. Barium enema was positive in three cases with a filling defect in the caecum and mucosal irregularities in double contrast barium studies.

3 cases underwent surgical treatment with right hemicolectomy and ileo-transverse anastomosis, remaining 1 case underwent ileo transverse anastomosis was a diversion procedure for inoperable mass"Table 5". Later these cases were referred to higher centre for chemotherapy.

4.5. Ovarian tumors:

In this study we had 3 cases of tubo-ovarian mass with more incidence among 21-30 years age (66.6%) and 31-40 years age group (33.4%)"Table 2". Pain abdomen (100%), mass in right iliac fossa (100%), loss of weight

(33%)"Table 4" were the predominant symptoms. Investigations revealed anaemia & ultrasonography of abdomen revealed ovarian mass in all the 3 cases. All the three patients underwent surgery. The surgical modalities were right sided ovarian cystectomy (66.6%) and right sided oophorectomy (33.4%)"Table 5"

4.6. Parietal wall abscess:

In this study 2 cases of parietal wall abscess were identified. 67% cases are seen between 20-30 years age group, and all the cases presented with pain abdomen and fever along with the mass. Ultrasonography is used to confirm diagnosis and all the cases underwent surgery, drainage of the abscess.

4.7. Retroperitoneal tumour:

1 case of retroperitoneal tumor (liposarcoma) in a female patient aged 23 years ident"ified for which excision biopsy done "Table 5"

V. Conclusion

A total number of 50 patients presenting as mass in the right iliac fossa, fromNovember 2015 to November 2017 in which appendicular pathology continues to be the most common cause for right iliac fossa mass.Appendicular mass is the most commonly encountered cases in this study constitutes 50% of cases.The maximum number of cases was found to be in the 2nd and 3rd decades of life and more common in males.The main symptoms were pain abdomen (100%), fever (76%) impaired appetite (72%) and vomiting (72%).Out of 25 cases of appendicular mass 21 cases were treated conservatively with I.V. Fluids, antibiotics, bed rest and observation "Table 6". All cases responded well with an average of 6-8 days, and interval appendicectomy was done after 6-8 weeks.

Appendicular abscess is the 2nd most common cause of right iliac fossa masses constitutes 20% of cases in which highest incidence was seen in 11-25 years age group. Pain abdomen (100%), fever (100%), vomiting (60%) and impaired appetite (40%) were prominent symptoms in appendicular abscess.Out of 10 patients of appendicular abscess 7 cases were treated by laparoscopic drainage and appendicectomy at admission and 3 cases were treated with abscess drainage by retroperitoneal approach followed by interval appendicectomy after 6-8 weeks.

In the present study, the incidence of IleocecalKoch's in 5 patients. Highest number of cases was seen in 31-40 years of age group (60%).The main symptoms of ileocecalkoch's were pain abdomen (100%), loss of weight (100%), vomiting (60%) cough (20%) and fever (60%).2 cases of ileocecalkoch's were treated surgically (Ileo-transverse anastomosis and limited resection with ileo transverse anastomosis). Remaining 3 cases were managed conservatively.

In the present series the incidence of carcinoma caecum was in 4patients. Highest cases were seen in 51-60 years age group (75%). Male to female ratio was 3:1 which showed male predominance. Pain abdomen, loss of appetite, loss of weight and altered bowel habits are the predominant symptoms. In which 3 cases underwent surgical treatment with right hemicolectomy and ileo-transverse anastomosis, remaining 1 case underwentileo transverse anastomosis as diversion procedure for inoperable mass.

In this study we had 3 cases of tubo-ovarian mass were identified, with more incidence among 21-30 years age (66.6%). Pain abdomen (100%), mass in right iliac fossa (100%), loss of weight (33%) were the predominant symptoms. All the three patients of tubo ovarian mass underwent surgery. The surgical modalities were right sided ovarian cystectomy (66.6%) and right sided oophorectomy (33.4%).

In this study 2 cases of parietal wall abscess were identified. 67%cases were seen between 20-30 years age group, and all the cases presented with pain abdomen and fever along with the mass. All the cases underwent surgery, drainage of the abscess.

1 case of retroperitoneal tumour (liposarcoma) in a female patient aged 23 years was identified in this study.

Ultrasound is the imaging modality of choice in patients with right iliac fossa mass followed by CT scan abdomen, Barium meal follow through and colonoscopy.

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