Original Research Paper

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General Surgery

DIFFERENTIAL DIAGNOSIS OF MASS IN RIGHT ILIAC FOSSA IN A TERTIARY CARE HOSPITAL:A CROSS SECTIONAL STUDY

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KEYWORDS :

INTRODUCTION

Mass in the abdomen, by reason of their wide spread implications, has since long exercised the minds of many workers. Mass in the right iliac fossa is not an uncommon entity. Patient with mass in the right iliac fossa may present to the surgeon, Paediatrician, obstetrician and gynecologist. A thorough understanding of the anatomy and pathological processes 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. The purpose of the present study is to recognise certain well defined clinicopathological entities and the relative incidence of various pathologies, who presented with mass in right iliac fossa to SANTHIRAM MEDICAL COLLEGE AND GENERAL HOSPITAL over the last 1 year from August 2019 to August 2020 in the overall endeavour to reduce morbidity and in few instances mortality.

Aim and Objective

1. To study various diseases which can present as mass in RIF in adults and their relative incidence.
2. To study the age and sex distribution of various diseases.
3. To study disease causing obstruction.
4. To study diseases causing fistula formation.
5. To study the diseases causing disorders of bladder function.

METHODOLOGY

This is a study of cases with RIF mass who presented to Santhiram medical college and General Hospital between August 2019 and August 2020 over a span of 1 year.

The case sheets of patients diagnosed as having RIF mass based on clinical signs backed up by radiological evidence and operative findings were taken from the medical records department for the study. The relevant history and clinical findings of each case were noted in the proforma.

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 excluded in this study.

Inclusion Criteria

Patients above 12 years who presented with RIF mass as per clinical signs backed by radiological evidence and operative findings

Exclusion Criteria

1. Children below 12 years of age Female patients with pathologies related to uterus and its appendages.
2. Masses arising from parietes (anterior abdominal wall) and bone in that region.

Review Of Literature

The history of disease is at least as old as the history of mankind. One can assume that surgical disease or the surgical response to disease, is of similar antiquity. The progress of human ability to contribute to the well being of humanity by means of surgery is impressive indeed. It was not until the introduction of anaesthesia and antisepsis that abdominal surgery became a practical therapeutic approach for patients.

Important contribution to the success of abdominal surgery included the introduction of antibiotics after World War II and developments in the metabolic care of the post operative patient started in the late 1940's and continue to the present time. Lorenz Heister, German surgeon published in 1718 a case of appendicitis. He discovered it when he was dissecting the body at Altodotf.

Claudius Amyand, British surgeon, recorded first successful appendicectomy in 1736. The term “appendicitis” was coined by Reginald Heber Fitz, a Boston Surgeon in 1886. Charles McBurney, in November 1889, described the point of maximum tenderness in acute appendicitis 5 years later in 1894, McBurney described his muscle splitting or gridiron incision.

Anatomy

Abdomen is divided into nine regions by two vertical lines passing through midclavicular lines superiorly and these lines extending inferiorly through midlinguinal points and two horizontal lines namely transpyloric and transtubercular lines. Thus right iliac fossa is the region in the right lateral side and lower most quadrant. Boundaries of this region are from superficial to deep by skin, subcutaneous tissue, external oblique aponeurosis, transverse abdominis muscle and internal oblique muscles anteriorly. Posterior boundary is formed by psoas and quadratus lumborum muscles and thoracolumbar fascia. Inferiorly bounded by posterior part of ilium and iliacus muscle. Laterally it is bounded by external oblique, internal oblique, transverse abdominis and fascia transversalis. Structures normally present in the right iliac fossa are appendix, caecum, terminal ilium, part of ascending colon, iliac lymphnodes, iliac vessels, retroperitoneal connective tissue, iliopsoas muscle and sheath. Structures which can abnormally present in the region are unascended or dropped kidney, undescended testes, masses from uterus and its appendages, bladder, gall bladder, etc. Appendix, caecum and terminal part of ilium form an important surgical anatomic composite.

APPENDIX
CAECUM
ILEO-CAECAL VALVE
ASCENDING COLON
RETROPERITONEUM
KIDNEY
UNDESCENDED TESTES
PELVIC ABSCESS
URINARY BLADDER – DIVERTICULUM
DISTENDED GALL BLADDER

Exclusion Criteria

1. Ilium bone tumours
2. Mass from uterus and its appendages
3. Abdominal wall tumours

AETIOPATHOLOGY
APPENDICULAR MASS AND APPENDICULAR ABSCESS
ILEOCAECAL TUBERCULOSIS

CARCINOMA CAECUM AND ASCENDING COLON
LYMPHADENITIS
LYMPHOMAS
APPENDICULAR MASS
AMOEBOMA
ACTINOMYCOSIS
CROHN'S DISEASE

DISEASES OF ORGANS ABNORMALLY PRESENT IN RIGHT ILIAC FOSSA
Ectopic kidney
Diverticulum of bladder
Mal descended testis
Gall Bladder : Common conditions are: 1) Floating gall bladder and 2) Mucocoele of gall bladder

Clinical Features, Diagnosis And Management Ileocaecal Tuberculosis

Clinical Presentation

Attacks of abdominal pain with intermittent diarrhoea are the premonitory symptoms. Age – 20-40 years. Females are affected more often than males. Frequently presentation is that of blind loop syndrome. The ileum above the partial obstruction is distended, leading to stasis and consequent infection leading to steatorrhoea, anaemia and loss of weight. Sometimes the presenting picture is that of a mass in right iliac fossa in a patient with vague ill health and evening rise of temperature. Sub-acute or chronic intestinal obstruction is the common mode of presentation in 35 to 50% of patients. Patients have a long history of dull aching pain, constipation, vomiting and borborgymi patients may show distension of abdomen and typical stepladder pattern of visible peristalsis. The patient then presents with acute abdominal pain, vomiting, distension and constipation.

Diagnosis
Investigations
Tuberculin test
Ascitic fluid examination
Radiology
Contrast X-ray
Medical therapy
Chemotherapy

The following five drugs – Rifampicin, isoniazid, streptomycin, ethambutol and pyrazinamide are considered in the initial treatment of tuberculosis. The main regimens followed are:
1. Long Term Therapy
2. Short term chemotherapy
3. Inexpensive treatment regimen

Treatment of resistant tuberculosis:
Such cases are treated with additional drugs like:
1) Sodium aminosalicylate (PAS 5 gm bd)
2) Proethionamide (0.75-1 g) once daily
3) Capreomycin (0.75 to 1 g once daily 1M)
4) Cycloserine (0.75-1g once daily by mouth)

Prevention of Tuberculosis
Following control measures are important:
1. Improvement in socioeconomic conditions in respect of adequate housing,ventilation and nutrition.
2. Case finding by mass radiography, sputum smear examination, contact examination.
3. Proper use of modern highly effective chemotherapy.
4. BCG vaccination by administration of freeze dried vaccine (0.1 ml) injected at the junction of the upper and middle third of upper arm. It should not be given in presence of immunodeficiency. The duration of protection is upto 7 years.
5. Chemoprophylaxis: Using INH 5 mg/kg by mouth daily for 1 year in (1) non BCG vaccinated tuberculin positive children under 3 years of age. (2) unvaccinated individual who have recently become tuberculin positive (3) patients on immunosuppressive drugs.

Surgical Treatment
Principle indication for surgery are: 1) Management of complications 2) Diagnostic procedures

Indications for surgical treatment:
1) Perforation of tuberculous ulcer
2) Perforation with localised abscess
3) Obstruction by cicatricial stenosis or shortening of mesentery resulting in kinking of bowel
4) Localised hyperplastic tuberculosis with diminishing calibre of lumen.

Medical treatment should always precede and follow surgery

CARCINOMA CAECUM
Clinical Presentation
The clinical features of a carcinoma colon vary according to the type and grade of growth. Proliferative, ulcerative or annular and itssituation in the proximal or distal part of colon. The chief complaints of the patients are:
1)Abdominal pain 2) Alteration of bowel habits 3) Bleeding per rectum 4) Anorexia and weight loss 5) Palpable mass 6) Vomiting 7) Anaemia 8) Partial or complete obstruction 9) Melaena 10) Perforation with abscess formation or spreading peritonitis.

Diagnostic aids Occult blood in the stool is a diagnostic point in special investigation.

Radiological examination
a. Barium enema
b. Colonoscopy
c. Exfoliative cytology

Prognostic Factors
The prognosis of the patient with cancer of the colon is dependent on:
1. The extent of bowel involvement with modified Dukes classification
2. Presence or absence of spread to lymph nodes and number of positive lymphnodes.
3. Tumour size – invasive, infiltrating variety carry poor prognosis because of their tendency to metastasise. Large bulky tumours i.e. proliferative type carry good prognosis
4. The histological differentiation of lesion: Undifferentiated infiltrating, perineural invasions carry poor prognosis. Well differentiated lesions carry good prognosis.

Carcinoembryonic Antigen (CEA)
The levels are of more value in detecting tumour recurrence or to know the responsiveness of tumour to chemotherapy.

Treatment
After the bowel is prepared, abdomen is opened through right para median incision. Liver is palpated for secondary deposits, the presence of which is not necessarily a contra indication to resection as the best palliative treatment for carcinoma of colon is removal of tumour. Peritoneum is palpated for neoplastic implantations. Various groups of lymphnodes that drain the involved segment are palpated.Their enlargement does not mean metastasis, for it may be inflammatory. Then the neoplasm is examined to ascertain if it is fixed or free and if it is operable. Lesser resections are indicated, should hepatic metastasis render the condition incurable. With no evidence of secondaries and if the tumour is free, radical right hemicolectomy is the operation of choice. Following structures are removed, 5-8 cms of terminal ileum, caecum, ascending colon, appendix, junction of the right 1/3rd with left 2/3rd of transverse colon and leaf of peritoneum containing vessels and lymphnodes. Care must be taken to avoid injury to the duodenum, right ureter, right spermatic or right ovarian vessels.

Cancer Chemotherapy
Each cycle containing 5 flouro-uracil 600 mg/m2 IV bolus over 1 hour Leucovorin 500 mg/m2 in 2 hours IV infusion in saline Each cycle is repeated every week for 6 weeks.

LYMPHADENITIS
Clinical Presentation
In severe infection picture is of acute abdomen. Patient complains of acute abdominal pain, vomiting, fever with chills. Pain is localised to right iliac fossa. In many cases tender, nodular masses are palpable. If suppuration supervenes it resembles appendicular abscess with evidence of psoas spasm. The blood picture shows polymorphonuclear leucocytosis, and raised E.S.R. In chronic lymphadenitis, lymphocytosis is a feature. In filariasis, eosinophilia dominates the picture. An E.S.R. of more than 30 mm/1st hour is suggestive of tubercular Lymphadenitis.

Treatment

In nonspecific cases a course of suitable antibiotics for a period of 3 weeks will be sufficient. In specific infections like tubercular lymphadenitis following measures are adopted.

1. Attention to nutrition and general health.
2. Tubercular material is aspirated for culture and drug sensitivity tests. A specimen must be obtained before anti tubercular drugs are started.
3. Antitubercular drugs are given immediately after aspiration and confirmation.

When the patient's condition begins to improve, breaking down tubercular lymphnodes must be removed because,the drugs will not reach the organisms in the avascular caseous material. In filarial lymphadenitis diethyl carbamazine in the dose of 12 mg per kg body weight in divided doses for a period of 21 days is advised and may be repeated if necessary at intervals.

LYMPHOMA

Clinical Presentation

The most common presentation is painless, progressive lymphnode enlargement in the cervical or supra clavicular regions which may or may not be associated with malaise, fever, weight loss and pruritis. Bony pain indicates metastasis into the bone. Abdominal symptoms like pain, vomiting and mass in the right iliac fossa with palpable lymph nodes in abdomen with splenomegaly may be present.

Important Investigations

1. Node excision biopsy for accurate histological grading is mandatory.
2. Chest Xray to demonstrate enlarged mediastinal growth.
3. Intravenous pyelography to demonstrate compression / displacement of renal calyces by retroperitoneal lymph nodes growth are helpful.
4. Bipedal lymphangiography
5. Ultrasonography , CT Scan

Treatment

If the tumour is within 20 cm of ileocaecal wall a right hemicolectomy should be performed with atleast 90 cm of ileum beingremoved in all. Continuity of bowel being restored by end to end ileocolic anastamosis. Chemotherapy can often induce long remissions in non resectable cases. Treatment depends on stage of the disease and is best carried out by combined radiotherapy and chemotherapy if the disease is of stages I, II and IIIa.

Radiotherapy

1. MOPP regimen
2. MVPP regimen
3. ABVD regimen
4. CAV regimen
5. COPP regimen
6. CVP regimen

APPENDICULAR MASS

Clinical features

1. Abdominal pain
2. Upset of gastric functions
3. Localised tenderness at the site of appendix
4. During the first 6 hours there is no rise in temperature. After that pyrexia with corresponding increase in pulse rate is usual
5. If the temperature is more than 102°F it indicates perforation and abscess formation.
6. Mass forms on 3rd to 5th day after the acute attack. Felt as tender mass in the right iliac fossa beneath the rigidity of the overlying muscles

Diagnosis

Diagnosis of appendicular mass is purely clinical. In most of the cases laboratory investigations reveal increased WBC count. Tuberculosis of ileocaecal region and carcinoma can both present as appendicular mass. Unresolving appendicular mass even after adequate therapy gives the clue to error in diagnosis.

Treatment of appendicular mass and abscess

If an appendicular mass is present and general condition of patient is good standard modem treatment is conservative namely Oschner Sherren regimen. This decision is based on the fact that nature has already localised the lesion and it is not desirable to disturb these barriers. Inadvertent surgery at this time is dangerous, difficult and bloody. It maybe impossible to find the appendix and occasionally faecal fistula may form. For these reasons it is wise to observe a rigid non-operative programme but to be prepared to intervene at any time should the nature fail to control. The treatment is not merely postponement of operation nor is it substitute for operation but it is a preparation for operation. A relevant history, proper physical examination and charts – the pulse is recorded every hour, temperature respiration and BP every 4 hours and nasogastric aspiration is continued.

Diet Drugs

Criteria for stopping delayed treatment

1) Rising pulse rate.
2) Vomiting or copious gastric aspiration.
3) Increasing or spreading abdominal pain and increasing size of abscess.

Contraindications to the 'Delayed' Treatment

1) The diagnosis cannot be made between acute appendicitis and some other intra-abdominal catastrophe normally requiring immediate operation.
2) The signs indicate that inflammation is still confined to the appendix.
3) Patients of extreme age groups i.e., under ten years of age (poor development of the greater omentum and early perforation of the appendix) and over sixty five years, because of atherosclerosis leading to frequency of peritonitis with minimum clinical signs.

Conservative therapy versus early appendicectomy

Only a few percent of cases are treated conservatively (4.5 per cent).

Reasons for favouring early operation are

1. It solves uncertainty and corrects mistakes in diagnosis.
2. It avoids high mortality and morbidity of surgery after the expectant treatment has failed.
3. It safeguards the patients from the greater danger of an abscess formation and bursting into the peritoneal cavity or an adjacent viscous.
4. It protects children/old obese persons and women in late pregnancy from special risks that threaten them.
5. It helps the unwise sufferer who has taken a strong purgative to escape the consequences.

Treatment of appendicular abscess

Failure of resolution of an appendix mass usually indicates that there is pus within the mass. Indications for opening an appendicular abscess.

1) When the swelling is not diminishing in size after the fifth day of treatment.
2) When the temperature is swinging above 37.8°C on several successive days.
3) A pelvic abscess seldom resolves- repeated rectal examinations are required to determine when it is ready for opening into the rectum.

RESULTS AND DISCUSSION

1. Incidence Of Various Condition: In this study of 50 cases, appendicular mass being the most common more than 75% of cases.
2. Age Incidence: In this study, youngest patient was of age 13 years, who presented with appendicular mass and oldest was 75 years were to be the same appendicular mass. Appendicular mass manifested most common in the 2 nd decade covering upto 33% of cases of appendicular mass. Ileocaecal tuberculosis were most common in the 3rd decade. Psoas abscess were most common in the 1st decade. Carcinoma caecum common in 3rd decade in my study.
3. Sex Incidence: In my study, appendicular mass is more common in males of about 72%. Appendicular abscess, ileocaecal tuberculosis and psoas abscess were of equal incidence in both male and females. Carcinoma caecum only case present in male. Male and female ratio is 2.5:1
4. Disease Presented With Intestinal Obstruction: In my study 5% of patients with appendicular mass presented with intestinal obstruction. 50% of ileocaecal TB cases presented with intestinal obstruction. Overall 6% of right iliac fossa mass presents with intestinal obstruction.
5. Diseases Complicated By Ec Fistula: In my study 4% of overall population complicated with enterocutaneous fistula. Out of which 2.6% patients of appendicular mass complicated by enterocutaneous fistula. 50% of patients with ileocaecal TB

complicated by enterocutaneous fistula in my study.

6. Diseases Causing Bladder Dysfunction: In my study 50% of appendicular mass patient present with bladder dysfunction, of which 28% being dysuria. Patient age above 70 years of age present with acute retention of urine associated RIF MASS.

CONCLUSION

1) A study of 50 cases of mass in right iliac fossa, who were admitted to Santhiram medical college and General Hospital during the period from august – 2019 to august 2020 was made.
2) Males were affected more and M:F ratio was 2.5:1.
3) All the cases in this study were subjected to radiological investigations like USG and C.T. abdomen. Most of the clinical diagnosis could be confirmed by USG studies and in few cases patients were subjected to C.T. abdomen diagnosis. This shows that USG can diagnose most of the conditions presenting as right iliac fossa mass.
4) 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.
5) 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,psoas abscess and carcinoma caecum.

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