

A CLINICAL STUDY 50 CASES OF RIGHT ILIAC FOSSA MASS LESION

MS GENERAL SURGERY

SEPTEMBER 2006

V.VIJAYARAJ

Madurai Medical College

INTRODUCTION

Right iliac fossa mass is quite common in our part of the country. The causes of the mass have a varied origin and require versatility in their management. This is because the mass may range from the very benign to the most aggressively malignant lesion and may touch upon various gynaecologic surgery colorectal surgery etc. The incidence of different types of RIF masses are peculiar to our part of the country. Hence a detailed study of the various causes of right iliac fossa mass will help in analyzing the different types of presentation and their management.

AIM OF THE STUDY

Though there are many diseases and disease processes, which cause a mass in the right iliac fossa a few are common in this part of the country. At the same time some disease processes are peculiar to our part of the country. For example ulcerative colitis that has a high incidence of cases in Western Countries has an incidence of about 4% in India. Hence we rarely come across such cases in Madurai. On the other hand cases of hydatid cyst in the retroperitoneum presenting, as a right iliac fossa mass is virtually unheard of. But we have documented cases of hydatid cyst in the retroperitoneum presenting as right iliac fossa mass. So there is a need for a study of right iliac fossa mass, their mode of presentation, the various symptoms complexes, modes of treatment given etc.,

MATERIALS AND METHODS

Over a period of time from 2003 June to 2006 March, the patients getting admitted in surgical wards were examined and patients who have a lump in the right iliac fossa were singled out for study. In this way a total of 50 patients were studied over the period of 2 ½ years.

A detailed history was obtained. Thorough clinical examination of the patient was done and routine hematological investigations were carried out. Total and differential count examination was done and the ESR was estimated in a few patients. Then radiological investigation was carried out. A plain skiagram of the abdomen was taken in most of the patients with a view to locate any foci of calcification and look for any other findings. An X- ray of chest was taken for all patients.

Depending on the merits of the cases some patients were subjected to barium enema studies. This was done after thorough preparation of the patients and putting them on starvation overnight the barium enema study was done in the radiology theatre under image intensifier. A moderate density barium high viscosity suspension was utilized and after

passing the enema catheter tip into the anal canal, the enema reservoir was placed approximately 3 feet above the table level. Then a PA view of entire colon was obtained. Under image intensifier ileocaecal junction is identified and a cone view of ileocaecal junction was obtained. Barium meal series was done for some patients suspecting lesion in the small bowel.

For some patients ultrasound scan of the abdomen was done. After preparation of the patients B mode ultrasonography was done on the patient with full urinary bladder. The mass in the right iliac fossa was sought and the organ of origin was identified in a few cases.

CT scan of the abdomen was taken when ultrasound abdomen was not contributory. Colonoscopy was done in cases, suspecting carcinoma caecum, ascending colon and ileocaecal TB. Test for faecal occult blood was done in few cases.

After the patients were fully evaluated they were assessed for surgery. The findings at laparotomy were noted and any tissues that were excised were sent for histopathological examination.

ANATOMICAL CONSIDERATION

To facilitate the clinical descriptions of pain, swellings etc., the abdomen is divided into areas or regions that are defined by lines on the anterior abdominal wall. 2 vertical and 2 horizontal lines delineate usually nine regions. The vertical line from each side corresponds to the midclavicular line when extended downwards to reach the midsagittal point. The lower transverse line is drawn between the tubercle of the crest (The Trans tubercular plane.) The upper transverse line is the transpyloric plane. 3 central regions defined from above downwards are epigastric, umbilical, and Hypogastric. The lateral 3 regions, both sides are hypochondrium, Lumbar and iliac. And it is the right iliac fossa, which is going to be analyzed in the following study.

RIGHT ILIAC FOSSA

The right iliac fossa can be defined as a gentle concavity in the ileum in front of sacroiliac joint and its ligament. Iliacus muscle arises upto the inner lip of iliac crest over the whole area down to the level of anterior inferior iliac spine. The iliacus fascia is attached on the margins of the muscle. Psoas major passes freely along the pelvic minor when

present has a tendon, which flattens out and inserted into the pelvic brim at the eminence.

INTRA ABDOMINAL CONTENTS

The content which lie in the right iliac fossa are Terminal coils of ileum with its mesentry, Caecum and part of ascending colon, Appendix with its meso appendix , Right uterine adnexa.

APPENDIX

The appendix lies at the commencement of large gut and has the same basic structures. Its wall contains much lymphoid tissue. At the study embryonic stage it has same caliber as the caecum and is in line with it. It is formed by excessive growth of the right wall of the caecum which pushes the appendix to the inner side. Appendicular mesentry will have the appendicular artery.

CAECUM

It is identified by faintly bluish colour of its wall and taenia coli. Fossa in relation to the caecum are superior ileocaecal fossa, inferior ileocaecal fossa and subcaecal fossa.

RETOPERITONEAL RELATIONS

The structures that present retroperitoneally and related to the right ileac fossa are External iliac artery, External iliac Lymph nodes, Iliacus muscle, Iliac psoas muscle, Right iliac bone, and right ureter. The ureter lie on the medial portion of the psoas major and enter pelvis by crossing either the common or beginning of the external iliac artery.

DIFFERENTIAL DIAGNOSIS OF SWELLINGS IN THE RIGHT ILIAC REGION

I. PARIETAL SWELLINGS

There is no special parietal swelling in this region. An iliac abscess (pyogenic) or an appendicular abscess may burrow through the anterior abdominal wall and may become parietal. Anterior abdominal wall haematoma due to inferior epigastric artery injury also cause RIF swelling.

II. INTRA ABDOMINAL SWELLINGS

These swelling may develop in connection with the structures. Which are normally present in this region or may originate from organs lying in other regions and abnormally invade to this region.

APPENDICULAR LUMP

Appendicular lump is the commonest swelling in the right iliac region. The lump may be either an appendicular mass or an appendicular abscess. The appendicular mass gradually develops on 3rd day or earlier after commencement of an attack of acute appendicitis. The mass may

not to be so easy to feel because it presents deep to musculatures. The mass consists of inflamed appendix, greater omentum, edematous, caecal wall surrounded by coils of small intestine mated together with lymph. This is an attempt by the nature to make a protective wall around the inflamed appendix to prevent general peritonitis even if the appendix perforates. With conservative treatment gradually the mass becomes smaller and disappears. This can be verified by outlining the mass with a skin pencil. The lump is irregular, firm, tender and fixed. It may be tympanic on percussion, but is so tender that the patient may not allow proper percussion to be performed. This appendicular mass should not be confused with appendicular abscess which presents with variable pyrexia and increase in the number of leucocytes with polymorphonuclear leucocytosis. Appendicular mass does not contain any pus at all, where as appendicular abscess contains pus. When the appendicular abscess tends to approach towards the surface inflammatory signs i.e. redness and oedema of the abdominal wall become evident.

ILEOCAECAL TUBERCULOSIS

In hyperplastic ileocaecal tuberculosis infection starts in the lymphoid follicles and then spreads to the submucous and subserous planes. The intestinal wall becomes thickened with narrowing of its lumen. There will be early involvement of regional lymphnodes which become matted along with the involved terminal part of the ileum and caecum to produce the lump.

Recurrent attacks of abdominal pain with diarrhoea and features of blind loop syndrome ie. Anaemia, loss of weight and steatorrhoea. Along with these symptoms a lump in the right iliac fossa with ill health and evening rise of temperature should arouse the suspicion of this condition.

This condition should be differentially diagnosed from Crohn's disease and carcinoma caecum. Anal complication such as fissure and multiple fistulae are mainly seen in Crohn's disease. Fistulae may even be seen in the right iliac fossa in Crohn's disease. Carcinoma of the caecum is a disease on the elderly. Occult blood in the stool with anemia and rapid loss of weight are features of this condition. The lump, if felt, is hard, irregular and fixed (at a later stage). Barium meal series and

follow through can differentiate these conditions. In hyperplastic ileocaecol tuberculosis a long narrow constricted terminal ileum and ascending colon with caecum in high up position can be noticed. In Crohn's disease a narrow and smooth terminal part of ileum will be devoid peristaltic waves and caecum will be normal in majority of cases. small bowel enema will show the string sign. In carcinoma of the caecum there will be an irregular filling defect affecting the caecum with soft tissue shadow showing the extent of tumours but terminal part of ileum is absolutely normal.

CROHN'S DISEASE OR REGIONAL ILEITIS

The clinical feature can be best classified into 4 stages i) inflammatory stage. When a tender mass is palpable in the right iliac fossa. The patient will run temperature and there will be moderate anemia. This condition is very much similar to acute appendicitis. Barring the fact that the patient will be having diarrhoea instead of constipation . ii) The colitis stage. When diarrhoea, fever anaemia, loss of weight etc. are present. Occult blood and mucus may be present in the stool. High incidence of fissure in ano, perianal abscesses and fistulae is significance diagnostic point at this stage. iii) The stenotic

stage. When the picture of small intestinal obstruction may supervene.

iv) The fistulae either external or internal communicating with the sigmoid colon the caecum, the urinary bladder etc. are not infrequent in the late stage. Barium meal studies will reveal loss of haustration.

UTERUS & APPENDAGES SWELLINGS

They are tubo- ovarian mass, pyosalpinx, cyst and abscess of broad ligement, fibroid uterus and ovarians cyst.

CARCINOMA OF THE CAECUM

Usually the patient is above 40. The lump may be the indicative of the disease. There may not be any alteration in the bowel habit. If present alternate constipation and diarrhoea may be the complaint. Anemia, anorexia and loss of weight are the associated signs and symptoms of this condition. Occult blood in the stool is diagnostic. Barium meal studies will show a filling defect, which is the main diagnostic feature in this condition. Soft tissue shadows of the tumor may be seen in case of a big lump. Colonoscopy is useful to find out very small lesions and for tissue biopsy.

ACTIONOMYCOSIS OF THE CAECUM AND APPENDIX

These may give rise to a hard and fixed mass in the right iliac fossa. Multiple sinuses are seen discharging sulfur granules.

IMPACT OF ROUND WORMS

In the lower part of the ileum often produces a lump. History of passing worms with stool or vomiting is often obtained.

III RETROPERITONEAL SWELLING

LUMPH NODES

Enlargement of iliac group of lymph nodes may produce lump in this region. The details of causes of enlargement of lymphonodes are filariasis , lymphosarcoma, secondary carcinoma and tuberculosis . Filarial nodes are suspected when ht e patient suffers form period attacks of fever with simultaneous tenderness and selling of the nodes. Eosinphilia and demonstration of microfilaria in blood drawn at night will clinch the diagnosis . Lymphosarcoma, the nodes are hard, nodular and fixed mass. Tuberculous nodes will be associated with other tuberculous features . These nodes may produce cold abscess, which

shows a tendency to burrow through the tissues to come more superficially and gives rise to a cold abscess in the parietes.

ILIAC ARTERY ANEURYSM

Aneurysm of right common iliac artery is rare but can be recognized by expansible pulsation and Doppler studies.

RETROPERITONEAL SARCOMA

An indefinite abdominal pain or sub acute intestinal obstruction due to pressure on the colon may be the presenting symptom. On examination a fixed smooth swelling may be discovered which will require pyelography to rule out to possibility of renal swelling.

ILEOPOSOAS COLD ABSCESS

Usually as a result of caries spine, gravitates from the affected thoraco-lumbar vertebrae down the psoas sheath deep to the inguinal ligament into the thigh. Therefore cross fluctuation above and below the inguinal ligament can be demonstrated. Deformity of the spine (gibbus) and X- ray will confirm the diagnosis.

IV) MISCELLANEOUS SWELLING

KIDNEY

The first rudiment of the kidney makes its appearance in the pelvis. With the development of the foetus the kidney gradually ascends to take up its final position. Due to some unknown reason the kidney may fail to ascend and remain permanently either in the pelvis or in the iliac fossa as a lobulated mass. I.V.P., can be make the diagnosis with certainly. CT abdomen also very useful in diagnosis this mass.

GALL BLADDER

Very occasionally a hugely distended gall bladder (hydrops) with enlarged liver may descend as low as the right iliac fossa.

RETAINED OR UNDESCENDED TESTIS

The testis develops in the lumbar region. As the foetus grown ,the testis descends through the inguinal canal into the scrotum. The testis may fail to descend and become an abdominal organ or may remain within the inguinal canal. It hardly forms a swelling when it is an abdominal organ, though the chance of malignant transformation is higher in this region. When it is within the inguinal anal it forms a

swelling which gives rise to the typical 'testicular feel'. It must be remembered that the commonest position of an ectopic testis is the superficial inguinal pouch.

APPENDICULAR LUMP

The term appendicular lump is applied in a wide sense to include any type of localizing appendicitis where definite mass has formed in the region of the appendix. It is one of the complications of acute appendicitis. The lump consists of inflamed appendix, Terminal ileum, Last few inches of mesentery, Ascending colon, Greater omentum with lymph nodes.

INCIDENCE

Varies with age

In charity hospitals 25-39%

In private hospital 15% in proportion to acute appendicitis.

CLINICAL FEATURES

Acute onset of pain starts at umbilicus and shifts to RIF with vomiting, fever and constipation.

Swelling usually appears after 48-72 hrs. The swelling is tender, fixed ill defined margin, tympanic on percussion and associated rigidity and local hyperaesthesia. In PR the lump may be palpable

PROGRESSION

Appendicular mass may go for abscess formation Abscess rupture will course general peritonitis. Resolution of mass occurs following conservative therapy in most of the cases.

INVESTIGATIONS

TC, Polymorphonuclear leucocytosis

USD will show the size of the mass lesion and the nature of the mass whether cystic or solid.

MANAGEMENT

If the appendix mass is present and the condition of the patient is satisfactory the standard treatment is “Conservative Ochsber” regime. The strategy is based on the premise that the premise that the inflammatory process is already localized and that inadvertent surgery is difficult and may be dangerous. It may be impossible to find the appendix and occasionally a faecal fistula may form.

Careful record of patient condition by PTR and BP chart and the extend of the mass should be made and the abdomen regularly reexamined. It is helpful to mark the limits of the mass on the abdominal

wall using skin pencil. A Nasogastric tube should be passed and intravenous fluid and antibiotic therapy instigated. Clinical improvement is usually evident within 24-48 hrs at which time the Nasogastric tube can be removed and oral fluids introduced. Using this regime approximately 90% cases resolves without incident. It is advisable to remove the appendix usually after an interval of 6-8 weeks.

CRITERIA FOR STOPPING CONSERVATIVE MANAGEMENT

1. Rising pulse rate & temperature
2. Vomiting or copious gastric aspirate
3. Increasing or spreading abdominal pain
4. Increasing size of mass

CONTRAINDICATIONS OF CONSERVATIVE MANAGEMENT

Not sure of diagnosis

Signs indicate inflammation still confined to appendix

APPENDICULAR ABSCESS

Emergency open drainage is done for appendicular abscess. Patient may be discharged after being afebrile. Patient is advised to come for interval appendicectomy after 6 weeks.

ILEOCAECAL TUBERCULOSIS

Tuberculosis is most important specific communicable disease in the world.

INCIDENCE

- Predominantly young people
- Common in females
- Common in people with poor housing and associated with overcrowding.

PREDISPOSING FACTORS

- Diabetes mellitus
- Gastrectomy
- Silicosis
- Steroids
- Immuno suppression

TYPES OF ILEOCAECAL TUBERCULOSIS

Hypertrophic ileocaecal tuberculosis

Ulcerative

Ulcerohypertrophic type

CLINICAL FEATURES

ULCERATIVE

Diarrhoea predominantly present

Stools foetid odour

Contains pus and occult blood

Usually secondary to pulmonary TB

HYPERPLASTIC

Pain abdomen with intermittent diarrhoea is the predominant symptom. Picture may be of blind loop syndrome. Diarrhoea with infection leading to steatorrhoea, Anaemia, Loss of Weight, Mass in RIF.

INVESTIGATION

HB, TC, DC, ESR, sputum for AFB & X- ray chest and abdomen to be taken for all cases of Heocaecal TB. This investigation will show

anemia, and lymphocytosis . Sputum AFB is negative in most of the cases, as well as Mx. ESR is raised in most of the cases.

Long narrow filling defects consisting of terminal ileum ascending colon lying vertically, sub hepatic caecum, fore shortening. Obtuse ileocaecal angle, are the features of ileocaecal tuberculosis in barium studies. This will helpful in doubtful cases.

Ultrasound, Ascitic fluid analysis both biochemical and cytological, will be helpful.

MANAGEMENT

ATT REGIME

4 drugs for first 2 months 2 ($R_3H_3 Z_3 E_3$)

2 drugs for next 10 months ($R_3 H_3$)

Dosage:

INH 600mg , Rifampicin 450mg, pyrazinamide 1500mg, Ethambutol 1200mg . Drugs are given 3 days per week.

Patient without obstructive symptoms ATT is started and given in full course. If still mass is persisting, extent the ATT for three more months. If still surgery is the choice of treatment.

If respectable and fit for surgery right hemicolectomy and ileotransverse anastomosis side to side is the better choice. If unfit and not respectable colostomy. Post operatively ATT to be started in all cases of tuberculosis abdomen.

CARCINOMA CAECUM AND ASCENDING COLON

Patient with colonic cancer have a broad range of presentation that can be subclassified according to the anatomical site of primary. Caecal and right distal to the splenic flexure, and about 45% are at or below rectosigmoid junction.

CLINICAL PRESENTATION

Right sided tumours are remarkably silent and many patients present with the symptoms and signs of iron deficiency anemia.

Patients complaints of intermittent colic abdominal pain due to the lumen becomes narrowed. The pain often postprandial.

Patient may occasionally present with the symptoms and signs of acute appendicitis and distal ileal obstruction.

The tumors may penetrate the bowel wall posteriorly producing a sealed perforation or abscess in the posas muscle.

70% of patients with right colonic malignancy presented with abdominal mass.

Altered bowel habit. Melena, loss of weight & loss of appetite are other symptoms.

Types

Proliferte, ulcerative, Tubular, Annular

INVESTIGATIONS

Barium enema gives good anatomical and topographic information. For Discrimination of wall lesion and mucosal abnormality double contrast technique is best.

Colonoscopy after preparation of bowel, enables the detailed study mucosa, visualize lesion less than 0.5cm, and that lesion can be biopsied.

USG & computed tomography are useful for detecting metastasis in liver. MRI in most sensitive method of evaluating liver, but in generally used prior to planned major hepatectomy. Tumors markers like CEA is helpful in node – negative colon cancer.

MANAGEMENT

Hospitalization, Preparation for surgery which includes bowel preparation, Mechanical, cleansing, Antiseptic, Systemic antibiotics and

Luminal Antibiotics. Improvement of GC and of Hydration with fluid and electrolytes.

Aim of bowel preparation is to mechanically cleanse the bowel to eliminate bulk faeces and reduce bacterial count. This is useful in reduce bacterial count. This is useful in reduce the risk of sepsis and anastomosis break down. Sodium phosphate fleet phosposoda preparation is having small risk of hyperphosphotemia and hypocalcemia greater compliance, less pain, fatigue and bloating. 45ml of highly osmotic cathartic is mixed with 90ml of water and taken twice.

EMERGENCY

Patient presented with obstruction improvement of DG and Hydration, than proceed for laparotomy by lower RPM incision, side to ileo transverse colostomy and immediate right hemicolectomy if circumstances favourable.

ELECTIVE

Radical resection, Rt. Hemicolectomy, lieo transverse anastomosis side to side.

ADJUVANT CHEMO THERAPY

In the presence of microscopic residual cancer, chemotherapeutic regimens effective, but not curative, for widespread cancer can lead to the eradication of micrometastasis. Hence clinical trials have explored the use of adjuvant treatment for high risk patients. Since many patients in adjuvant trials will already have been cured by surgical resection such treatment must have a low treatment related mortality to be justifiable.

ROLE OF IMMUNOTHERAPY

Indicated in case of disseminated disease with multiple metastasis.

DRUG USED

Levamisole tablet 150mg bd for 3 weeks this is a non specific immuno stimulant. Monoclonal antibodies against carcinoembryonic antigen used either along or combined with cancericidal drugs.

RECOMMENDATION

Generally healthy patients following potentially curative resection of node positive colon cancer should be offered participation in a clinical trial or advised to received 6 months of 5 fluorouracil / leucovorin or 12

months of 5 fluorouracil / levamisole. Node negative patients seemed to be at high risk because of clinical, tumour related or biologic factors should also be entered into clinical trials or offered adjuvant chemotherapy. They should be aware that there is no unequivocal proof that survival is improved with treatment.

Adjuvant perioperative infusion of chemotherapeutic agent (5FU) into the portal vein is having marginal effect.

PSOAS ABSCESS

It is the collection of pus following the course of ileopsoas muscle usually developed from the spread of caseous material from tuberculous spine.

CLINICAL FEATURES

- The duration of pain varies with the duration of spinal infection. Early symptoms may not suggest infection of spine and consequently the diagnosis is delayed for weeks.
- Constitutional symptoms like anorexia weight loss and fever.
- Patients presented with soft tender swelling in RIF.
- Severe muscle spasm is the most frequent sign. Loss of hip joint motion and hip assuming flexion attitude.
- Minor temperature elevations.

INVESTIGATIONS

TC, DC, ESR, Radiology may be characteristic of TB spine like, Disc space narrowing rarefaction of adjacent vertebral bodies, reactive sclerosis, new bone formations. Intervertebral fusion. Bacterial diagnosis

by taking pus culture and sensitivity. Percutaneous needle biopsy by postero lareral approach. Ultra sound, CT scan, Gallium scan and MRI may be useful.

MANAGEMENT

Drainage of psoas abscess. They are entirely extraperitoneal and follow the course of ileopsoas muscle. Drainage may be accomplished posteriorly, by a lateral incision along the crest of ileum or anteriorly under inguinal ligament depending on the size of the abscess and the area in which it appears. Occassionally an abscess burrows beneath are inguinal ligament and is seen subcutaneously in the proximal 3rd thigh in adductor region.

Drainage by lateral incision

Drainage by anterior incision

Drainage by ludoiff incision

RETROPERITONEAL TUMOR AND CYST

DEFINITION

Those cysts lying in the retroperitoneal fatty tissue but have no connection with any adult anatomical structure. The cystic mass may have origin from retroperitoneal organs, do not fall within the definition of the retroperitoneal cyst. Majority of this type of cystic mass derive from major retroperitoneal organs like pancreas, Kidney and Adrenal.

CLASSIFICATION

Urogenital origin arise from Wolffian remnants

Mesocolic cysts

Teratoma and dermoid

Lymphatic or chylous cyst

Traumatic blood cysts

Parasitic cyst (Hydatid cysts)

CLINICAL FEATURES

Abdominal pain 71% and weight loss Anorexia

INVESTIGATION

Plain X-ray abdomen – soft tissue shadow

IVP – to Rule out Kidney involvement

Barium studies to rule out primary GI tumor

Angiography to demonstrate tumor circulation

Venography to indicate tumor compression or infiltration of IVC>

Lymphangiography & CT – abdomen

TREATMENT

Surgery, Radiotherapy or both are the treatment option for retroperitoneal tumors.

Only 1/3 found operable remainder cases biopsy and subsequent RT on Chemotherapy, because of fixity, metastasis involvement of blood vessels or extensive metastatic involvement for lymphomas – RT.

INTUSSUSCEPTION

Invagination of a part of intestine into the immediate adjoining portion is known as intussusception usually proximal part invaginates into the distal one.

INCIDENCE

The condition is encountered most commonly in children. Where it occurs in an idiopathic form with a peak incidence at 3-9 months. Adult cases are invariably associated with lead point which is usually a polyp, a submucosal lipoma or tumor, the exception being after period of long fasting. Colocolic variety is common in adult.

PATHOLOGY

Composed of 3 parts

Entering or inner tube

Returning or middle tube (intussusceptum)

Sheath or outer tube (intussuscepiens)

The part which advances is the apex, the mass is the intussusception and the neck is the junction of entering layer with the

mass. Intussusception may be anatomically defined as Ileo ilea, ileo colic, ileo lio colic, Colo colic, multiple and retrograde, depending on the site and extent of invagination. The onset of early gangrene dependent upon the tightness of the Invagination, because of the great pressure exerted upon it by passing through the ileocaecal valve.

CLINICAL FEATURES

Repeated incidences of sub acute obstruction and variability of abdominal sign. Presence of mass that is usually inconstant. During the height of an attack an obvious mass may be present but may disappear completely. There may be an associated feeling of emptiness in the right iliac fossa (the sign of dance).

Rarely an intussuscepting carcinoma of the sigmoid colon, may prolapse per rectum or be seen through the sigmoidoscopy may be associated with typical facies of Peutz-Jeghers syndrome.

Passage of blood per rectum PR examination will show the red current Jelly.

INVESTIGATION

A plain abdominal film usually reveals evidence of small or large bowel obstruction with a absent Caecal gas shadow in ileoileal or ileocolic cases.

A barium enema may be used to diagnose the presence of an ileocolic or colocolic form (the claw sign).

Equivocal cases of ileocolic intussusception may be further evaluated by CT scan which should reveal the presence of small bowel mass.

TREATMENT

Prepare the patient with, Nasogastric tube aspiration and IV infusion should be commenced. Any fluid and electrolyte imbalance corrected. Sample of blood be sent for histocompatibility.

Hydrostatic reduction is the treatment of choice of uncomplicated cases, less than 48 hrs duration.

The absolute contraindication being

1. Peritonitis
2. Complete intestinal obstruction
3. Severely ill shocked patient

SIGNS OF SUCCESS

Free flow of contrast into number of small bowel loops.

Expulsion of faeces and flatus with barium

Disappearance of symptoms and palpable mass post evacuation
films confirming the disappearance of intussusception.

LAPARATOMY

Manual reduction or Resection and end to end anastomosis with
resection of polyp and malignancy or enterostomy and removal of
offender.

RIGHT OVARIAN MALIGNANCY

INTRODUCTION

Though it is a gynecological problem, this can be accounted into the differential diagnosis of mass in right iliac fossa.

INCIDENCE

It occupies a rank among the female malignancies. 5% of all gynecological cancers. Common in 30-60 years. Dermoid in 40-50 years. Tumors can occur between 20-30 years also.

CLINICAL FEATURES

Abdominal swelling, rarely amenorrhea

Pressure symptoms are encountered in large tumors, pressure on diaphragm leading to respiratory embarrassment, Bilateral edema due to venous obstruction.

Frequency of micturition

Retention of urine,

G.I Upset and dyspepsis.

Pain is a rare symptoms which indicates malignancy.

Features of acute abdomen due to torsion, rupture and infection tumor mass.

Ascites may present as MIGs syndrome

Fixity of the tumor

Extreme cachexia with unilateral edema, pleural effusion and involvement of left supra clavicular node.

INVESTIGATION

- Imaging technique for evaluation and define the extend of lesion.
- Ultrasound abdomen – differentials solid and cystic mass
ultrasound guided aspiration biopsy.
- Aspiration cytology form pouch of Doughlas can show malignant cells.
- Lymphangiography for staging evaluation of ovarian carcinoma.
- This can detect nodes 30% of cases.
- Colour Doppler blood flow ultrasound can detect likely malignant tumors.

- CT –for staging and diagnosis can detect distal metastasis of size large than 2 cm
- Laparoscopy staging and following up
- Tumor marker CET, ARP, LDH usual in monitoring the therapy.

TREATMENT

Surgery – Transabdominal hysterectomy with bilateral Salphingo oophrectomy. Chemotherapy with Alkylating agents Melphalan, Chlorambucil, Thiotepa, Antimetabolites 5 FU plant alkaloids vinblastin VP (16).

Others : Ciplatin, Ibroplatum

Hormonal therapy – progestin and ostrogen

Immunotherapy – most recently interleukin – 2 intraperitoneal injection.

ANALYTICAL STUDY

A study of 50 patients presenting with right iliac fossa mass was done. In the study it was noted that the patient who had a mass in the right iliac fossa usually presented with complaints of pain abdomen. The other presenting complaints were fever and vomiting. Very rarely the patients complained of mass in the abdomen and some times melena. Because the commonest cause of right iliac fossa is Appendicular lumps, commonly presented with pain abdomen fever and vomiting. A correlation between presenting symptoms and diagnosis was made. It was interesting to note that pain abdomen was a universal presenting symptoms in cases of right iliac fossa lumps . The duration of the pain varied dramatically with the diagnosis. In cases of appendicular lump with the range of 2-14days. In case of ileocaecal tuberculosis the pain was more than 2 weeks.

In a study by H.S. Shukla Hughes in England 1972 they have seen 8 cases of abdominal tuberculosis of which 4 cases presented with mass in right iliac fossa of which all were females and of age above 40 years. On lapartomy of the 4 patients one had tubeculous stricture of ileum.

One had tuberculosu mensentric lymph adenitis. One had ileocaecal tuberculosis. None had tuberculosis elsewhere except the person with mesenteric lymphadenits. In our study there were 8 females and about 43% for males. The number of females is presented with ileocaecal tuberculosis is higher incidence of tuberculosis in our part of the country as apposed to the western world.

The age incidence of patient's presenting with ileocaeal tuberculosi was between 20 to 60 years commonest age group was 30 to 40 years in our study. Also it was noted that none of these 14 patients in our study had associated pulmonary tubeculosis which is the same as in the study by Shuka et al. On laparaotomy it was found 90% cases had stricture of the terminal ileum.

In the case of appendicular lump. The age incidence is 14-55 years. All the cases of appendicular lumps were treated with conservative line of management that was abandoned in three cases. That three appendicular abscess cases were treated by incision and drainage. Malignancy of the caecum is not a common condition as evidence by this study since the incidence is only 6%. The average age

at which caecum was presented as a mass in right iliac fossa was 50 years of age.

In this study 4% of the cases were found to have intussusception . These cases presented as a mass in the right iliac fossa and with the clinical features of intestinal obstruction. Our study shows the intussusception of the small intestinecolon have presented within constant palpable masses in the right iliac fossa. These patients were taken up for emergency laparotomy and the provisional diagnosis as intussusceptio was confired at laparotomy. According to Dohnauser and Kelly 1950 the great majority of instances have some obvious causation.

The benign tumors constituted 40% and 22% in enteric and colonic type respectively. And malignancy contributed 13% and 19% respectively among the 64% of the enteric type intussusception and 36% of the colonic intussusception respectively. In our study the one cases was of the ileocolic type and one was of ileo colic type, And in both the type of cases cause was found to be non specific lymphadenitis.

Regarding the retroperitoneal tumors and cysts which presented as a mass in the right iliac fossa, a study was conducted by Panch and

Tabah in 1954 from Memorial Sloan Kettering Hospital Newyork there was 120 cases of retroperitoneal tumours of which 17cases were benign and 103 cases were of malignant tumors. 71 were sarcomas consisting of 22 cases of Rhabdomyosarcomas, 17 were liposarcomas, 6 cases were fibrosarcoma, 8 cases were leiomyosarcomas and 18 cases were undetermined. And the cases of cysts were found to be nil. But in our study of cases who presented as masses in the right iliac fossa were two. Among the two one case was turned out to be liposarcoma and another was diagnosed as retroperitoneral lymphadenopathy due to lymphoma.

In our study 4% cases were clinically and by ultrasound abdomen diagnosed as Psoas abscess. In a series by Narasanagi of Gulburgha in 1971 where 75 cases of psoas abscess was treated during 8 years period. They presented more in boys than girls in a ration of 4:1. In 10 cases of 75 cases there was history of injury. The presentation was as fever in all patients and mass in the right iliac fossa in about 58 cases. And diffuse resistance present in 17 cases. All the cases were operated under general anaesthesia where abscess was reached by an oblique muscle splitting incision in the right iliac fossa. It was found medially. In our study a young male of 30 years presented as a tender tense cystic mass in the

right iliac fossa. The mass was fluctuant. The patient had severe muscle spasm with loss of hip joint movement and the hip assumed a flexion attitude. Ultrasound of the abdomen revealed a collection of thick pus in the right iliac fossa in the retroperitoneal plane. Incision and drainage of pus was done for this patient.

In our study among the cases presented as a mass in the right iliac fossa 2% of the cases were found to be right malignant ovarian tumor.

CONCLUSION

A mass in the right iliac is a common surgical problems. When one encounters a mass in the right iliac fossa three questions have to be answered.

- What organ does the mass arise from?
- What is the pathological nature of the mass?
- What is the best line of management?

The presentation will be approached in five sections

- Anatomic considerations in the right iliac fossa
- Presentation of right iliac fossa masses
- Diagnosis alternatives
- Therapeutic alternatives
- An algorithm of a right iliac fossa mass

ANATOMIC CONSIDERATIONS

As discussed the right iliac fossa contains following anatomic structures all of which can be the source of right iliac fossa mass. They are appendix , caecum and ascending colon, Terminal ileum, Right ovary

and Fallopian tube, Right ureter, Right psoas major muscle, Ectopic organs , (kidneys / natural / transplanted) and undescended testis . In our study appendicular mass is common. The common is ileocaecal tuberculosis.

PRESENTATION

The presentation can be of two major types

- A mass with symptoms
- Symptoms drawing attention is the mass

In our study most of the cases present with symptoms drawing attention is the mass. The symptomatology that accompanies a right iliac fossa mass can be broken down into groups.

- Abdominal pain: the nature of which must be ascertained in terms of acuteness, location, nature, radiation aggravating and relieving factors etc in appendicular mass pain is short duration less than eight days, where as in ileocaecal tuberculosis the pain is more than 2 weeks.

- G.I Symptoms – Nausea, vomiting, anorexia, change in bowel habits, melena.
- G.U, Symptoms – Dysuria, frequency, surgery, pyuria, haematuria, flank pain.
- Gynaecological complaints in women: Change in menstrual character, vaginal discharge Amenorrhea.
- Systemic symptoms : fever , weight loss, anorexia

In broad terms it is also necessary to classify the presentation as:

- a. Short term – Total duration of symptoms less than 2 week.
- b. Long term Total duration of symptoms greater than 2 weeks.

CHARACTERIZATION OF THE MASS

Besides the usual description of the mass in terms of its size, shape, mobility, consistency, location and the presence of peritoneal inflammation (tenderness guarding, rigidity) etc., 3 other aspects must never be forgotten when approaching a right iliac fossa mass.

- A rectal examination with stool tested for occult blood

- An examination of the genitalia in men looking for a testicular mass or non descent.
- Pelvic examination in women.

Since the anatomical organ in the right iliac fossa are limited a careful history and examination with help to localize the organ form which the trouble arises and the likely pathology in most instances.

DIAGNOSTIC ALTERNATIVES

A Plethora of tools are available for investigating a right iliac fossa mass. A thorough knowledge of their value and limitations is necessary.

THERAPEUTIC ALTERNATIVES

Once the nature of right iliac fossa mass is defined two options were possible.

I. SURGICAL

Is necessary is large number of right iliac fossa masses

- Appendicular abscess
- Solid ovarian masses

- Ileocaecal T. B. with obstruction
- Carcinoma of the caecum
- Tubo ovarian abscess

This can be of emergency and elective emergency for

- Appendicular abscess
- Ileocaecal T. B. with obstruction

Elective for

Ileocaecal T. B. without obstruction

Carcinoma of caecum

Solid ovarian masses

II. Medical

The following conditions may need only medical management for resolution of the right iliac mass

Appendicular lump

Asymptomatic ileocaecal T.B

INVESTIGATION FOR RIGHT ILIAC

FOSSA MASS

Investigation		Sensitivity	Specificity
Haemogram	Rule out anemia in ca. caecum	Moderate	Low
Stool exam for occult blood	Ca. caecum	Moderate	Low
Ascetic fluid analysis	Ca. caecum and TB abdomen	Moderate	Low
X-ray abdomen	Mass effects, loss of psoas shadow calcification	-	-
Ba. Enema	Ca. caecum, ileocaecal T.B.	Moderate	Moderate
Ultrasound	Abscess, Tubo ovarian mass	High	High
Colonoscopy	Ca caecum, ileocaecal T.B.	High	High
C.T. Scan	Psoas abscess, retroperitoneal tumours, Ca. caecum	Very high	High

RIGHT ILIAC FOSSA MASS

SYMPTOMATOLOGY SUMMARY

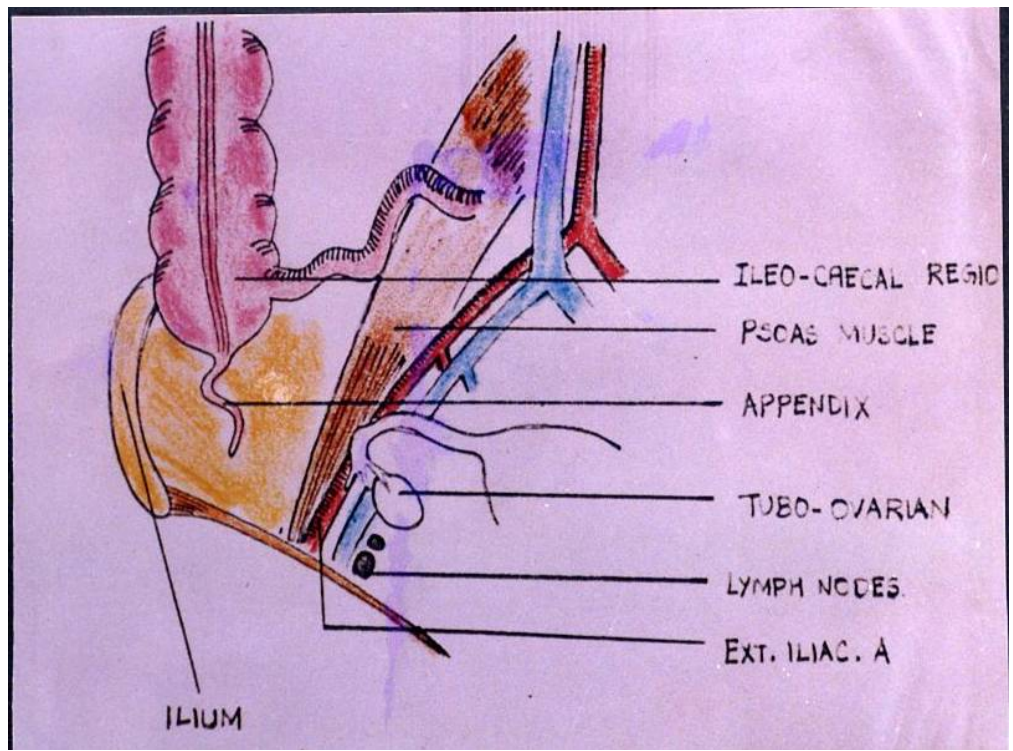
Disease	Duration	Pain	G.I. Symptoms	G.U. Symptoms	Gynecological Symptoms	System Symptoms	Tests
Appendicular lump	Short term	+	+	0	-	+	Haemogram
Ileocaecal T.B.	Long term	+	+	0	-	+	Barium enema colonoscopy
Intussusception	Short term	+	+	0	-	+	x-ray abd & varium studies
Retroperitoneal mass	Long term	0/+	0	0	-	0/+	USG/ CT Scan
Psoas abscess	Short term	+	0	0	-	+	USG
Ca. caecum	Long term	0/+	+	0	-	0/+	Barium enema colonoscopy
Rt. Ovarian malignancy	Long term	+	-	0	+	0	USG. CT scan

Master Chart

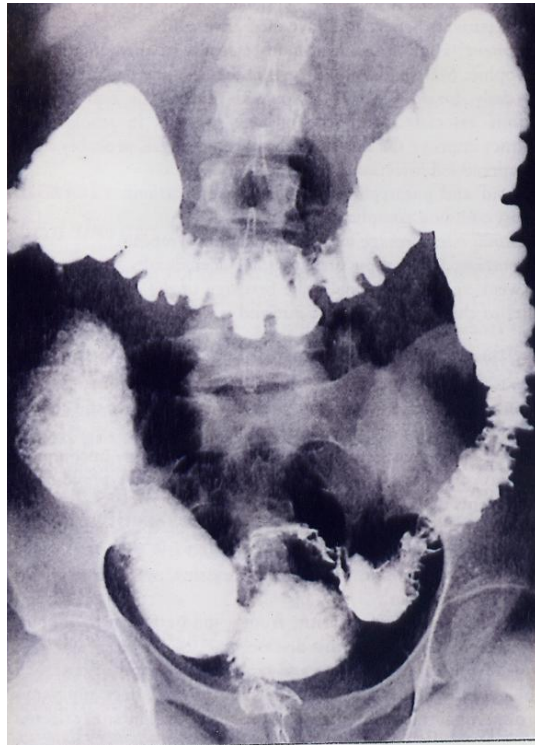
S.No	Name	Age	Sex	I.P.No	Diagnosis	Treatment
1	Parvathi	35	F	238538	Ileocecal TB	ATT
2	Maniamal	40	F	243768	Retroperitoneal mass	Enlarged lymphnode - lymphoma inoperable
3	Rani	36	F	282690	Ileocaecal TB	Right hemicolectomy with ileotransverse anastomosis & ATT
4	Suresh	30	M	268147	Appendicular mass	Conservative management and interval appendicectomy
5	Udhayakumar	38	M	212690	Ileocecal TB	ATT
6	Muniammal	45	F	291795	TB abdomen	ATT
7	Ramesh	20	M	291796	Ileocecal TB	ATT
8	Jothi	40	F	302557	Ileocecal TB	Right hemicolectomy with ileotransverse anastomosis & ATT
9	Pandiammal	35	F	310278	Ileocecal TB	Right hemicolectomy with ileotransverse anastomosis & ATT
10	Selvaraj	24	M	310340	Parietal wall haematoma	Exploration done
11	Mukamma	55	F	238536	Appendicular mass	Conservative management and interval appendicectomy
12	Periyasamy	42	M	343760	Appendicular mass	Conservative management and interval appendicectomy
13	Mookan	34	M	282688	Ileopsoas abscess	Drainage and ATT
14	Pandithurai	28	M	291566	TB abdomen	ATT
15	Pandi	21	M	291791	Appendicular mass	Interval appendicectomy
16	Santhanam	49	M	302555	Intussusception	Right hemicolectomy with ileotransverse anastomosis & ATT
17	Rajeswari	36	F	309220	TB abdomen	ATT

18	Baskaran	40	M	310274	Appendicular mass	Conservative management and interval appendicectomy
19	Velraj	44	M	310316	Ca caecum	Right hemicolectomy with ileotransverse anastomosis & ATT
20	Ramadass	49	M	323556	Appendicular mass	Conservative management and interval appendicectomy
21	Rukumani	28	F	327662	Ca caecum	Inoperable and chemotherapy
22	Pandiyammal	49	F	330964	Appendicular abscess	Drainage and interval appendicectomy
23	Chinnan	43	M	338006	Appendicular mass	Internal appendicectomy
24	Selvaraj	29	M	321697	Appendicular abscess	Drainage & interval appendicectomy
25	Thangapandi	34	M	353597	Intussusception	Right hemicolectomy with ileotransverse anastomosis & ATT
26	Muthumani	41	M	358723	Appendicular mass	Interval appendicectomy
27	Velumani	44	F	364795	Appendicular mass	Interval appendicectomy
28	Subramani	33	M	369285	Appendicular lump	Conservative management and interval appendicectomy
29	Kannan	53	M	404427	Appendicular mass	Conservative management and interval appendicectomy
30	Kannathal	61	F	407208	Ileocecal TB	ATT
31	Rakku	60	F	412188	Ileocecal TB	ATT
32	Chandran	46	M	418077	Ileocecal TB	ATT
33	Velayutham	44	M	426835	Ca caecum	Inoperable and chemotherapy
34	Selvaraj	58	M	381897	Appendicular mass	Conservative management with interval appendicectomy
35	Vasudevan	32	M	385918	Appendicular mass	Conservative management and interval appendicectomy
36	Rajan	23	M	386497	Ileopsoas abscess	Drainage and ATT
37	Lenin	20	M	391679	Appendicular mass	Interval appendicectomy

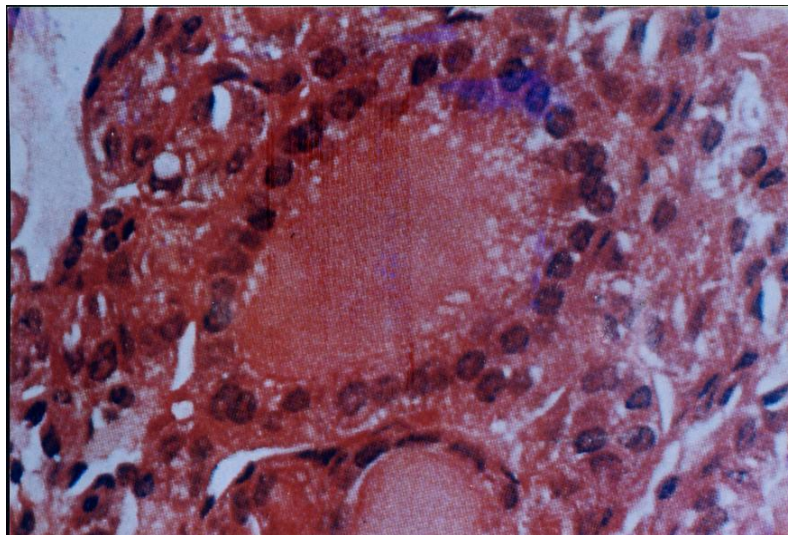
38	Ganapathy	60	M	391708	Appendicular mass	Conservative management and interval appendicectomy
39	Kalimuthu	20	M	391909	Appendicular abscess	Drainage and interval appendicectomy
40	Kumar	19	M	392944	Appendicular mass	Conservative management and interval appendicectomy
41	Jeyaraj	53	M	394256	Ca caecum	Inoperable and chemotherapy
42	Thavamani	60	M	394281	Ca caecum	Inoperable and chemotherapy
43	Selvakumar	30	M	395577	Appendicular mass	Conservative management and interval appendicectomy
44	Saravanakumar	42	M	396696	Appendicular mass	Conservative management and interval appendicectomy
45	Suresh	36	M	397665	Ileocecal TB	ATT
46	Neelamegam	60	M	402415	Appendicular mass	Interval appendicectomy
47	Chelladurai	13	M	403541	Appendicular mass	Conservative management and interval appendicectomy
48	Balakumar	26	M	403730	Appendicular mass	Conservative management and interval appendicectomy
49	Jeyam	56	M	409584	Appendicular mass	Conservative management and interval appendicectomy
50	Parvathi	42	F	401023	Mucocele appendicitis	Appendicectomy



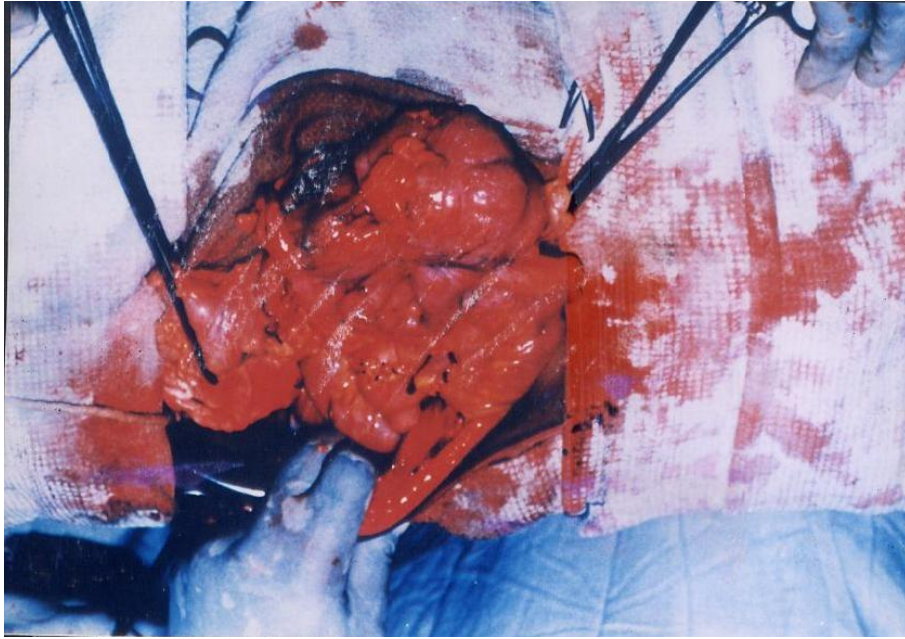
ANATOMY OF RIF



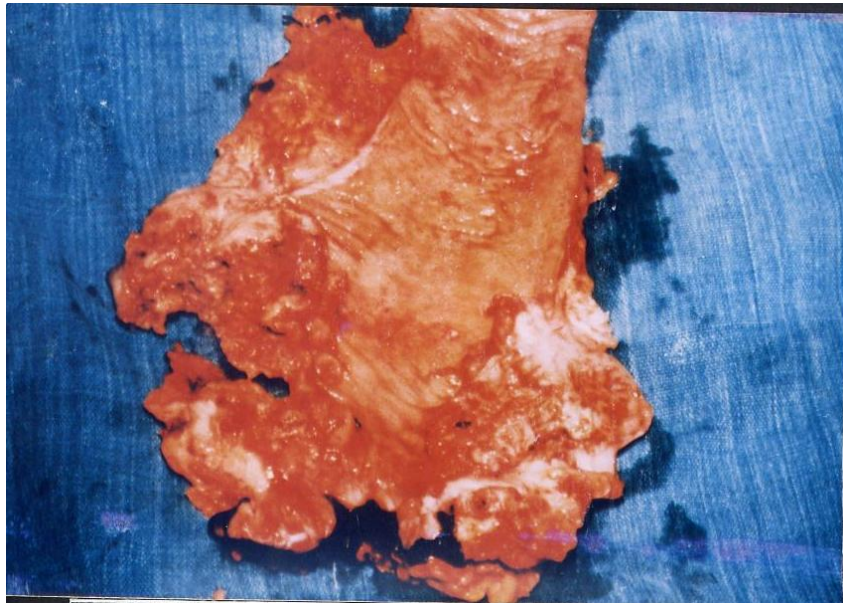
ILEOCAECAL TB BARIUM STUDIES
(Absent ascending colon and caecum with
dilatation of terminal ileum)



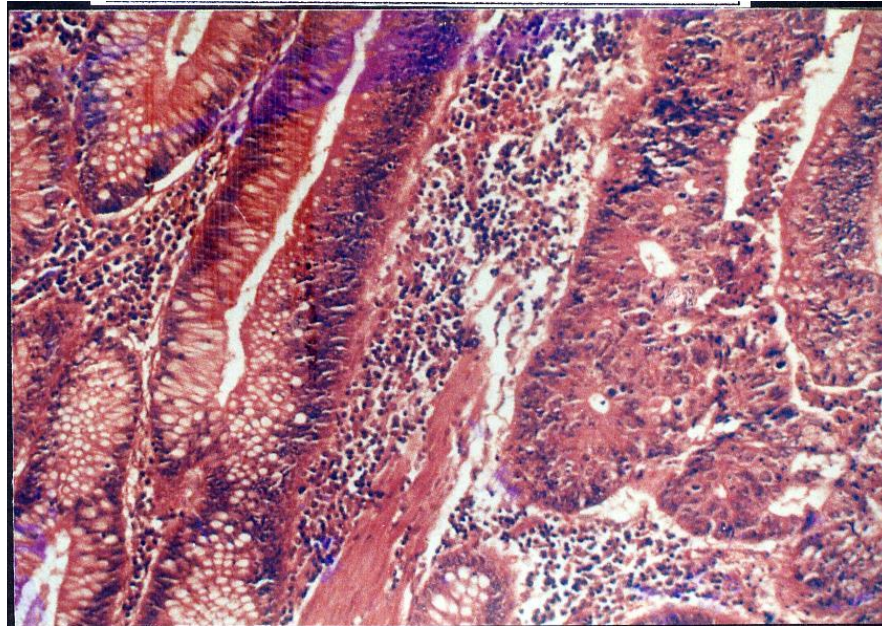
HISTOLOGY OF ILEOCAECAL TB



CARCINOMA CAECUM OPERATIVE PHOTOGRAPH



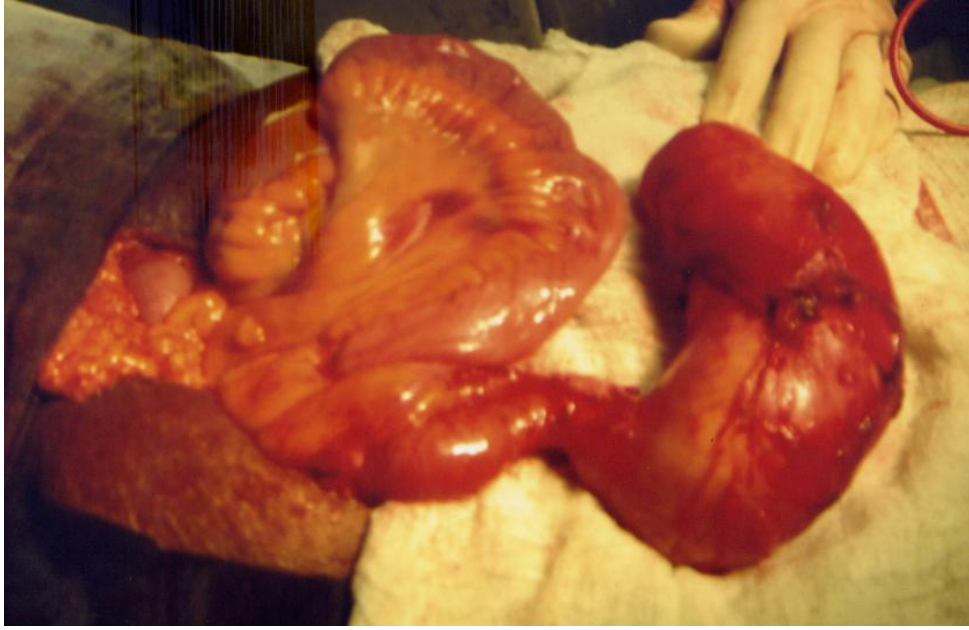
SPECIMEN OF CARCINOMA CAECUM



HISTOLOGY OF CARCINOMA CAECUM

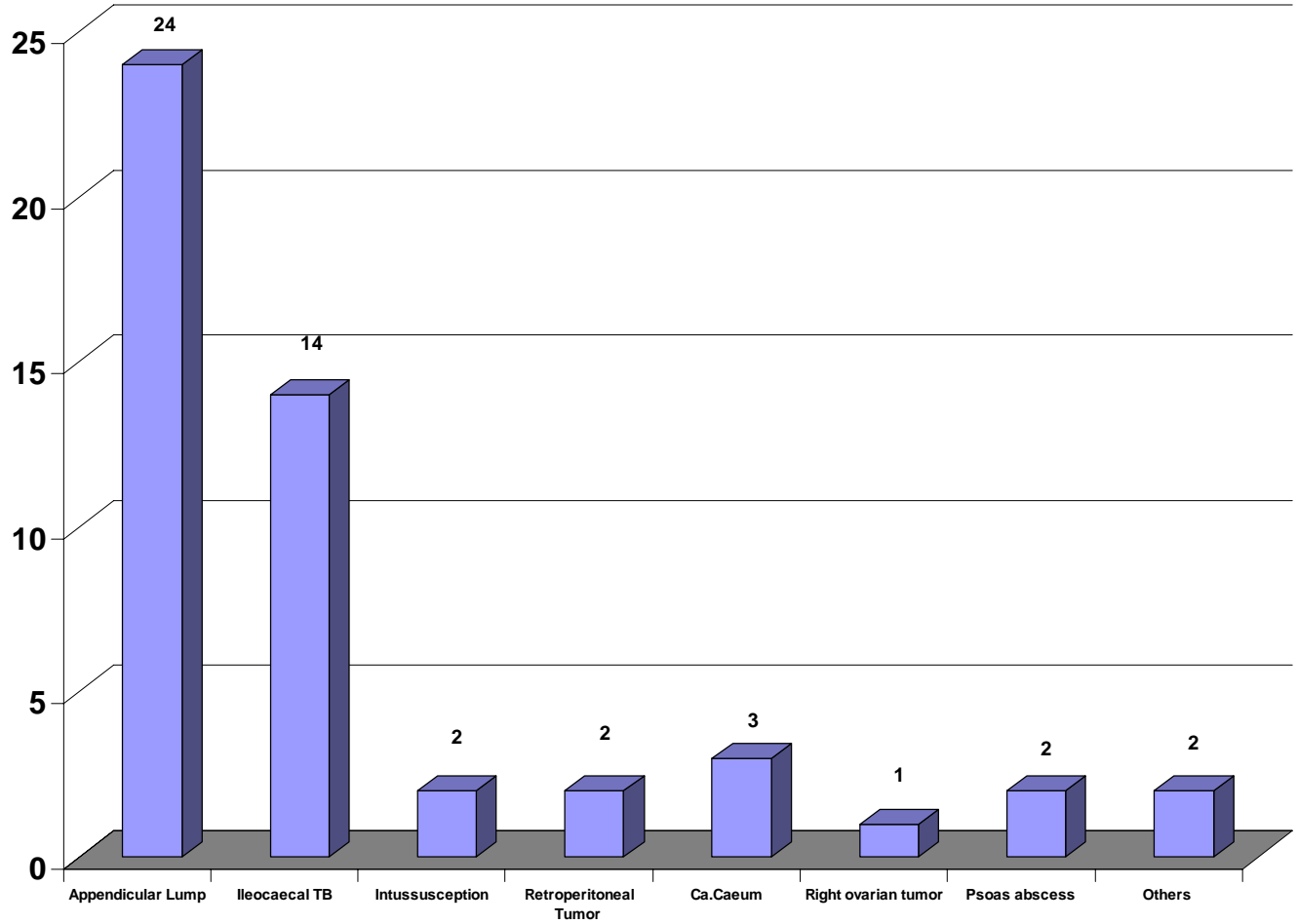


INTUSSUSCEPTION

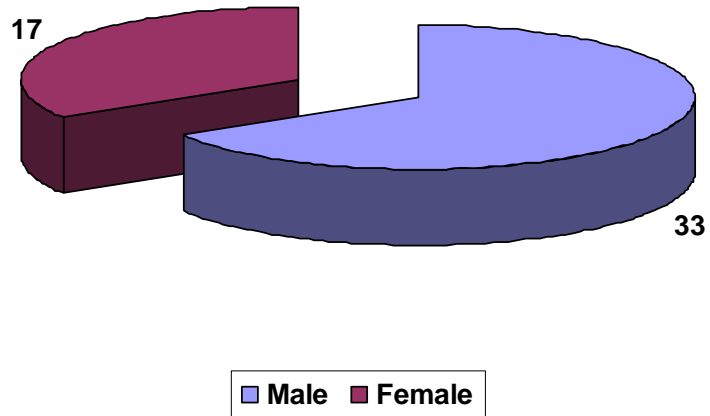


SPECIMEN OF MUCOCELE APPENDICITIS

Incidence



Sex Distribution



Age Distribution

