

Axillary Lymphatic Malformation in a Child: A Case Managed with Surgical Excision

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ABSTRACT

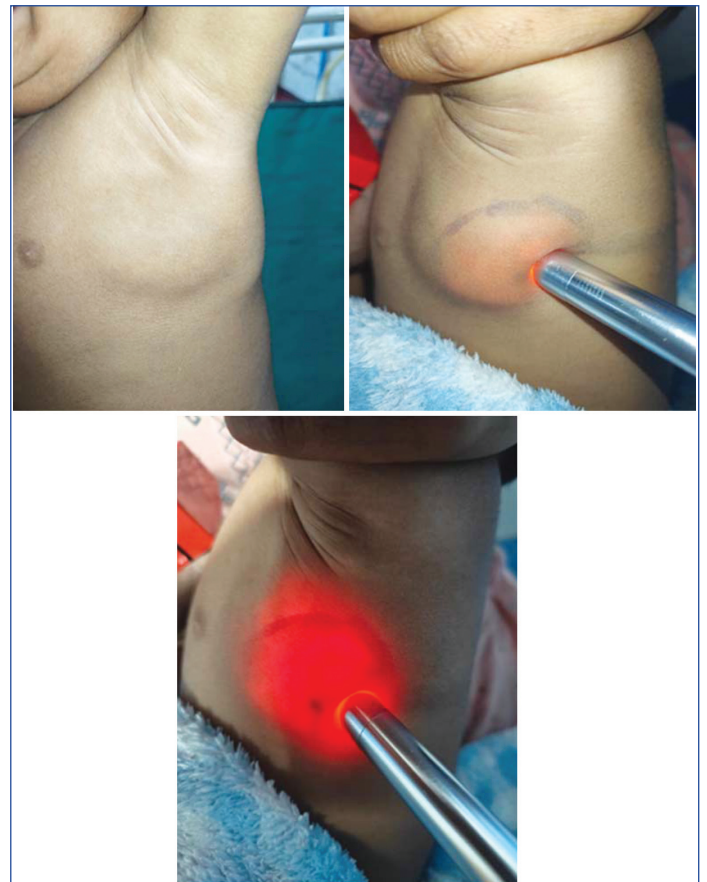
Lymphatic malformations are rare, benign, congenital, slow-flow vascular anomalies that result from abnormal embryological development of the lymphatic system. The cervicofacial region is where they tend to appear frequently, while involvement of the axillary region is relatively uncommon. The present case report is of a one-year-seven-month-old male child who presented with a gradually progressive, painless swelling in the left axilla for a duration of seven months. There was no associated history of trauma, redness, fever, discharge, or restriction of upper limb movements. On clinical examination, the swelling was soft, non tender, non pulsatile, without signs of inflammation. Magnetic Resonance Imaging (MRI) demonstrated a well-defined T2/STIR hyperintense subcutaneous cystic lesion involving the left axillary and adjacent chest wall region, suggestive of a slow-flow lymphatic malformation. Intraoperatively, the lesion was well circumscribed and carefully dissected from the surrounding soft-tissues, allowing complete excision without injury to adjacent structures. Histopathology confirmed lymphatic malformation. After surgery, the patient recovered without any complications. There was no recurrence or functional limitation after two weeks of follow-up; long-term follow-up was advised. This case highlights that axillary lymphatic malformation, although rare, must be considered in the differential diagnosis of paediatric axillary swellings. Careful radiological evaluation and complete surgical excision in selected well-localised lesions can result in excellent clinical outcomes with minimal risk of recurrence.

Keywords: Excision, Paediatrics, Slow-flow lymphatic malformation, Subcutaneous cystic lesion, Upper limb

CASE REPORT

A one-year-seven-month-old male child presented with gradually progressive swelling in the left axilla for seven months. There has been no history of pain, fever, redness, local warmth, discharge, trauma, or preceding infection. There was no restriction of movements of the left upper limb. There were no compressive symptoms or constitutional symptoms. There was no significant antenatal history suggestive of prenatal detection of the lesion. The child was born via normal vaginal delivery, and developmental history was age-appropriate. There was no similar family history and no known congenital anomalies in the child. Past medical and past surgical history were not significant. During examination, a soft, compressible, non tender, multiloculated swelling measuring about 3x2 cm was observed in the mid-axillary region with positive transillumination [Table/Fig-1]. No regional lymphadenopathy was present.

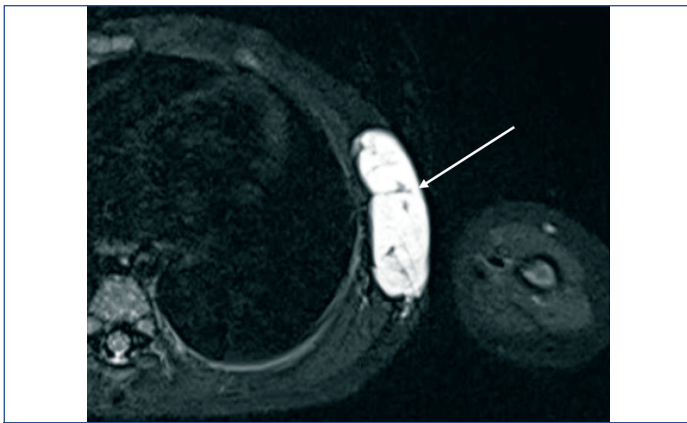
The clinical differential diagnoses considered included lymphatic malformation/lymphatic cyst, veno-lymphatic malformation. Ultrasonography revealed a well-defined multiloculated cystic lesion with internal septations. MRI showed a T2/STIR hyperintense cystic lesion in the subcutaneous plane, suggestive of a slow-flow vascular malformation, likely lymphatic/veno-lymphatic [Table/Fig-2]. In view of the well-localised nature of the lesion and its superficial accessibility, the child was planned for complete surgical excision under general anaesthesia. Through a skin incision over the swelling, careful dissection was performed along tissue planes, and the lesion was excised in toto while preserving surrounding structures [Table/Fig-3a-e]. A drain was placed. The operative duration was one hour, and the estimated blood loss was approximately 30 mL (insignificant). Recovery following surgery went well. The clinical diagnosis of lymphatic malformation is supported by the histopathological examination, which revealed cystically dilated lymphatics with lymphoid aggregates in the wall [Table/Fig-4]. No recurrence was observed during a two week follow-up [Table/Fig-5]; long-term follow-up was advised.



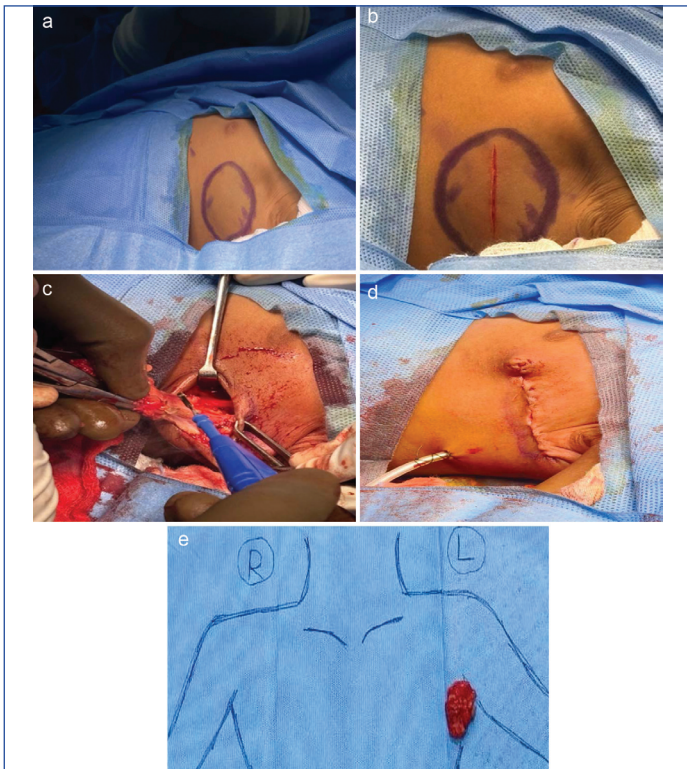
[Table/Fig-1]: Clinical photograph of the left axillary swelling showing a well-defined soft cystic lesion with positive transillumination, suggestive of a superficial cystic malformation.

DISCUSSION

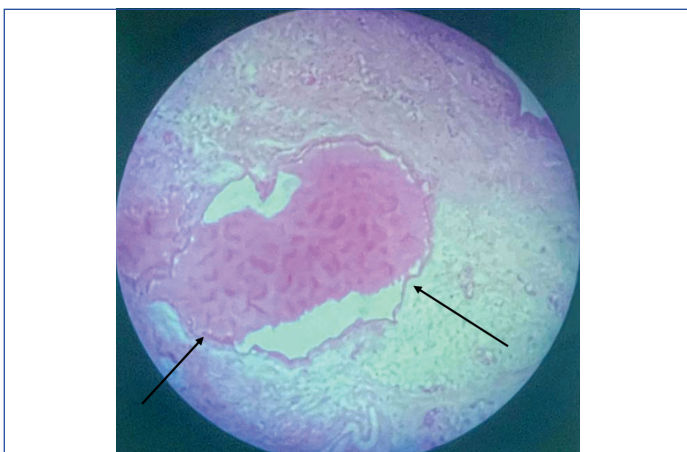
Lymphatic malformations are congenital, benign, slow-flow vascular anomalies resulting from aberrant lymphatic development, often diagnosed in infancy or early childhood [1]. The incidence of lymphatic malformations is estimated to 1.2-2.8 lymphatic malformations per



[Table/Fig-2]: Axial MRI image showing a multiloculated cystic lesion with multiple thin internal septations likely lymphatic/veno lymphatic malformation.



[Table/Fig-3]: a) Preoperative skin marking over the left axillary swelling before planned surgical excision; b) Intraoperative image showing incision placement over the marked swelling; c) Intraoperative dissection of the cystic lesion from surrounding soft-tissue planes; d) Immediate postoperative image after complete excision and wound closure with drain in situ; e) Excised specimen of the left axillary cystic lesion following complete surgical removal.



[Table/Fig-4]: Histopathological section showing cystically dilated lymphatic channels lined by flattened endothelial cells, consistent with lymphatic malformation (H&E, 10X).

1000 births and 2.8 patients per 100,000 hospital admissions [2]. They are traditionally categorised into macrocystic, microcystic, and mixed types based on cyst size [3].



[Table/Fig-5]: Follow-up clinical photographs on postoperative day 2, and day 14 showing satisfactory wound healing without evidence of early recurrence.

Imaging plays a pivotal role in diagnosis and surgical planning. MRI is particularly useful for defining the extent and type of the lesion, its relation to adjacent structures, and for preoperative planning [4]. The differential diagnosis of paediatric axillary cystic swelling includes lymphatic malformation, epidermoid cyst, haemangioma or veno-lymphatic malformation, epidermoid cyst, branchial anomaly in unusual location, lipoma, and lymphadenopathy [1]. The combination of soft, compressible swelling, positive transillumination, and characteristic imaging findings favoured a lymphatic malformation in index patient.

Surgical resection and sclerotherapy have become the standard of care as they yield good outcomes with low complication rates [5]. Sclerotherapy is the current first-line treatment for most lesions, while surgical excision is preferred for specific indications (small, superficial, well-circumscribed lesions). Sclerotherapy is currently the gold standard for lymphatic malformations treatment when invasive management is indicated, and a wide range of sclerosing agents are used in daily practice, including bleomycin, lauromacrogol, doxycycline, ethanol, and picibanil [6].

Although macrocystic lymphatic malformations may respond to sclerotherapy, primary surgical excision was preferred in index patient because the lesion was small, superficial, well circumscribed, and readily accessible in the axilla, making complete excision feasible with low operative morbidity and permitting definitive histopathological diagnosis. In addition, primary excision avoided the need for repeated sclerotherapy sessions and uncertainty regarding the completeness of the response. Recurrence rates after treatment vary by lesion type and management modality.

Alqahtani A et al., reported recurrence rates varying by treatment modality in a 25-year retrospective series. Recurrence was highest following aspiration and sclerotherapy (100% each). Incomplete excision and laser therapy were associated with a 40% recurrence rate. In contrast, macroscopically complete excision had a significantly lower recurrence rate of 17%. These findings highlight the importance of complete surgical excision in minimising recurrence [7].

Drobot A et al., described a case of a 14-year-old girl presenting with a rapidly progressive axillary swelling. Ultrasound and MRI revealed a macrocystic, multilocular lymphatic malformation. Preoperative and intraoperative indocyanine green lymphography facilitated precise delineation of lymphatic channels, enabling complete surgical excision without injury to adjacent structures or collateral lymphatics [8]. The findings in index patient are consistent with these reports, emphasising that early diagnosis, thorough imaging, and complete surgical excision can yield excellent outcomes with minimal morbidity.

CONCLUSION(S)

Axillary lymphatic malformation is an uncommon entity that may present as a painless cystic axillary swelling in infancy. In the index case, imaging enabled accurate diagnosis and surgical planning. Complete excision led to histopathological confirmation and an uneventful recovery without recurrence. Early diagnosis and definitive surgical management ensure excellent outcomes in well-circumscribed lesions.

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