**Journal of Neonatal Surgery**
***ISSN(Online): 2226-0439***
***Vol. 14, Issue 10s (2025)***
*https://www.jneonatalsurg.com*

OPEN ACCESS

# The Unseen Malignancy: A case of Abdominal Mesenteric Burkitt's Lymphoma revealed through imaging: a case report

**Dr. Alisha Jain[1], Dr. (Brig.) Ranjit Ghuliani[2], Dr. Pradeep Kumar[3], Dr. Praneta Swarup[4], Dr. Jitendra Saini[5], Dr. Sonakshi Batra[6], Dr. Cheerla Jayanth Kumar[7]**

[*1]Junior Resident, Department of Pediatrics, School of Medical Sciences and Research, Greater Noida, Uttar Pradesh

[2]Professor, Department of Pediatrics, School of Medical Sciences and Research, Greater Noida, Uttar Pradeshss

[3]Associate Professor, Department of Pediatrics, School of Medical Sciences and Research, Greater Noida, Uttar Pradesh

[4]Assistant Professor, Department of Pediatrics, School of Medical Sciences and Research, Greater Noida, Uttar Pradesh

[5]Senior Resident, Department of Pediatrics, School of Medical Sciences and Research, Greater Noida, Uttar Pradesh

[6,7] Junior Resident, Department of Pediatrics, School of Medical Sciences and Research, Greater Noida, Uttar Pradesh

Cite this paper as: Dr. Alisha Jain, Dr. (Brig.) Ranjit Ghuliani, Dr. Pradeep Kumar, Dr. Praneta Swarup, Dr. Jitendra Saini, Dr. Sonakshi Batra, Dr. Cheerla Jayanth Kumar, (2025) The Unseen Malignancy: A case of Abdominal Mesenteric Burkitt's Lymphoma revealed through imaging: a case report. *Journal of Neonatal Surgery*, 14 (10s), 127-130.

**ABSTRACT**

Burkitt's lymphoma (BL) is a high-grade, aggressive form of lymphoma that accounts for 8-10% of all paediatric tumors, with abdominal involvement being particularly common. While BL may involve various abdominal regions, the ileum and caecum are the most frequently affected, with primary mesenteric involvement being rare in children. Recent studies have elucidated genetic and molecular underpinnings of different lymphoma subtypes, including the role of chromosomal translocations and genetic aberrations, which provide insights into the pathogenesis of these malignancies and their treatment approaches.

***Keywords:*** *Burkitt's Lymphoma, paediatric tumors, Lymphoma, Translocations.*

## 1. INTRODUCTION

This report highlights a case of abdominal mesenteric BL in a 3-year-old child, presenting with chronic abdominal pain, vomiting, weight loss, abdominal distension, and irritability. BL is a mature B-cell lymphoma, often involving genetic translocations such as t(8:14) that lead to MYC gene dysregulation. The biology and treatment approaches for BL are closely aligned with those of other paediatric mature B-cell lymphomas, such as diffuse large B-cell lymphoma (DLBCL), although BL is associated with a high mitotic index and rapid disease progression.

## 2. CASE-DESCRIPTION

A 3-year-old male presented with a history of constipation on and off, persistent abdominal pain, distension, irritability, and weight loss over the past one month.There was no history of fever, bleeding Per Rectum, vomiting, diarrhea, abdominal tenderness. There was no significant antenatal, postnatal, developmental, social, past, family history was present. Patient was immunized for age (BCG scar was present).

On clinical examination, the patientwas conscious, oriented, Vitals were stable, afebrile, no dysmorphic feature were seen present. Anthropometry was normal for weight for age, height for age, weight for height, Severe Pallor was present, bilateral multiple cervical and inguinal lymph nodes were palpable each measuring approximately 0.5 x 0.5 cm.Abdominal examination revealed distension with a large tender, non-fluctuant, firm, fixed mass with smooth surface extending from the left lumbar region to the periumbilical region and upto right iliac fossa. Additionally, the spleen was palpable approximately 4 cm below the left costal margin. Other systems were normal.

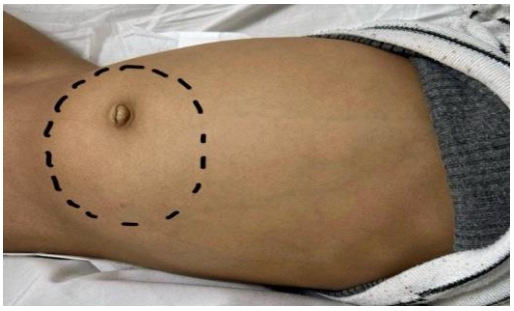
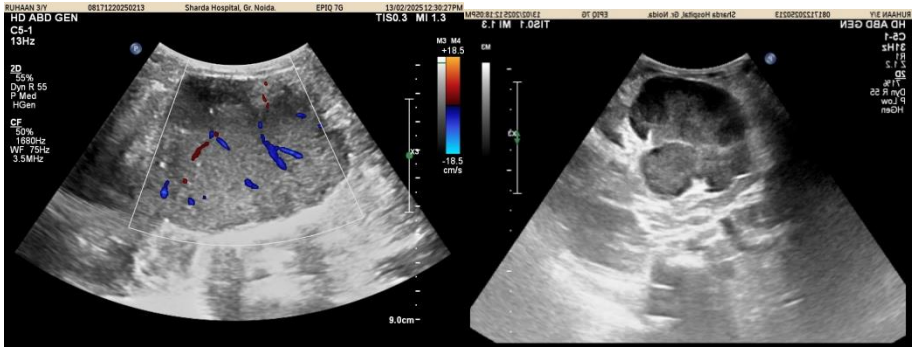


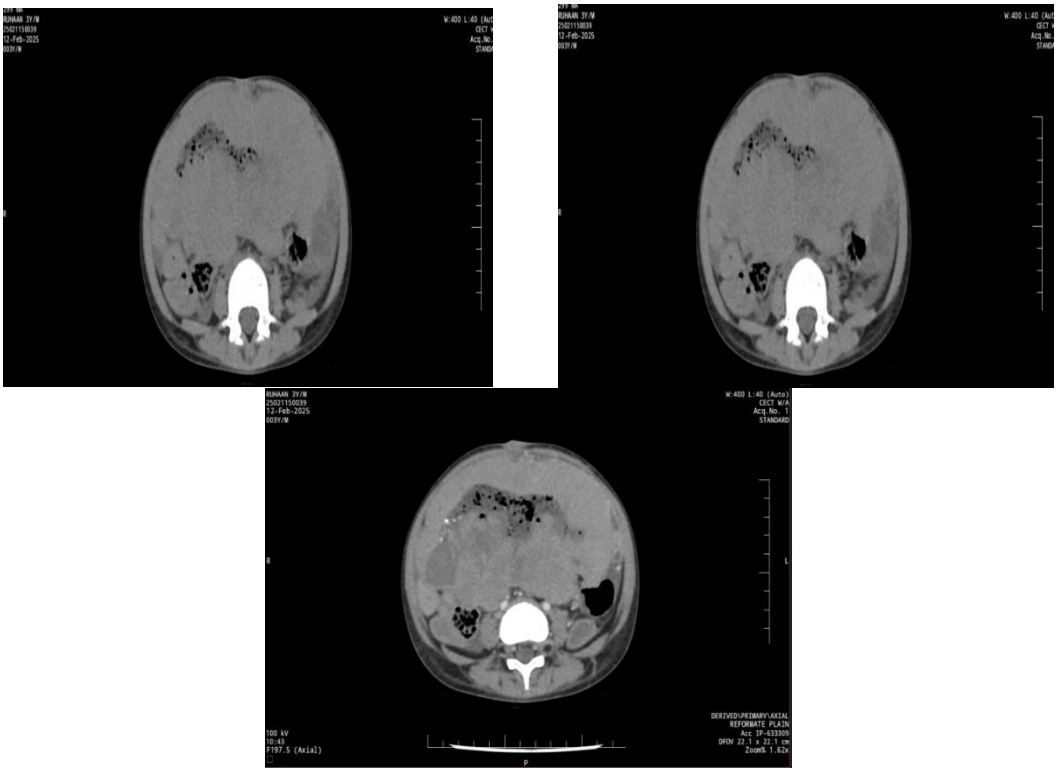
Image showing a large mass extending from the left lumbar region to the periumbilical area and upto right iliac fossa.

Imaging studies included an **ultrasound of the whole abdomen**, which revealed hepatomegaly (~12 cm) and large lobulated homogenous predominately hypoechoic mass lesion is seen in lower part of abdominal cavity. On color Doppler flow imaging it showed significant vascularity.

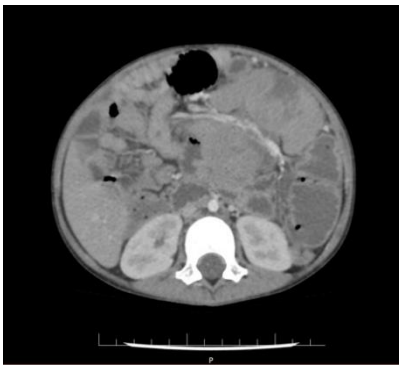



There is echogenic mesentery seen traversing through the lesion with mesenteric vessels within it. Multiple conglomerated lymph nodes were seen in the mesentery of the abdominal cavity.

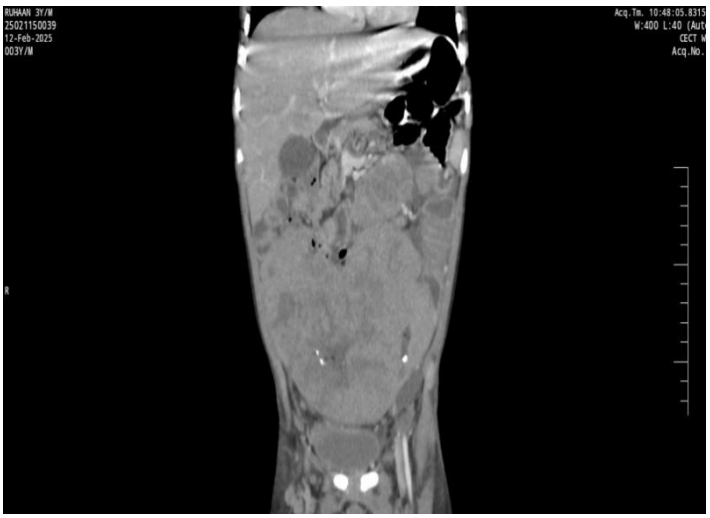
An ill-defined mass of size approximately 4 x 11 cm arising from the splenic flexure, extending to the right paraumbilical region, and crossing the midline. This lesion caused compression of adjacent bowel loops, resulting in proximal small bowel dilation (~4.6 cm), suggestive of lymphoma.



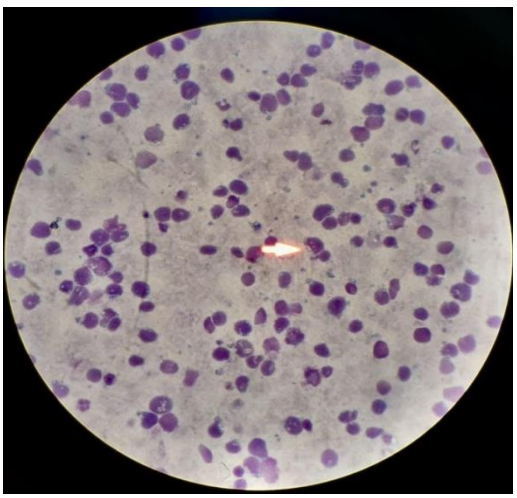
CECT whole abdomen showing a large mesenteric mass in a paediatric patient.

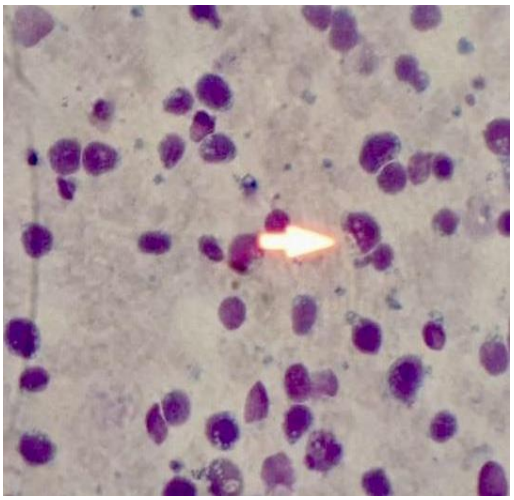


Mesenteric Vessels are seen traversing through the mass lesion giving sandwich sign. However, there is no infiltration of the vessels. Multiple enlarged mesenteric lymph nodes are seen.



A **contrast-enhanced CT (CECT) of the whole abdomen** demonstrated hepatosplenomegaly and significant confluent masses on either side of the mesenteric vessels, with the mass measuring approximately 7.2 cm x 12.9 cm x 16.08 cm. Some necrotic mesenteric lymph nodes were also identified, the largest measuring 1.34 x 1.05 cm, both kidneys were separate which were suggestive of abdominal mesenteric lymphoma. Staging was also done which was Stage II-III of Non-Hodgkin's Lymphoma according to Lugano Classification.





The mass lesion is causing displacement of the transverse colon superiorly and rest of the small bowel loops posteriorly. There is no abnormal dilatation of the bowel loops.

FNAC of abdominal mesenteric lymph node showing highly cellular revealing diffuse sheets of medium sized lymphoid cells which are monomorphic. These cells have round nuclei and dense blue cytoplasm with prominent cytoplasmic vacuolation. Occasional scattered tangible body macrophages are also noted. Most likely Burkitt's Lymphoma.

Fine needle aspiration (FNAC) of the abdominal mesenteric lymph node revealed smears from the abdominal mass are highly cellular revealing diffuse discohesive sheets of monomorphic small round cells. These cells have high N:C ratio with round nuclei, dense bluish highly vacuolated cytoplasm. Occasionally scattered tangible body macrophages are also noted.

A diagnosis of non-Hodgkin lymphoma, most likely Burkitt's lymphoma, based on histopathological features. Despite its rarity in the paediatric population, the tumor exhibited characteristic features of aggressive malignancy, including a high mitotic index and the "starry sky" appearance on histopathology due to reactive macrophages engulfing debris from rapidly dividing tumor cells.

## 3. DISCUSSION

Burkitt's lymphoma (BL) is a mature B-cell lymphoma and is characterized by the presence of chromosomal translocations, such as the t(8;14) translocation involving the MYC gene. This genetic alteration leads to MYC activation, which drives the rapid proliferation of tumor cells. BL shares many features with diffuse large B-cell lymphoma (DLBCL), including the expression of CD20, which makes it responsive to rituximab-based therapies. However, BL has a unique, highly aggressive nature, often with rapid dissemination through the bloodstream.

In this case, the identification of the mesenteric mass through imaging techniques, combined with the FNAC diagnosis of BL, demonstrates the importance of early and accurate diagnosis in paediatric lymphoma cases. The characteristic "starry sky" appearance on histology, along with genetic findings such as MYC translocations, will further support the diagnosis of Burkitt's lymphoma in this patient.

Paediatric Burkitt's lymphoma is a rapidly progressing systemic disease that often disseminates through the bloodstream. Early diagnosis and aggressive treatment are crucial for favourable outcomes, as long-term survival has been reported in cases managed promptly with contemporary chemotherapy protocols. With treatment at specialized centres, paediatric Burkitt's lymphoma can achieve cure rates of 90% or greater. Abdominopelvic imaging plays a critical role in detecting the characteristic mesenteric masses associated with BL, guiding diagnosis and management.

## 4. CONCLUSION

This case underscores the importance of considering Burkitt's lymphoma in the differential diagnosis of abdominal masses in paediatric patients, especially when presenting with nonspecific symptoms such as abdominal pain and weight loss. Recent advances in genomic profiling of NHL subtypes, including Burkitt's lymphoma, offer insights into the pathogenesis and potential targeted therapies for these malignancies. Early recognition, appropriate imaging, and aggressive treatment are key to improving survival outcomes in paediatric Burkitt's lymphoma.

## REFERENCES

[1] Nelson Textbook of Pediatrics, 22nd ed.

[2] Canadian Cancer Society. Treatments for childhood Burkitt lymphoma [Internet]. Available from: [ https://cancer.ca/en/cancer-information/cancer-types/non-hodgkin-lymphoma-childhood/treatment/burkitt-lymphoma ]

[3] National Cancer Institute. Childhood Non-Hodgkin Lymphoma Treatment (PDQ®)–Health Professional Version. Available from: [ https://www.cancer.gov/types/lymphoma/hp/child-nhl-treatment-pdq ]

[4] Dana-Farber Cancer Institute. Childhood Burkitt Lymphoma. Available from: [ https://www.dana-farber.org/cancer-care/types/childhood-burkitt-lymphoma ]