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CLINICAL PROFILE OF RIGHT ILIAC FOSSA LESIONS AND ITS MANAGEMENT

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AUTHORS' CONTRIBUTIONS

This work was carried out in collaboration among all authors. Authors CZP and Anshuman designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Authors ADL and RPK managed the analyses of the study. Author RMY managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

A hospital based prospective study was done with 50 patients to evaluate right iliac fossa lesions. Aim of the study is to study the clinical profile and various causes of right iliac fossa lesions. The most common disease in our study was appendicular mass (40%) followed by appendicular abscess (30%), iliopsoas abscess (10%), Ileocaecal tuberculosis (8%) and carcinoma cecum (6%). There was 1 case each of right undescended testis with malignant change, right ectopic kidney and Non-Hodgkin's lymphoma of ileum, each of these cases accounting for 2% of the total cases in our study. All patients having right iliac fossa lesions either clinically or on Ultrasonography of the abdomen. The appendicular pathology accounted for 70% of all causes of right iliac fossa mass in this study.

Keywords: Lymphadenitis; right iliac fossa; lesions; appendix; abdomen; right ectopic kidney; carcinoma cecum.

1. INTRODUCTION

Surgery is derived from the Greek word 'Cheir' (hand), ergon (to work). In Latin 'chirguria' is defined as treatment of the diseased, injured or deformity by manual or instrumental operations as removal of diseased parts by cutting. 'Chirugeon' person performing surgery [1]. Over the years, the abdomen has retained an element of fascination, 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 from the ancient time till date. Despite the advancements in field of

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diagnosis surprises never cease. A meticulous examination of abdomen is one of the most rewarding diagnostic procedures available to the surgeon. A mass in the right iliac fossa is a common diagnostic problem encountered in clinical practice, requiring skill in diagnosis. A swelling in the right iliac fossa may arise from the structures normally present in that region or from structures, which are abnormally situated in the region [2].

2. REVIEW OF LITERATURE

Studies on right iliac fossa lesions reveals that appendicular masses manifested as the most commonest cause followed by appendicular abscess, ileo cecal TB, carcinoma caecum, ilio psoas abscess. Right iliac fossa is the lowermost and lateral most quadrant on the right side. It is the triangular area bounded by transtubercular plane superiorly, midclavicular line medially and inguinal ligament inferolaterally. This actually is the internal concavity of the ileum facing antero-posteriorly limited above by the iliac crest as it forms a smooth concavity of the greater pelvis. It is continuous below with the wide shallow groove. It provides attachment to iliacus muscle, branches of iliolumbar artery run between it and the bone. The structures which are normally present in this region are appendix, cecum, terminal part of ileum, external iliac vessels, external iliac lymph nodes, retroperitoneal connective tissue, iliopsoas muscle with their sheaths, ureter and iliac bone. The structures that are abnormally present in this region are either due to developmental anomaly or intrusion from neighborhood. E.g. Un-ascended kidney, gall bladder swellings (mucocele), uterus and its appendages, urinary bladder, undescended testis. The anterior wall of right iliac fossa is formed by skin, 2 layers of superficial fascia, external oblique muscle, internal oblique muscle, transversus abdominis muscles and transversalis fascia. The anatomy of the organs normally present in the right iliac fossa is described in brief below [3-5].

Appendix is a worm like diverticulum arising from the posteromedial wall of cecum about 2 cms below the ileocecal orifice. The length varies between 2 to 20 cms with an average of 9 cms. It is longer in children than in adult. Diameter is 5 mm 2. Embryology is a derivative of midgut along with ileum and ascending colon. The cecum is first visible during 5th week of gestation and appendix develops as an excessive growth of right wall of cecum around 8th week. Later it rotates more medial towards ileocaecal valve.[5] The valve is actively closed by sympathetic nerves, which causes tonic contraction of the ileocecal sphincter. It is also mechanically closed by the distension of cecum. The ileocecal valve prevents reflux from cecum to ileum and also regulates passage of ileal contents into cecum thereby preventing them from passing too quickly. Valve is incompetent in 10- 20% of the patients [6-7].

Iliac lymphadenitis [8,9]: Although rarely the site of primary disease, lymph nodes act as primary defensive barriers and are virtually involved in all secondary infections and many neoplastic diseases arising elsewhere [10]. In most instances, lymphadenitis is of a benign variety and is entirely non specific, designated acute or chronic non specific lymphadenitis. The specific node or nodes involved depends on the site of infection. Iliac lymphadenitis is very common in India where most of the population walks barefoot.

Therefore our aim for the study is to study the clinical profile and various causes of right iliac fossa lesions. The objectives that we have taken are to find the most common cause of right iliac fossa lesion. To study the mode of presentation, age and sex distribution, diagnosis and to study the various modalities of investigations, treatment, prognosis and to identify the factors which can help in better management of these cases.

3. MATERIALS AND METHODS

A hospital based prospective study was done with 50 patients to evaluate right iliac fossa lesions - its clinical profile and it‘s Management. Duration of the study was Dec 2015 to June 2017. Sample size was calculated with 95% confidence in interval estimation, 15% anticipated range from previous studies and 10% absolute error of margin by using formula:

$n = Z2\ \pi\ (1- \pi)\ /d2$

Where,

Z = Table Value of alpha error from Standard Normal Distribution table (1.96 for 95% confidence interval)
π = anticipated range (from previous studies)
d = the absolute precision required on either side of true value of the population proportion π
Population proportion = π = 15% = 0.15 Level of significance (alpha error) = 5% Margin of error = d = 0.1
Confidence interval = 95 %
n = (1.96)2 X 0.15 X 0.85 / (0.1)2 =49

Thus, minimum sample size was decided to be 50.

Inclusion Criteria: All patients having right iliac fossa lesions either clinically or on Ultrasonography of the abdomen.

Exclusion Criteria: All patients having right iliac fossa lesions who are not admitted to our centre. Patients less than 12 years and more than 75 years.

Methodology: The study dealt with 50 consecutive cases of mass in right iliac fossa fulfilling the inclusion and exclusion criteria. The inclusion criteria included all patients admitted in surgical wards who are more than 12 years of age with a mass in right iliac fossa on clinical examination, including benign and malignant conditions. The study excluded patients who were less than 12 years, patients with gynecological disorders (such as ovarian cyst, tubo ovarian masses) as these patients were admitted in pediatric surgical and gynecological wards respectively. The proforma was drafted for the study of all patients presenting as mass in the right iliac fossa who were admitted in the surgical wards. A detailed history was taken from each patient with more importance given to pain abdomen, mass, fever, vomiting, loss of weight, loss of appetite and duration of symptoms. A thorough examination was done on each of them noting the size, site, extent, plane of mass, consistency, mobility and other associated signs. The patients then were subjected to relevant investigations to help in the diagnosis, like hematological examination, stool examination, X-rays, USG, CT scans and colonoscopy. Ultrasound with or without guided FNAC was confirmatory in most of the cases.

4. OBSESRVATIONS AND RESULTS

A hospital based prospective study was done with 50 patients to evaluate right iliac fossa lesions.

According to Table 1, the most common disease in our study was appendicular mass (40%) followed by appendicular abscess(30%), iliopsoas abscess(10%), Ileocaecal tuberculosis (8%) and carcinoma cecum (6%). There was 1 case each of right undescended testis with malignant change, right ectopic kidney and Non-Hodgkin‘s lymphoma of ileum, each of these cases accounting for 2% of the total cases in our study. The appendicular pathology accounted for 70% of all causes of right iliac fossa mass in this study.

As seen in Table 2, the highest number of cases (46%) was in the 21–30 years age group. The youngest patient was 13 years old and oldest was 74 years old.

As seen in Table 3, there were 32 male and 18 female patients in our study. It was observed that there was preponderance of male patients.

Table 1. Distribution of patients according to disease

Disease	N	%
Appendicular mass	20	40%
Appendicular abscess	15	30%
Iliopsoas abscess	5	10%
Ileocaecal tuberculosis	4	8%
Carcinoma cecum	3	6%
Undescended testis	1	2%
Ectopic kidney	1	2%
Lymphoma of intestine	1	2%
Total	50	100%

Table 2. Distribution of patients according to age

Diseases	Age in Years						
	12-20	21-30	31-40	41-50	51–60	61-70	>70
Appendicular mass	3	11	2	0	2	0	2
Appendicular abscess	3	6	1	2	0	1	2
Iliopsoas abscess	1	3	0	0	0	0	1
Ileocaecal tuberculosis	1	1	1	0	0	0	1
Carcinoma caecum	0	0	1	0	1	0	1
Undescended testis	0	1	0	0	0	0	0
Ectopic kidney	0	0	1	0	0	0	0
Lymphoma of the intestine	0	1	0	0	0	0	0
Total	**8**	**23**	**6**	**2**	**3**	**1**	**7**

Table 3. Distribution of patients according to gender

Diseases	Sex	
	Male	Female
Appendicular mass	**14**	**6**
Appendicular abscess	**9**	**6**
Psoas abscess	**4**	**1**
Ileocaecal tuberculosis	**2**	**2**
Carcinoma caecum	**2**	**1**
Undescended testis	**1**	**0**
Ectopic kidney	**0**	**1**
Lymphoma of the intestine	**0**	**1**
Total	**32**	**18**

Table 4. Symptoms of the appendicular mass (n=20)

Symptoms	N	%
Pain in abdomen	20	100%
Loss of appetite	20	100%
Nausea and vomiting	16	80%
Fever	16	80%
Mass per abdomen	1	5%
Diarrhoea	1	5%

4.1 Appendicular Mass

This was the most common disease in our study accounting for 40% of all the cases. The youngest patient was 15 years and the oldest patient was 55 years. The maximum number of cases was seen in the age group of 21 to 30 years. There were 14 males and 6 females.

As according to Table 4, 11 patients (55%) had a history of less than 1 week, shortest duration was 3 days and longest duration was 2 months. The typical history of onset of periumblical pain, later shifting to right iliac fossa was present in 12 patients (60%). Majority of the patients with appendicular mass had intermittent colicky type of pain which later became dull aching. 16 patients (80%) gave history of nausea and vomiting. There was an increased frequency of vomiting in 4 patients who later developed appendicular abscess, while on treatment for appendicular mass which was diagnosed clinically. 16 patients (80%) gave history of fever, it was usually mild degree and intermittent. Loss of appetite was present in all the patients (100%) of appendicular mass. Diarrhoea was seen in 1 patient. One patient presented with the mass per abdomen as one of his complaint.

5. DISCUSSION

A hospital based prospective study was done with 50 patients to evaluate right iliac fossa lesions- its clinical profile and it‘s Management. The most common disease in our study was appendicular mass (40%) followed by appendicular abscess(30%), iliopsoas abscess(10%), Ileocaecal tuberculosis (8%) and carcinoma cecum (6%). There was 1 case each of right undescended testis with malignant change, right ectopic kidney and Non-Hodgkin‘s lymphoma of ileum, each of these cases accounting for 2% of the total cases in our study. The appendicular pathology accounted for 70% of all causes of right iliac fossa mass in this study.

Carcinoma Cecum: Carcinoma cecum accounted for 6% of all the cases in our study. There were 3 cases of carcinoma cecum in this study. The youngest patient in this study was 40 years and the oldest patient was 60 years. 2 patients were male and 1 patient was female. The symptoms of pain abdomen were present since 1 month and 3 months in the male patients and since2 months in female patient. Pain in abdomen was intermittent colicky type. Only 1 patient (female) presented with mass in right lower flank as her chief complaints. All patients had altered bowel habits since 1 month in the form of alternating diarrhea and constipation. All patients also had anorexia and significant weight loss. Nausea and vomiting was seen in 1 patient (female).

Lymphoma of The Intestine: There was 1 case of NHL (2%) of the distal ileum and cecum in this study. The patient was a female patient aged 26 years. She presented with pain abdomen since 15 days, loose stools and fever since 2 days. Pain in abdomen in this patient was intermittent colicky type present in the

right lower flank of the abdomen. Patient had anorexia and significant weight loss. Fever was of mild grade and diarrhoea was non bloody mucoid type. Patient was previously operated for intussusception. Patient was febrile, toxic and anemic. Tachycardia was present. On per abdominal examination there was a tender, vague, hard, fixed mass in right iliac fossa measuring 8x10 cms. Abdomen was soft and there were no signs of intestinal obstruction.

Right Ectopic Kidney: There was 1 case of right ectopic kidney (2%) in our study. The patient was a female patient aged 40 years. She presented with pain abdomen since 15 days, constipation and vomiting since 2 days. Pain abdomen in this patient was intermittent colicky type present all over the abdomen and it had aggravated since 2 days. Patient had anorexia. Vomitting and constipation was present since 2 days, vomitus was non bilious and contained food particles. Patient‘s past history showed she had undergone abdominal hysterectomy earlier.

Right Undescended Testis: There was 1 case of right undescended testis (2%) with malignant change in our study. Patient was 30 year old who presented with pain in abdomen and mass per abdomen since 1 month, fever since 15 days. Pain abdomen was dull aching type and mass was situated in the right lower flank. Fever was of mild grade and intermittent. There was history of anorexia and significant weight loss.

6. CONCLUSION

Diseases presenting as a mass in the right iliac fossa were normal, in the age range of 20 to 40 years. In males, the average occurrence tends to be greater. An elevated occurrence of cecal carcinoma resulted in females. In patients of low socioeconomic status, these illnesses are more frequent. Abdominal pain was the commonest symptom. Pressure in the right iliac fossa, fever, vomiting and lack of weight were the most common presentation symptoms. Abdominal tuberculosis is a significant health issue in our nation and, due to varying appearances of patients with ambiguous abdominal pain and non-specific medical symptoms, poses a diagnosis difficulty and obstacle. The disorder is significantly more prominent in middle-aged and adult people. The usually involving site of infection is the terminal ileum, ileocaecal region and peritoneum. The disorder may appear as acute abdominal pain requiring immediate laparotomy or as a chronic phase involving anorexia and weight loss with non-specific abdominal pain and abdominal distention. In order to determine the diagnosis, laparotomy with histopathological analysis of the resected biopsy or analysis of ascitic fluid is also done as a result. In addition to surgical treatment of the complications, early diagnosis and development of anti-TB therapy are important for recovery and survival.

ETHICAL APPROVAL

Ethical clearance had been taken from ethical clearance committee.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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