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DIAGNOSTIC CHALLENGES POSED BY CLINICAL ENTITIES PRESENTING AS RIGHT ILIAC FOSSA MASS- A COMPARATIVE STUDY ON SENSITIVITIES OF CLINICAL, RADIOLOGICAL, AND HISTOPATHOLOGICAL DIAGNOSIS

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ABSTRACT

BACKGROUND: Numerous abdominal conditions manifest as palpable lumps during clinical examination. Identifying the location and clinical features of the lump is crucial in establishing a diagnosis in most cases. Nevertheless, some situations necessitate additional investigations, such as imaging, to validate clinical indicators, while others may require intraoperative or pathological analysis for a conclusive diagnosis. Various pathological conditions leading to a palpable lump in the right iliac fossa include an appendicular mass, carcinoma of the cecum, ileocecal tuberculosis, psoas abscesses, intussusceptions, and right ovarian tumor. Our aim is to identify key clues in patient history and examination findings to facilitate a specific clinical diagnosis. Subsequently, the sensitivity of clinical diagnosis is compared with imaging diagnosis. The accuracy of both clinical and imaging diagnoses is then evaluated against intraoperative and histopathologic findings.

AIM AND OBJECTIVE: 1. Investigating diverse clinical presentations of masses in the Right Iliac Fossa and determining their respective incidences.

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2. Evaluating and contrasting the sensitivity of clinical diagnoses with radiological assessments, employing imaging techniques such as Ultrasonography and CT scans.

3. Assessing and comparing the sensitivity of both clinical and radiological diagnoses with intraoperative findings in cases requiring surgical exploration, and subsequently, validating the results against the ultimate histopathological reports.

PATIENTS AND METHODS: The patients attending the General Surgery OPD and emergency ward of MKCG Medical College and Hospital, Berhampur with clinically palpable right iliac fossa mass over a period from November 2023 to October 2024. After proper consent, all the patients satisfying the above conditions were examined and data were recorded in preformed proforma. Ultrasonography of the abdomen was performed for all the patients, and patients with diagnoses other than appendicular mass underwent a CT scan of the abdomen. Specimens were sent for histopathological study. Then their histopathological reports were compared with the preoperative clinical and radiological diagnosis**.**

INCLUSION CRITERIA:

1. Patients with clinically palpable right iliac fossa masses were included.

2. Patients should have received and completed the prescribed treatment as per standard protocol followed in our institute during the same period.

EXCLUSION CRITERIA:

1. Paediatric patients.

2. Individuals experiencing solely right iliac fossa pain without the presence of a mass were excluded from the study.

3. Patients who were lost to follow-up.

RESULTS: Appendicular mass is the commonest condition presenting as right iliac fossa mass(n=32). Clinical diagnosis is accurate in only 50% cases of appendicular mass. Imaging diagnosis is accurate in 86% cases of appendicular mass. Ileocecal tuberculosis is the 2nd most common condition presenting as right iliac fossa mass. Clinical diagnosis and imaging are highly accurate in diagnosing ileocecal tuberculosis. There was 100% concurrence between both clinical diagnosis and imaging diagnosis. Also, both clinical diagnosis and imaging diagnosis were in 100% agreement with histopathologic result. Clinical impression was more accurate than imaging result in case of Carcinoma caecum. In this study clinical diagnosis agreed with the final histopathology report in 100% of cases while imaging was accurate only in 75% of cases. Clinical assessment and imaging were 100% accurate in diagnosing Psoas abscess, Ovarian tumours, intussusception.

CONCLUSION: Finally, it was concluded that in certain cases of right iliac fossa masses, the clinical diagnosis is more accurate than the investigations like in carcinoma caecum and certain cases like in appendicular lump the investigations are superior and, in some cases, both are equally efficient.so for accurate diagnosis both are equally important.

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INTRODUCTION:

Numerous abdominal conditions manifest as palpable lumps during clinical examination. Identifying the location and clinical features of the lump is crucial in establishing a diagnosis in most cases. Nevertheless, some situations necessitate additional investigations, such as imaging, to validate clinical indicators, while others may require intraoperative or pathological analysis for a conclusive diagnosis. The abdominal region is conventionally divided into nine sections, defined by two vertical and two horizontal lines. The vertical lines extend from the midclavicular lines to the midinguinal points, while the upper horizontal line, known as the transpyloric line, passes between the umbilicus and the xiphisternum. The lower trans-tubercular line connects the tubercles of the iliac crest. These divisions create the following nine regions: right hypochondrium, epigastrium, left hypochondrium, right lumbar, umbilical region, left lumbar, right iliac fossa, hypogastrium, and left iliac fossa. Within the right iliac fossa, anatomical structures include the cecum, appendix, and terminal ileum. Retroperitoneally, the iliac vessels, right ureter, lymph nodes, and psoas muscle are situated. Pathologically enlarged right ovary, uterus, and cysts can also be located in the right iliac fossa. Various pathological conditions leading to a palpable lump in the right iliac fossa include an appendicular mass, carcinoma of the cecum, ileocecal tuberculosis, psoas abscesses, intussusceptions, and right ovarian tumour. This dissertation aims to identify key clues in patient history and examination findings to facilitate a specific clinical diagnosis. Subsequently, the sensitivity of clinical diagnosis is compared with imaging diagnosis. The accuracy of both clinical and imaging diagnoses is then evaluated against intraoperative and histopathologic findings.

AIM AND OBJECTIVE OF THE STUDY:

1. Investigating diverse clinical presentations of masses in the Right Iliac Fossa and determining their respective incidences.

2. Evaluating and contrasting the sensitivity of clinical diagnoses with radiological assessments, employing imaging techniques such as Ultrasonography and CT scans.

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PATIENTS AND METHODS:

The patients attending the General Surgery OPD and emergency ward of MKCG Medical College and Hospital, Berhampur with clinically palpable right iliac fossa mass over a period from November 2023 to October 2024. After proper consent all the patients satisfying the conditions were examined and data were recorded in preformed proforma. Ultrasonography of the abdomen were performed for all the patients, and patients with diagnoses other than appendicular mass were undergo a CT scan of the abdomen.

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Specimen were sent for histopathological study. Then their histopathological reports were compared with the preoperative clinical and radiological diagnosis**.** This study was a prospective observational study.

INCLUSION CRITERIA:

1. Patients with clinically palpable right iliac fossa masses were included.

2. Patients should have received and completed the prescribed treatment as per standard protocol followed in our institute during the same period.

EXCLUSION CRITERIA:

1. Paediatric patients.

2. Individuals experiencing solely right iliac fossa pain without the presence of a mass were excluded from the study.

3. Patients who were lost to follow-up.

RESULTS AND DATA ANALYSIS:

This study looks at 50 consecutive cases admitted in the surgical wards that had a palpable right iliac fossa mass on examination.

CLINICAL DIAGNOSIS:

Of these 50 cases the clinical diagnosis in 32 cases was appendix masses, in 8 ileocecal tuberculosis, in 4 malignancies of the caecum, in 2 psoas abscesses, in 2 ovarian tumours and 2 intussusceptions.

Appendix mass	32
Ileocecal TB	8
Ca Caecum	4
Psoas abscess	2
Ovarian Tumour	2
Intussusception	2
Total	50

IMAGING DIAGNOSIS:

All these 50 cases underwent diagnostic imaging using Ultrasound abdomen. The 32 cases of appendix mass underwent only ultrasonography as the diagnostic imaging modality, while the rest of the cases underwent a CT scan abdomen following an ultrasonogram. The CT scan diagnosis is considered as the imaging diagnosis in case it is done else the ultrasound report is considered here for the imaging diagnosis.

Appendix mass	16

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Acute appendicitis	11
Ileocecal TB	8
Normal	5
Ca Caecum	3
Psoas abscess	2
Ovarian Tumour	2
Intussusception	2
Paracolic abscess	1

INTRA OPERATIVE DIAGNOSIS:

35 of these patients underwent surgery. Except for the 2 cases of psoas abscesses which were drained the remaining 33 cases had specimens removed and sent for histopathology. In cases of appendicular pathology, the pathologist reported all cases of appendicular pathology as appendicitis irrespective of whether appendix masses were seen intra op or not.

Appendix mass	14
Ileocecal TB	3
Ca Caecum	4
Psoas abscess	2
Ovarian Tumour	2
Acute appendicitis	8
Intussusception	2
Total	35

CLINICAL DIAGNOSIS:

The clinical diagnosis is based upon the patient symptomatology and the examiner's clinical findings. The distribution of the various clinical findings and history details in the 6 categories of clinical diagnosis are given below-

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	Appendix mass	**Ileocecal TB**	**Ca Cecum**	**Psoas Abscess**	**Ovarian Tumor**	**Intussception**
Number of cases	**32**	**8**	**4**	**2**	**2**	**2**
History findings						
RIF pain	32	8	2	2	0	2
Colicky	20	8	2	0	0	2
Continous	12	0		2	0	0
Vomiting	8	0	0	0	0	2
Fever	20	0	0	2	0	0
Constipation	0	0	0	0	0	0
Diarrhoea	2	0	0	0	0	2
Bleeding PR	0	2	0	0	0	2
Melena	0	0	4	0	0	0
Weight loss	0	6	2	0	0	0
Mass abd	0	0	2	0	2	0
Anorexia	24	6	2	0	0	1
Past h/o TB	0	6	0	0	0	0
Past h/o similar	4	4	0	0	0	1

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Signs						
Pallor	0	4	2	0	0	0
LNE	0	0	0	0	0	0
Tender RIFlump	32	4	2	2	0	0
Local □ of temp	11	0	0	2	0	0
Margin ill def	32	8	3	2	0	0
Margins well def			1	0	2	2
Consist: Firm	32	8	4	2	2	2
Mobility Restrd	32	8	3	2	0	2
Mobility free	0	0	1	0	2	0
Hepatomegaly	0	0	0	0	0	0

DISCUSSION:

APPENDIX MASS:

Of the 32(64%)[1,2] cases diagnosed to be appendix mass clinically, USG abdomen reported appendix mass in 16 cases, appendicitis in 11 cases, and normal study in 5 cases. Of these 32 cases 22 were taken up for surgery. During surgery 14 cases of the 22 cases diagnosed to have early mass formation had appendix mass while the other 8 only had features of appendicitis. Of the 22 cases, 11 cases had USG report of appendicitis and 11 had reports of appendix mass. All the 11 cases that USG reported as Acute appendicitis were operated upon. Of these 11 cases that USG reported as acute appendicitis 8 had mass formation intra op while 3 had acute appendicitis only. The 11 cases which USG diagnosed as suspected appendix mass and were operated upon had early appendix mass formation intraoperatively. Clinical diagnosis and

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imaging diagnosis is in concordance only in 50% cases of appendicular mass. Clinical diagnosis is accurate in only 50% cases of appendicular mass. Imaging diagnosis is accurate in 86% cases of appendicular mass[3]

ILEOCECAL TB:

Of the 8 cases that had a clinical diagnosis of ileocecal TB, all had USG and CT findings suggestive of Ileocecal Tuberculosis. 3 out of these 8 cases were operated on features of intestinal obstruction. All these patients underwent right hemicolectomy and the histopathological report confirmed tuberculosis.

There was a female preponderance in the incidence of ileocecal tuberculosis. Female: Male ratio was 62.5: 37.5 in this study[4]. This is in concurrence with other studies from the Indian subcontinent. Clinical diagnosis and imaging are highly accurate in diagnosing ileocecal tuberculosis. There was 100% concurrence between both clinical diagnosis and imaging diagnosis[5]. Also, both the clinical 77 diagnosis and imaging diagnosis were in 100% agreement with the histopathologic result. Past history of tuberculosis is present in 75 % of cases of ileocecal tuberculosis.

CA CAECUM:

4 cases were diagnosed as carcinoma caecum based on the clinical findings. Imaging findings (CT scan) concurred with clinical findings in 3 cases. In 1 case the CT scan report was that of a paracolic abscess. All 4 cases were operated upon and intraoperatively the findings were suggestive of carcinoma caecum. All 4 patients underwent right hemicolectomy. The histopathological reports of all 4 cases were carcinoma caecum. Clinical impression was more accurate than imaging result in the case of Carcinoma caecum. In this study clinical diagnosis agreed with final histopathology report in 100% of cases while imaging was accurate only in 75% of cases[6]. Carcinoma of caecum was found only in males in this study.

PSOAS ABSCESS:

There were 2 cases diagnoses clinically and radiologically to be psoas abscess. Both cases underwent extraperitoneal drainage through flank incisions. Pus was sent for culture and sensitivity and in both cases Staphylococcus *aureus* was isolated. Clinical assessment and imaging were 100% accurate in diagnosing Psoas abscess [7,8].

OVARIAN TUMOUR:

There were 2 females diagnosed to have ovarian tumours both clinically and radiologically. Both of them underwent unilateral oophorectomy as they appeared benign intraoperatively. The histopathology report was dermoid cyst in 1 case and serous cystadenoma in the other. Clinical assessment and imaging were 100% accurate in diagnosing Ovarian tumours [2,9].

INTUSSUSCEPTION:

No. of cases in which clinical diagnosis matched imaging diagnosis – 2/2. No. of cases in which clinical diagnosis matched final diagnosis – 2/2. No. of cases in which imaging matched final diagnosis- 2/2. Age 42 to 50 Males 2 Females 0. Most common symptom – Colicky RIF pain, Bleeding PR, Vomiting, and diarrhoea 2/2. Most common Sign – Well defined, firm RIF lump with restricted mobility 2/2. Clinical assessment and imaging were 100% accurate in diagnosing intussusception. In this study, both cases of intussusception were due to small bowel polyps[10].

CONCLUSION:

Finally, it was concluded that in certain cases of right iliac fossa masses, the clinical diagnosis is more accurate than the investigations like in carcinoma caecum, and certain cases like in appendicular lump

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