Abstract: The Retroperitoneal cysts are very rare, and most of the time they are discovered incidentally. Retroperitoneal cysts are uncommon, with an estimated incidence of 1 in 250,000. A Forty year old female presented with complaints of pain for six months with history of loss of appetite and history of weight loss. She was a known Diabetes mellitus and Bronchial asthma on treatment. Per abdomen examination revealed soft, tender without any mass palpable in the right lower abdomen. All basic investigations were normal. Ultrasonographam (USG) revealed 53.6 centimetres sized mesenteric cyst. Contrast enhanced computerised tomography (CECT) abdomen showed ileocaecal mass and mesenteric cyst. But colonoscopy study was normal. CEA and CA 125 were within normal limits. so proceeded to laparotomy where a separate cyst of size 8.7 centimetres arise from retroperitoneal wall and a separate left chocolate ovarian cyst found. Otherwise normal large and small bowel. Excision of both cysts done. Histopathological examination revealed simple cyst with mucous lining without any anatomical structure origin. post operative period was uneventful, patient is on regular follow up. This case is being presented for its rarity.

Keyword: Mesenteric cyst, Retroperitoneal cyst, ovarian cyst, Ileocaecal

Case report: Clinical History: A forty year old female Presented with right lower abdominal pain on and off for 6 months duration with history of loss of appetite and loss of weight for 6 months. There was no history of altered bladder and bowel habits. She was a Known Diabetes mellitus and Bronchial asthma on regular treatment. There was no history of previous exposure to Tuberculosis or any anti tuberculosis treatment the puerperal sterilisation (PS) surgery done twelve years back. She has regular three days moderate flow of menstruation. Clinical Examination: on General examination Patient was conscious and oriented without fever she was not pallor and jaundiced. There was no superficial significant lymphadenopathy. On vital examination Pulse rate was 82 per minute and Blood pressure (BP)-110/80 millimetres of mercury.

The respiratory rate was 14 per minute. The abdominal examination revealed tenderness in the right lower abdomen with no palpable organomegaly or mass. There was no evidence of free fluid in the abdomen. Per vaginal and digital rectal examination were normal.

Investigations: CBC (complete blood count)- Hb (haemoglobin) -12.6 g/dl, TC (total count) -10000 cells/cumm, DC (differential count) - Neutrophil- 68 %, Lymphocytes-24%, Basophil-2%, ESR (Erythrocyte sedimentation rate)- 23mm/hr Renal function test- Urea- 26.6 mg/dl, Creatinine- 0.8 mg/dl, Sodium-134 mEq/dl, potassium-4.2 Meq/dl, Chloride-101 mEq/dl, Urine Albumin and sugar and deposits-nil. Blood sugar-122 mg/dl. The Chest x ray Posteroanterior view and xray abdomen erect view were revealed normal study. The ultrasonogram (USG) study of Abdomen and pelvis revealed a 5×3.6 centimetres sized well defined cystic lesion in R iliac fossa possibly of Mesenteric cyst and advised computerised tomography for further evaluation. The contrast enhanced computerised tomography (CECT) reported as a Mesentric cyst involving the right iliac fossa which was Abutting the right psoas muscle and there was a Circumferential wall thickening involving the terminal ileum and ileocaecal junction and also caecum and proximal ascending colon with pericolic fat stranding with dilatation of the distal ileal loops possibly neoplastic (Sub acute obstruction due to ileocaecal mass). The Appendix was normal and Bulky Uterus with multiple Fibroids. The Colonoscopy was Normal study. In view of malignancy Carcino embryonic antigen (CEA) and cancer antigen(CA) done and found to be normal (CEA-2.0 ng/ml, CA 125-27 U/ml).

FIGURE 1.1 CHEST XRAY-NORMAL STUDY

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Operative notes: The surgery was carried out under general anaesthesia (GA) with endotracheal intubation (ET) and the patient in the supine position with Bladder catheterisation (the lower midline incision) (from umbilicus to pubic symphysis) was made and the Abdomen was opened in layers. During surgery the following Findings were noted as follows: there was a cyst of sized 8x5 centimetres filled with clear fluid found to arise from Retroperitoneal wall with stalk of tissue as a base and there was a left ovarian cyst in the pelvic. There was no Free fluid, large and small bowel were normal. Both Liver and spleen normal. After ligation of base of pedicle cyst was excised in toto. The Excision of left ovarian cyst done under the supervision of Gynaecologist and advised nil intervention needed for asymptomatic uterine fibroids. After perfect haemostasis wound was closed in layers. The Dressing done. The operative periods were uneventful. The patient Discharged on eighth post operative day and Suture removal done on twelfth post operative day. The Patient is on regular follow up.

Experts opinion: Firstly The Medical gastroenterologist opinion obtained after normal colonoscopy study who suggested it could be a Mesentric cyst, secondly from Gynaecologist for bulky uterus with multiple fibroids. The Gynaecologist suggested Asymptomatic fibroids in uterus do not need surgery. In case ovaries are involved in the complex mass may need total abdominal hysterectomy with bilateral salpingo-oophorectomy. So inform us when the patient posted for surgery. Thirdly from Chest physician gave the opinion of no evidence of pulmonary or Extra pulmonary Tuberculosis. 

Histopathological examination: A simple (benign) cyst with mucous lining without any anatomical structure origin with no degenerative or neoplastic changes (the above finding is consistent with the primary retroperitoneal cyst).

Discussion: The Cysts that lie in the retroperitoneum without connection with any adult anatomical structure, except by areolar tissue. Retroperitoneal cysts are uncommon, with an estimated incidence of 1/250,000. Approximately one third of patients with retroperitoneal cysts are asymptomatic and the cyst is found incidentally. Patients may be asymptomatic or present with abdominal pain, referred pain to the legs or weight loss. The retroperitoneal space is bounded posteriorly by the spine, psoas and quadratus lumborum muscles, superiorly by diaphragm and inferiorly by the levator muscles of pelvis. Anteriorly, this space is bounded by posterior parietal peritoneum. This potentially largespace contains organs derived from ectoderm and endoderm that are all embedded in a loose network of connective tissue. This allows both primary and metastatic tumours to grow silently before the appearance of signs and symptoms. These masses are divided into neoplastic (cystic lymphangioma, mucinous cystadenoma, cystic teratoma, cystic mesothelioma, Müllerian cyst, epidermoid cyst, tailgut cyst, bronchogenic cyst, cystic change in solid organs) and non-neoplastic (pancreatic pseudocyst, non pancreatic pseudocyst, lymphocele, urinoma, hematoma) lesions. Based on embryologic origin and histologic differentiation, RPCs are classified into (a): Urogenital; (b): Mesocolic; (c): Cysts arising in cell inclusions; (d): Traumatic; (e): Parasitic and (f): Lymphatic. Neoplastic Cysts Cystic Lymphangioma Cystic lymphangiomas are uncommon, congenital benign tumors and occur due to failure of the developing lymphatic tissue to establish normal communication with the remainder of the lymphatic system. Most cystic lymphangiomas occur in the head or neck; a retroperitoneal location is unusual. At pathologic analysis, cystic lymphangiomas are unilocular or multilocular cysts containing clear or milky fluid and lined with a single layer of flattened endothelium. Cystic lymphangiomas can occur anywhere in the perirenal, pararenal, or pelvic extraperitoneal spaces. They may cross more than one compartment of the retroperitoneum. Cystic lymphangiomas are more common in men and can occur at any age. At CT, cystic lymphangioma typically appears as a large, thin-walled, multiseptate cystic mass. Its attenuation values vary from that of fluid to that of fat. An elongated shape and a crossing from one retroperitoneal compartment to an adjacent one are characteristic of the mass. Rarely, cystic lymphangiomas may have wall calcification. Surgical excision is the treatment of choice. Mucinous Cystadenoma Primary mucinous cystadenomas are rare retroperitoneal cystic lesions that occur in women with normal ovaries. The histogenesis remains unclear, although four main hypotheses have been advanced with regard to the formation of retroperitoneal mucinous tumors. According to the first three hypotheses,
the tumor arises either from ectopic ovarian tissue, from a teratoma in which the mucinous epithelium has overridden all other components to survive as a single cell component, or from remnants of the embryonic urogenital apparatus. Recently, a fourth theory has gained wide acceptance. This theory suggests coelomic metaplasia as the causal agent, whereby tumors arise from invagination of the peritoneal mesothelial layer that undergoes mucinous metaplasia with cyst formation. Early diagnosis of primary mucinous cystadenomas is important because of their malignant potential. Primary retroperitoneal mucinous cystadenomas usually manifest as a homogeneous, unilocular cystic mass at CT. Differentiating this mass from cystic mesothelioma, cystic lymphangioma, and nonpancreatic pseudocyst is difficult. Although aspiration is a good method for delineating the nature of the cyst, cystographic analysis of the aspirated fluid frequently fails to reveal the type of epithelial cells lining the cyst. Therefore, exploratory laparotomy with complete excision of the cyst is usually indicated for both diagnosis and treatment. At microscopic analysis, the cyst is lined by a single layer of tall columnar epithelial cells with pale cytoplasm and basal nuclei. Cystic Teratoma Retroperitoneal cystic teratomas are cystic tumors composed of well-differentiated derivations from at least two of the three germ layers (ectoderm, mesoderm, endoderm). Most patients are female, and the tumor is commonly diagnosed in newborns, who are usually asymptomatic. A cystic teratoma is likely to be benign, whereas a solid teratoma is likely to be malignant. At CT, a mature teratoma of the retroperitoneum manifests as a complex mass containing a well-circumscribed fluid component, adipose tissue, and calcification. The presence of hypoattenuating fat within the cyst is considered highly suggestive of cystic teratoma. With the presence of calcifications in the cyst wall, cystic teratoma is even more likely. Cystic Mesothelioma Cystic mesotheliomas are rare benign neoplasms with a mesothelial origin that originate in the serous lining of the pleural, pericardial, or peritoneal space. Cystic mesothelioma usually occurs in the surfaces of the pelvic viscera but may occur in the retroperitoneum. Unlike malignant mesothelioma, cystic mesothelioma is not related to prior asbestos exposure. It does not metastasize but may recur locally and occurs more frequently in women. Abdominal pain is the most common symptom. Pathologic analysis demonstrates a unilocular or multilocular thin-walled cyst containing watery secretions. Cystic mesotheliomas usually appear as nonspecific, thin-walled, multilocular cystic lesions at CT. They may be radiologically indistinguishable from lymphangiomas and other retroperitoneal cysts. Müllerian Cyst Urogenital cysts arise from vestiges of the embryonic urogenital apparatus and can be classified into pronephric, mesonephric, metanephric, and müllerian types based on their embryonic lines. Müllerian cyst of the retroperitoneum is an extremely rare disease that is thought to be a subtype of urogenital cyst. It is a benign condition that can be cured with surgical resection. Müllerian cyst of the retroperitoneum occurs in women from 19 to 47 years of age. With respect to pathogenesis, the retroperitoneal tissue may have an aberrant müllerian duct remnant, which might have a capacity for growth in the case of abnormal hormonal stimuli. Lee et al asserted that hormonal stimuli influenced the growth of müllerian cyst because most patients received several hormone shots for menstrual irregularities. At CT, müllerian cyst manifests as a unilocular or multilocular thin-walled cyst containing clear fluid. The differential diagnosis includes cystic mesothelioma and cystic lymphangioma. Clinical history may be useful for differentiating müllerian cyst from other retroperitoneal cystic masses because the former usually occurs in obese patients with various hormonally induced symptoms. At microscopic analysis, the cyst is lined with cuboidal to columnar epithelial cells with cilia and the cyst wall consists of thicker smooth muscle. Epidermoid Cyst Epidermoid cysts rarely arise from the cystic portion of the bronchial tree and are secondarily infected, perforated, or large enough to compress adjacent organs. A case of adenocarcinoma arising in a retroperitoneal bronchogenic cyst has been reported. At CT, bronchogenic cysts manifest as rounded, well-circumscribed hypoattenuating cystic structures without enhancement. If bronchogenic cysts manifest as retroperitoneal masses, they are usually located at the subdiaphragmatic space. They can be misdiagnosed as solid masses because they appear hypodense compared to the protein contents of the lesion. In addition, bronchogenic cysts may have calcifications. Cystic change in solid neoplasms on rare occasions, other types of solid retroperitoneal neoplasms (e.g., paraganglioma, neurogenic tumor) can be cystic. Retroperitoneal paragangliomas arise from specialized neural crest cells distributed along the aorta in association with the sympathetic chain, often giving rise to clinical symptoms because of the catecholamines they produce. The diagnosis is confirmed with assays of urine and blood for catecholamines and their metabolites. At CT, retroperitoneal paragangliomas usually have homogeneous soft-tissue attenuation or central areas of low attenuation. Rarely, these masses demonstrate internal hemorrhage with subsequent liquefaction and formation of a fibrous capsule, thereby mimicking cystic masses.
Neurilemoma is an encapsulated tumor that arises from the neural sheaths of peripheral nerves. It usually occurs in young to mid-aged people, and women are affected twice as often as men.

Retropertioneal neurilemoma is usually located in the paravertebral space or presacral pelvic retroperitoneum. It may show prominent cystic change resulting from secondary degenerative change caused by an inadequate blood supply to the center of the tumor. Chemotherapy reduces the bulk of the soft-tissue tumor and induces tumor necrosis and cystic hemorrhage. Hematocytomas from gastrointestinal stromal tumors that respond to treatment with STI-571 (Gleevec; Novartis, Basel, Switzerland) may appear as simple cysts at contrast-enhanced CT.

Pseudomyxoma Retropertionei Pseudomyxoma peritonei is a rare condition that is characterized by intraperitoneal accumulation of gelatinous material owing to the rupture of a mucinous lesion of the appendix or ovary. Although pseudomyxomas usually arise in the peritoneal cavity, they may occur in the retroperitoneum. Pseudomyxoma retroperitonei is caused by the rupture of a mucinous lesion in the retrocleft appendix and fixation of the lesion to the posterior abdominal wall. The imaging findings in pseudomyxoma retroperitonei are similar to those in pseudomyxoma peritonei. At CT, pseudomyxoma retroperitonei appears as multilocular masses with thick walls or septa that displace and distort adjacent structures. Curvilinear or punctate mural calcifications may also occur. Perianal Mucinous Carcinoma Perianal mucinous carcinoma is a rare disease that may arise from an anal fistula, an anal duct, or a duplicated duct. It spreads around the anal canal and extends into the perianal soft tissue. The overlying anorectal mucosa remains intact. Mucinous carcinoma is characterized by abundant mucin production with organized mucinous pools and infiltration into the perianal soft tissues. Although several reports have described the pathologic features of perianal mucinous carcinoma, there is a paucity of information regarding its imaging features. In a study by Nishimura et al., this neoplasm appeared at CT as a calcified, perirectal mass with displacement of the rectum. Nonneoplastic Cysts Pancreatic Pseudocyst Pancreatic pseudocysts, which are round or oval encapsulated collections of pancreatic fluid, are most often peripancreatic in location but may also be seen in the abdomen, mediastinum, and pelvis. Clinical symptoms are related to the underlying inflammatory pancreatic disease. Elevated amylase levels in the serum and urine are helpful for diagnosis of this condition. A pancreatic pseudocyst manifests at CT as a round or oval fluid collection with a thin or thick wall. The CT diagnosis of pancreatic pseudocyst in the retroperitoneum is not difficult when other signs of acute pancreatitis are present. Nonpancreatic Pseudocyst Nonpancreatic pseudocysts are rare lesions that usually arise from the mesentery and omentum. They usually have a thick, fibrous wall and contain hemorrhage, pus, or serous fluid. Unlike pancreatic pseudocysts, they are not associated with high levels of amylase or lipase in the cystic fluid. At microscopic analysis, the cyst wall is seen to contain fibrous tissue without an epithelial lining. Nonpancreatic pseudocysts manifest at CT as unilocular or multilocular fluid-filled masses with thick walls. Lymphocele Lymphoceles are fluid-filled cysts without an epithelial lining that occur after pelvic or retroperitoneal lymphadenectomy or renal transplant surgery. They occur in 12%–24% of patients who undergo radical lymphadenectomy. Retroperitoneal lymphoceles may cause venous obstruction, with subsequent edema and thromboembolic complications. At CT, a lymphocele manifests as a low-attenuation mass. Negative attenuation values due to fat within the fluid are rare but are highly suggestive of a lymphocele. Calcification of the lymphocele wall may be seen on rare occasions. Although lymphocele may be confused with urinoma, hematomas, or abscesses, it is helpful in making the diagnosis. Urinoma A urinoma is an encapsulated collection of chronically extravasated urine. Both obstructive causes and nonobstructive causes