# RETROPERITONEAL LYMPHOCELE- A SURGICAL DILEMMA

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**ABSTRACT:**

**IMPORTANCE:** Idiopathic retroperitoneal lymphocele is an extremely rare entity. Their diagnosis and management is a challenge for many surgeons. This study addresses one such extremely rare case of idiopathic retroperitoneal lymphocele which was diagnosed and managed with the help of intranodal lymphangiography and embolization.

**OBJECTIVE:** This study aims to discuss an unusual clinical presentation of a case of idiopathic retroperitoneal lymphocele, the imaging modalities available for diagnosis and the various treatment options.

**CASE PRESENTATION:** A 56 year old male presented with vague abdominal discomfort on and off since last 3 years without any other significant history and a completely normal local and systemic examination. Radiological investigation with a USG guided pigtailing revealed a collection of turbid milky white fluid which was diagnosed as lymphocele on the basis of biochemical examination.MR lymphangiography raised a suspicion of a communicating lymphatic channel with the cystic cavity. Intranodal lymphangiography with lymphatic embolization was performed which showed successful therapeutic results.

**CONCLUSION:** Clinicians must be aware that though unusual, idiopathic retroperitoneal lymphocele can present as a differential diagnosis for retroperitoneal cystic mass. No diagnostic algorithm is yet available. Diagnosis necessitates a strong index of suspicion, proper radiographic assessment, and fluid biochemical tests.

**KEY WORDS:**

Lymphocele, retroperitoneal, lymphangiography, percutaneous drainage, sclerotherapy.

## INTRODUCTION:

A lymphocele is a lymphatic collection without any epithelial lining. [1] Retroperitoneal lymphocele occurs after surgeries involving lymphatic dissection [2] Trauma/ disruption to the lymphatics causes it to develop in the anatomic compartment [3] Idiopathic lymphocele is uncommon.

Small retroperitoneal lymphocele are asymptomatic [4]. Compressive symptoms like hydronephrosis, increased urinary frequency, lower limb odema occurs on enlargement [4] The differential diagnosis includes urinoma, hematoma, abscess, psuedocyst of pancreas [4] USG/CT/MRI helps in diagnosis. Lymphangiogram is useful investigation. Percutaneous drainage with sclerotherapy is preferred over open external/ internal drainage or excision via open/ laproscopic surgery [3]

Hereby, we describe an uncommon instance of idiopathic retroperitoneal lymphocele that responded effectively to intranodal lymphangiography and lymphatic embolization.

## CASE REPORT:

A 56 year old male presented with abdominal discomfort on and off since last 3 years. There was no history of nausea, vomiting, altered bowel habits or urinary symptoms. No history of trauma. No previous surgeries in past. On examination, abdomen was soft, mild tenderness was present in the epigastric region on deep palpation. There was no organomegaly, free fluid or palpable lump.

The baseline investigations were normal. Ultrasonography revealed a paracaval retroperitoneal cyst of 9*7*6 cm, 230 cc volume compressing inferior vena cava and right renal pelvis. CECT confirmed the ultrasonography findings suggesting a 9*7*7 cm lesion medial to the right kidney at the level of L2-L3 vertebrae displacing the ureter anterolaterally, anteriorly abutting the $4^{th}$ part of duodenum, medially compressing the inferior vena cava and abutting the right psoas muscle posteriorly

A diagnosis of retroperitoneal cyst was made with the differential diagnosis of urinoma, lymphocele, mesenteric cyst.

***FIGURE1. CECT abdomen and pelvis delineating retroperitoneal cyst***

Under USG guidance, pigtail was inserted. A non-foul smelling milky white turbid fluid was drained, probably chyle. Fluid culture and sensitivity was suggestive of no growth. The fluid examination revealed raised triglyceride levels [3137 mg/dl]. Presence of chylomicrons confirmed the diagnosis of lymphocele. Catheter was placed insitu for 5 days post procedure. Approximately, 200cc -300 cc of milky white fluid drained daily raised the query of the presence of a communicating lymphatic channel. MR lymphangiogram done on day 5 showed contrast opacification of the retroperitoneal cyst without any communication with the lymphatic channel. Histopathological examination of the tissue collected from the drain fluid suggested lymphocele.

***Figure 2: Fluid drained after USG guided pigtailing***

Intranodal lymphangiography was performed. Under ultrasound guidance, 5 ml lipoidol agent was injected into 3 inguinal lymph nodes bilaterally. On delayed imaging, leak of dye was identified in pigtail draining the cyst from the retroperitoneal lymphatics, suggesting fistulous communication. A dilated lymphatic channel was identified. Sclerotherapy was done in same sitting using a mixture of lipoidal agent and n-butyl 2 cyanoacrylate [2:1]. The sclerosant was injected into the lymphatic channel and the cyst. Post sclerotherapy, drain output reduced over next 5 days. Patient improved symptomatically. Repeat CT scan and dye studies after one week showed nearly complete obliteration of the cyst. Patient was discharged after removal of catheter.

***Figure 3: Intranodal lymphangiography delineating the cyst and leak through the pigtail***

***Figure 4: Injected sclerosant into the cystic cavity***

**DISCUSSION:**

A lymphocele is a lymphatic collection without epithelial lining [1]. Retroperitoneal lymphocele develops after kidney transplantation, radical surgeries for malignancies, or lumbar spine fractures [2].The incidence of lymphocele following retroperitoneal surgeries is 6-7% [2].

The common iliac lymphatic veins draining the pelvis and lower extremities form the ascending vertical lumbar lymphatic trunks. They unite with the lymphatics draining the abdominal and retroperitoneal viscera to form the cisterna chili. Located anterior to the L1-L2 vertebrae, it runs encephalad along the aorta and the inferior vena cava in the retroperitoneum. At the intersection of the left jugular vein and subclavian vein, lymph from the cisterna chyli enters the venous circulation after passing through the thoracic duct [4]. The lymph above the cisterna chyli is creamy white. The lymph below the cisterna chyli is straw-colored, low in triglycerides. [4]. Retroperitoneal lymphocele arises after retroperitoneal surgeries damage the adjacent lymph vessels causing lymphatic fluid leak.

Lymphoceles are mistaken for retroperitoneal urinoma, hematoma, or abscess. [5] Retropreritoneal cystic masses can be true cysts with epithelial lining and include urogenital, mesocolic, traumatic, parasitic, or lymphatic cysts. [6] Retroperitoneal cysts has an estimated incidence of 1/5750-1/250000 cases. One-third of them are asymptomatic [7].

Idiopathic lymphoceles are very rare and diagnosed accidentally. They become symptomatic due to compression on adjacent structures. [1] A persistent lymphocele may cause hydronephrosis, increased micturation frequency, lower limb edoema, discomfort, pain, or secondary infection [4]. Potential complications include pyelonephritis, venous thrombosis, pulmonary embolism, chylous ascites, lymphatic fistula. [1]

An abscess, urinoma, hematoma, loculated ascites, psuedocyst of pancreas, and psuedomengingomyocele are the differential diagnoses for retroperitoneal lymphocele. [4]. Diagnosis requires suspicion, proper radiographic assessment, and fluid biochemical tests.

Ultrasonography reveals hypoechoic to anaechoic masses with transmission along with occasional septa and fragments of debris [5]. Low CT values suggest an abscess or hematoma whereas negative CT numbers indicate fat content [5]. An intravenous pyelogram rules out any potential urinary obstruction. Percutaneous needle aspiration differentiates lymphocele from urinoma. Urinoma displays the presence of urea and creatinine. The aspirate from seroma is serosanguinous unlike the straw-colored aspirate from lymphocele. [1].Our case showed the presence of chylomicrons and triglycerides in the aspirated fluid indicating the site of lymphocele just above and communicating with the cisterna chyli.

Drainage is useful for symptomatic collections because majority of the lymphoceles resolve naturally. Percutaneous, open, laparoscopic drainage are the available treatment options [5]. Since the recurrence rate is 50-80 %, percutaneous drainage under USG/CT guidance is typically used for diagnosis. [5] MRI Lymphangiogram done in our case delineated the retroperitoneal lymphocele. Since the daily drain output was around 200-300 ml, and lymphangiography didn't establish any communicating channel, intranodal lymphangiography via bilateral inguinal lymph nodes was performed. It indicated a dilated lymphatic channel communicating with the lesion. Intranodal lymphangiography and lymphatic embolization is a well-established method for delineating and obliterating connecting channels [8].We performed the sclerotherapy in the same sitting using a mixture of lipoidal agent and n butyl 2 cyanoacrylate which led to a considerable reduction in the drainage and subsequent obliteration of the lymphocele as documented by repeat CT scan and dye studies after one week. Sclerosents like sodium tetradecyl sulphate, povidone iodine and tetracycline can also be used. Prolonged treatment time of as long as 3 weeks remains a major drawback of this procedure [1]. Although the patient has postoperative discomfort and a lengthy hospital stay, the open drainage surgery offers a permanent treatment for symptomatic lymphoceles. Laproscopic drainage is another option with 7%–25% of recurrence rate. [5].

Retroperitoneal lymphocele is a diagnostic dilemma for surgeons. Percutaneous drainage under radiological guidance has been shown to be effective treatment with much less morbidity.
Interesting cases of retroperitoneal lymphocele following procedures like abdominal surgeries [9], lumbar spine fracture [2] or lumbar total disc replacement have been reported [4]. Idiopathic lymphocele is extremely rare as in our case. One such case has been reported as infraclavicular mass by Adenauer Marinhu et al [3]. Our study highlights a unique case of idiopathic retroperitoneal lymphocele. No such case has been found in review of available literature till today.

**CONCLUSION:**

Idiopathic retroperitoneal lymphocele is an extremely rare condition. Lymphoceles are asymptomatic unless significantly enlarged/ infected. A clinical suspicion, radiological and biochemical examination aids in diagnosis. MR Lymphangiography is a useful investigation. Although various treatment options are available, intranodal lymphangiography and lymphatic

embolization is a well-documented technique for delineation and obliteration of the communicating channels with an advantage of being a less morbid procedure.

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**FIGURES:**

***FIGURE1. CECT abdomen and pelvis delineating retroperitoneal cyst***

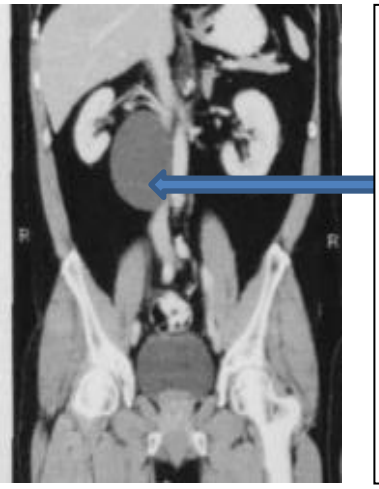

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***Figure 2: Fluid drained after USG guided pigtailing***

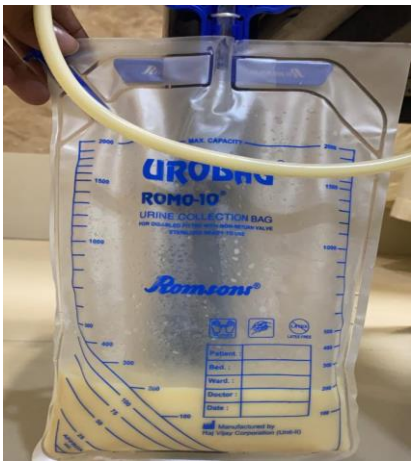
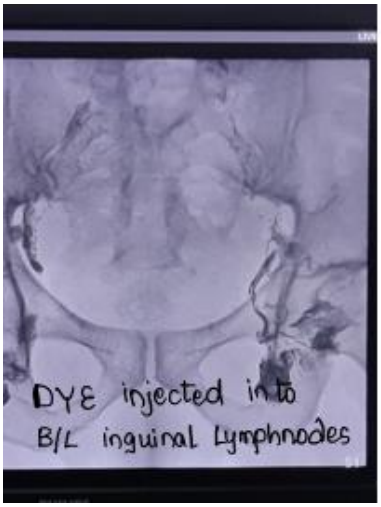



***Figure 3: Intranodal lymphangiography delineating the cyst and leak through the pigtail***



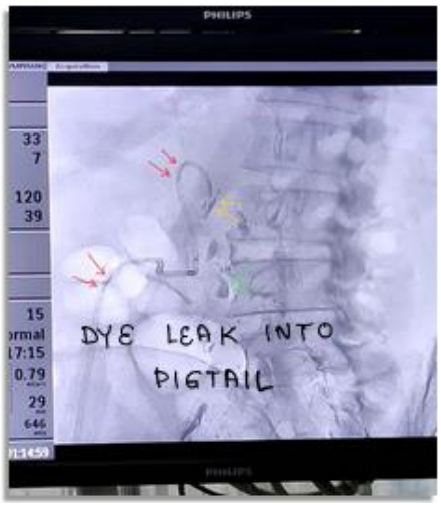



***Figure 4: Injected sclerosant into the cystic cavity***