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Uncommon Extranodal B-Cell Non-Hodgkin's Lymphomas

Dr. Jessica Pereira[1], Dr. Jawahar V[2], Dr. Sarfaraz Shaikh[3]

[1]Junior Resident, Department of Radiodiagnosis, Dr. DY Patil Medical College and Hospital, Navi Mumbai (Corresponding Author)

[2]Associate Professor, Department of Radiodiagnosis, Dr. DY Patil Medical College and Hospital, Navi Mumbai

[3]Associate Professor, Department of Radiodiagnosis, Dr. DY Patil Medical College and Hospital, Navi Mumbai

1. Objective

Two rare cases of extra-nodal B-Cell non-Hodgkin's lymphomas, which were subsequently proven on histopathology, were evaluated radiologically (ultrasound and CECT).

2. Introduction

Renal and Ovarian lymphomas can be either primary or secondary.

Primary renal lymphoma is a non-Hodgkin's lymphoma (NHL) involving the kidney in the absence of a primarily extra-renal lymphatic disease.

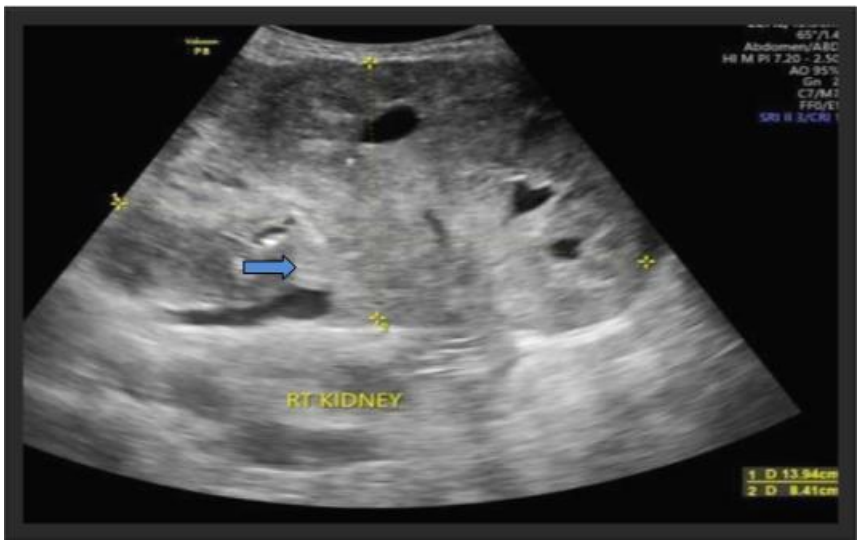
Primary ovarian Burkitt lymphoma (NHL type) is also an infrequent entity that involves the ovaries without the involvement of any other sites, especially in paediatric patients.

The incidence of a primary renal lymphoma (NHL type) is <1 %, and that of a primary ovarian lymphoma (NHL type) is < 0.5 %.

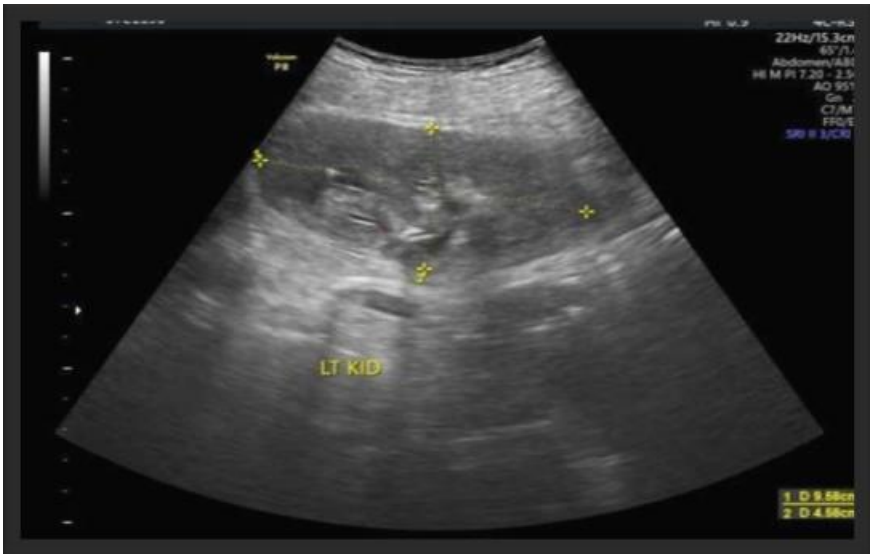
Secondary lymphomas are more common when contiguous spread from adjacent retro-peritoneal lymph node disease.

Case 1: A Rare Case of Primary Renal B-Cell Lymphoma

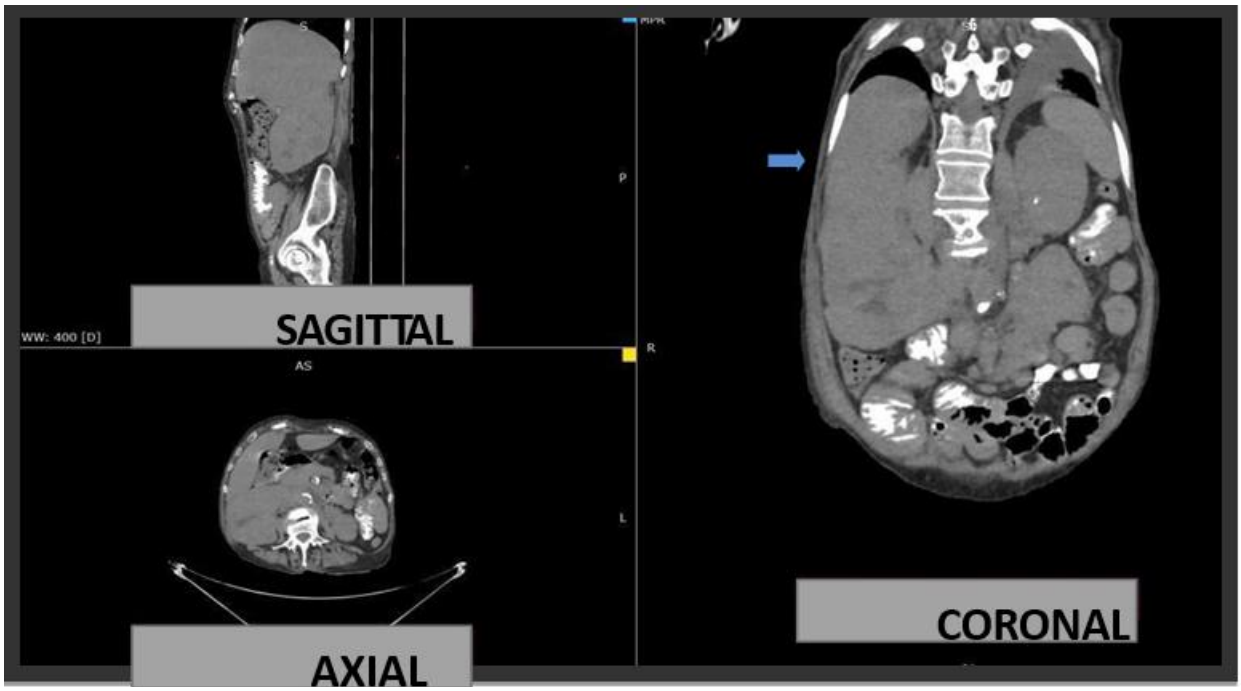
A. USG: Right Kidney
The right kidney is bulky and measures 13.9 x 8.4 cm. It shows heterogeneous echotexture with cortical thickening. The cortical medullary differentiation is lost. Areas of focal caliectasis are seen in the upper and lower poles.



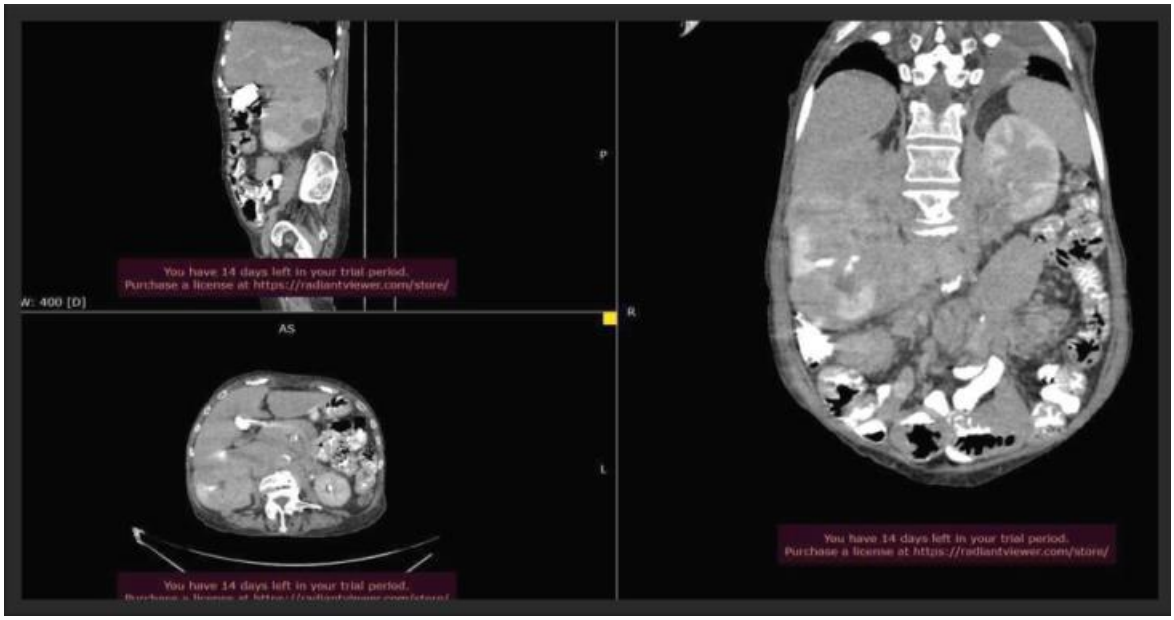
B. USG: Left kidney
The left kidney is normal in size, shape and position measuring 9.6 x 4.6 cm. A 4.9 mm-sized non-obstructive calculus is noted in the mid pole. It showed heterogeneous echotexture in its lower pole with no definite focal lesion. No evidence of hydronephrosis



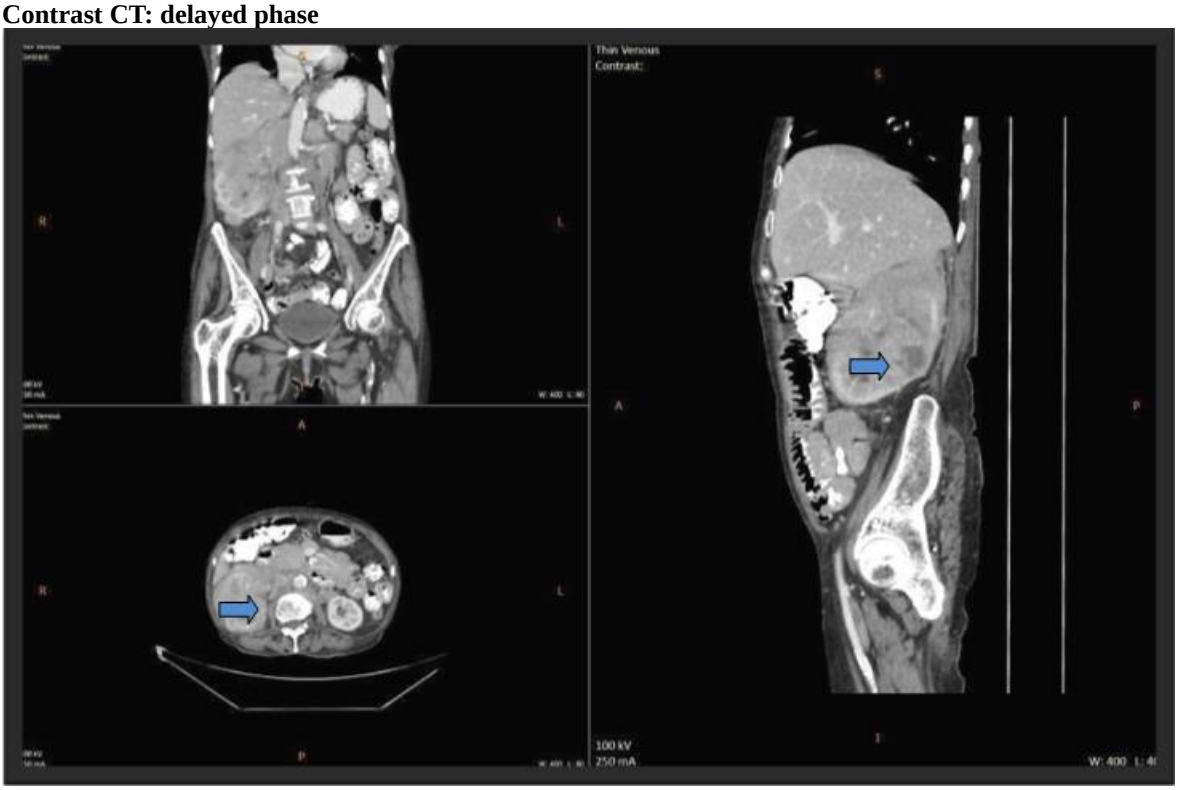
C. CT: Abdomen (PLAIN)



D. CE-CT: Abdomen (CONTRAST)



E. Post Contrast CT: delayed phase



F. CECT Abdomen revealed:

The right kidney appeared bulky with multiple, well-defined, relatively homogenous enhancing lesions with areas of non-enhancement within, completely replacing the renal parenchyma associated with loss of the normal renal contour.

A similar morphology lesion was seen in the left mid and lower pole extending into the peri-nephric spaces on either side.

Conglomerated lymph nodes were seen in the mesenteric root encasing the aorta, superior mesenteric vein, and artery, inferior mesenteric vein and artery, superior mesenteric vein, right renal vein, right renal artery, inferior vena cava.

The liver and spleen were normal with no focal parenchymal lesions seen.

Given the above CT findings the possibility of renal and retroperitoneal lymphoma was suggested.

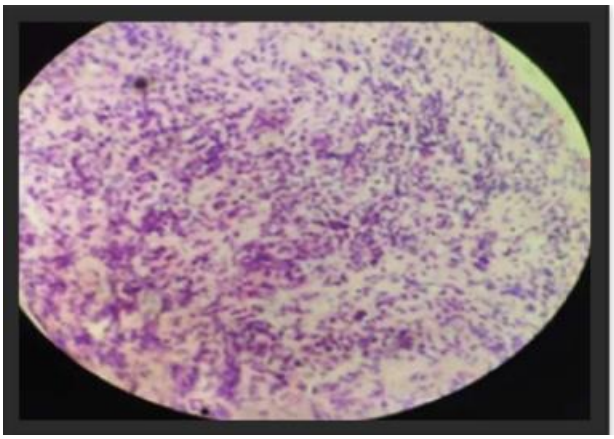
Another differential diagnostic possibility was bilateral RCC with metastatic disease.

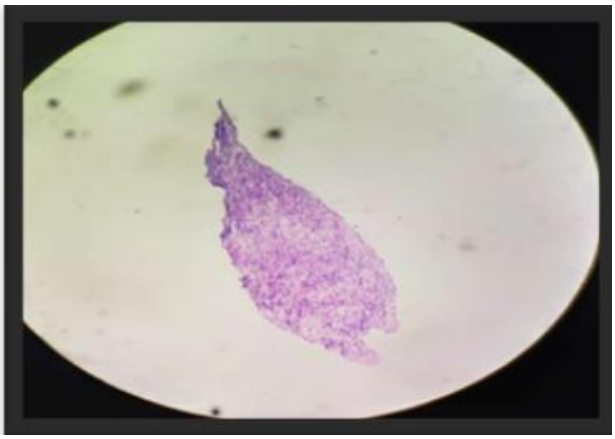
Histopathological evaluation was advised.

3. Results

An ultrasound-guided right renal mass biopsy was performed and the specimen was sent for histopathology

Histopathology:





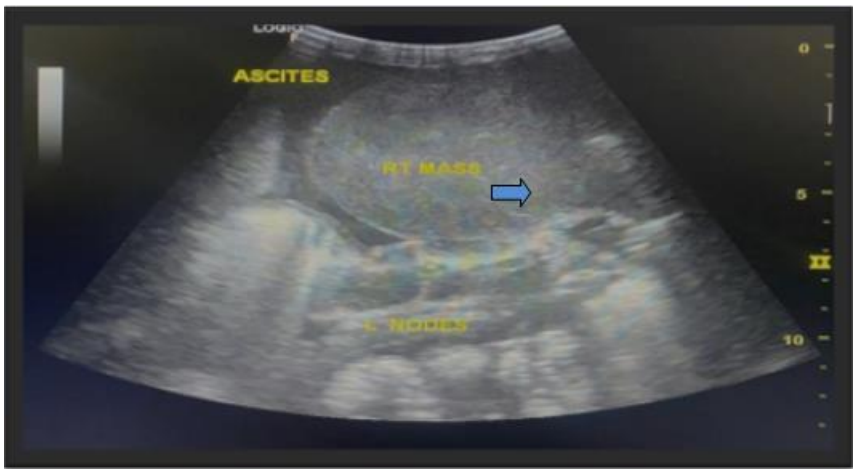
Histopathology report (DY PATIL HOSPITAL, NERUL) revealed a non-Hodgkin's lymphoma, B cell type.
Immunohistochemistry was positive for CD45, C20, CD5, CD10, and BCL2 with focal positive cyclin D1.

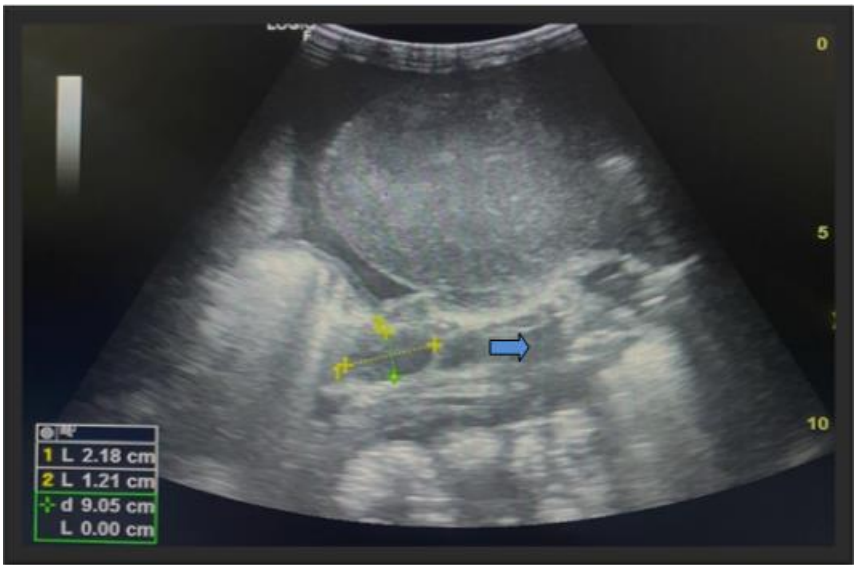
Case 2: A Rare Case of Primary Ovarian Burkitt B-Cell Lymphoma Ultrasound:

Ultrasound examination was performed using a GE LOGIQ F8 expert machine which revealed bilateral large pedunculated solid masses in the peritoneal cavity, one on either side which were assumed to be of lymph nodal origin, as there were numerous retro-peritoneal, para-aortic enlarged nodes.

Additional findings of moderate ascites and hepatosplenomegaly were present.

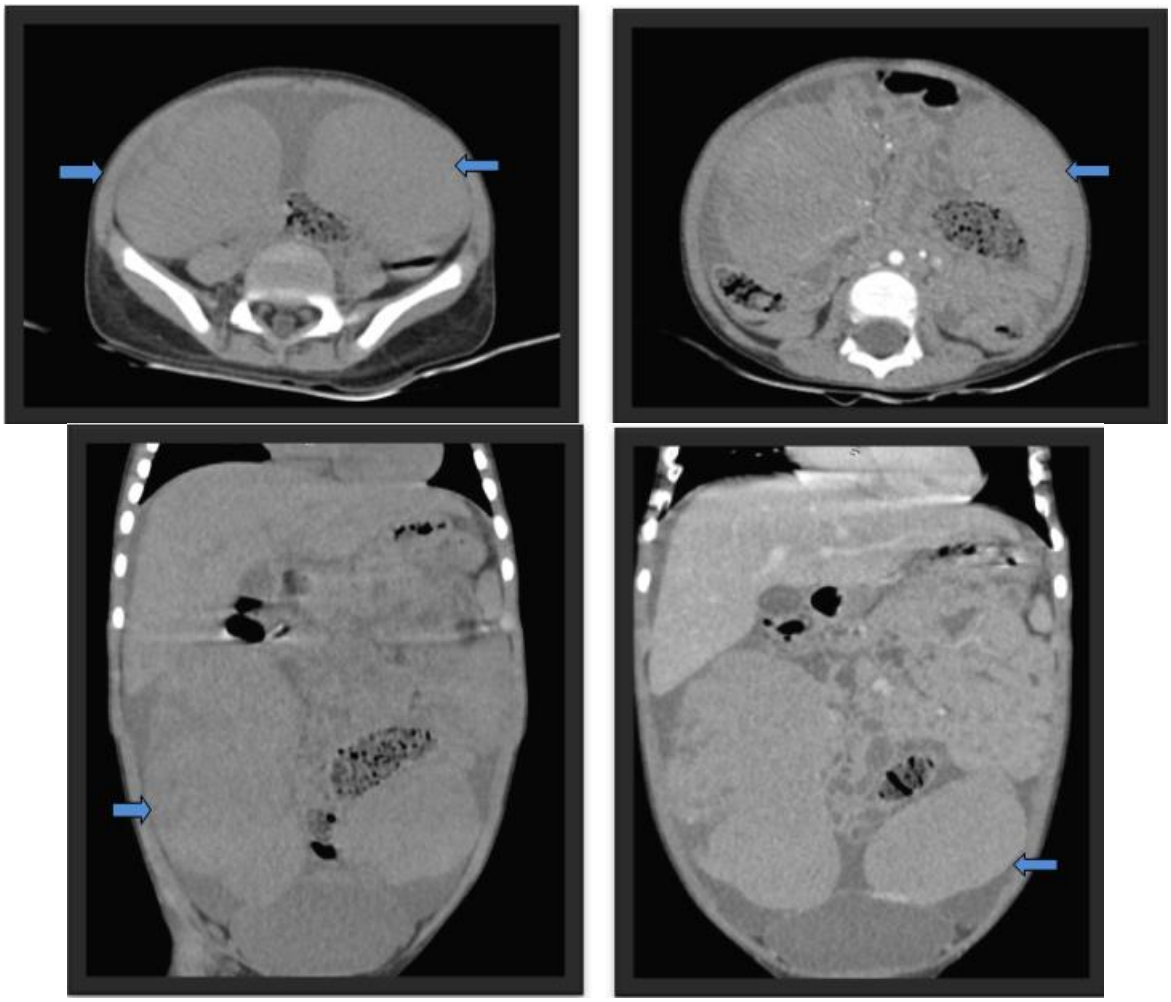
A provisional diagnosis of lymphoma was made based on these findings.





CECT Abdomen:
A CECT abdomen was performed for further evaluation and surgical planning which, showed bilateral, enhancing, solid lesions in the abdomen along with borderline hepatosplenomegaly, non-necrotic para-aortic lymphadenopathy, and moderate to gross ascites.

The differential diagnosis on the CT scan was-
1) Lymph nodal masses.
2) Probable ovarian masses i/v/o their bilaterality.
3) Germ cell tumor.
4) Neuroblastoma.



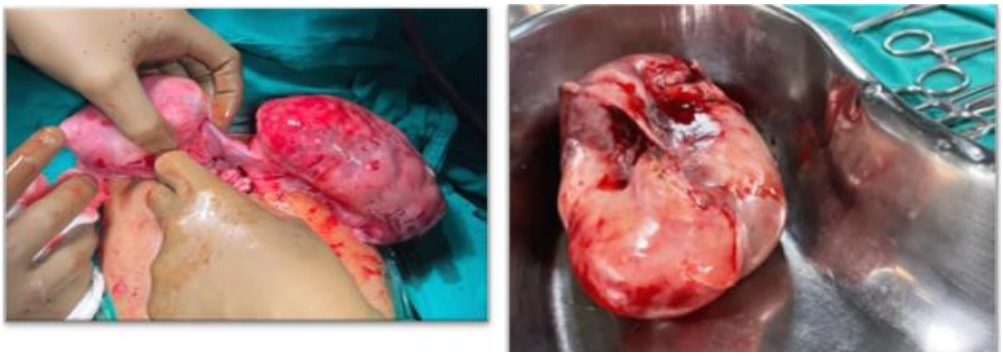
Laboratory Findings:
Hemogram was within normal limits.

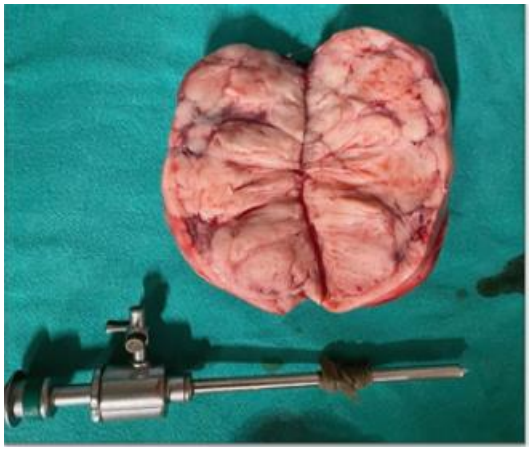
Blood investigations showed Beta HCG<1.2 mIU/ml, raised LDH and raised CA125.

Ascitic fluid cytology revealed hypercellularity, predominantly lymphocytes, occasional polymorphs, and mesothelial cells. No malignant epithelial cells were seen.

Intra-Operative Findings:
At laparotomy, the bilateral solid abdominal masses were found to be of ovarian origin.

A right oophorectomy was performed, and multiple tissue bits were taken from the left ovary.





Histopathology:
Histopathology (TATA MEMORIAL CENTRE) of the right ovarian mass as well as left ovarian tissue bits revealed Burkitt Lymphoma.

Immunohistochemistry:
On immunohistochemistry, lymphoid cells are diffusely positive for CD20, CD10 and Bcl6.

4. Discussion

The Ultrasound and CECT findings, which were suggestive of an extra-nodal lymphoma, were:

- Bilateral involvement with diffuse infiltration of the renal and ovarian parenchyma on either side.
- The presence of extensive retroperitoneal lymphadenopathy was seen.
- The absence of any known primary malignancy ruled out metastatic renal disease.
- Transitional cell renal carcinoma was ruled out as it tends to have its epicenter in the renal collecting system and spreads outwards into the renal parenchyma.

Case 1:
Primary lymphoma of the kidney is very rare, as there is no lymphatic tissue within the kidneys.
Renal involvement is often secondary to hematogenous spread or contiguous invasion from adjacent retroperitoneal lymphadenopathy. The kidneys are much more frequently involved in patients with non-Hodgkins lymphoma.

The histopathology in our case also revealed non-Hodgkin's B cell lymphoma.

PET-CT may be useful in the diagnosis of renal lymphoma because it is intensely.

FDG is avid in contrast to RCC.

Although CT is the most common imaging modality used to evaluate renal lymphoma, MRI may be helpful in patients with renal insufficiency where it shows diffusion restriction.

Case 2:
Ovarian neoplasms are rare in children. Though ovarian involvement by malignant lymphoma is known to occur in late stages of disseminated nodal disease, primary ovarian lymphoma is a rare entity.

Primary ovarian lymphoma accounts for 0.5% of Non-Hodgkins lymphoma (NHL) and 1.5% of all ovarian neoplasms.

Burkitt's lymphoma (BL) is an aggressive B-cell lymphoma characterized by the frequent presence of extra nodal sites or acute leukemia, mostly with high proliferative activity and MYC translocation. All organs of the female genital tract can be involved, and ovarian involvement predominates in a majority of the cases.

5. Conclusion

These cases highlight the primary role played by diagnostic Ultrasound Imaging in suggesting the possibility of Renal and Ovarian Lymph nodal masses with subsequent CECT correlation.

It is essential to diagnose renal lymphoma as opposed to RCC because the treatment for lymphoma is chemotherapy, while RCC is managed by surgery or ablation.