Annals of Pediatric Surgery

CASE REPORTS Open Access

Giant axillary lipoblastoma in an African child: a case report

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Abstract

Background: Lipoblastoma is a rare benign neoplasm of the adipose tissue occurring most commonly in infants and young children. This tumor can present as a localized, well-circumscribed lesion (lipoblastoma) or as a multicentric lesion (lipoblastomatosis).

Case presentation: This is a case report of lipoblastoma in a 19-month-old male with 9 months history of rapidly progressing axillary mass. Examination revealed a well-circumscribed right axillary mass measuring 25 cm × 20 cm with normal overlying skin and prominent, visibly distended superficial veins. He had surgical excision of the mass. Histologic examination revealed lipoblastoma. There has been no recurrence in the last 21 months of follow-up.

Conclusion: The report is presented for its rarity and also for its potential to pose diagnostic difficulty to surgeons. Surgical excision offers the best chance of cure. Long-term follow-up is also important to detect recurrence.

Keywords: Lipoblastoma, Axillary mass, Surgical excision

Background

Lipoblastomas are rare benign tumors of soft tissue commonly found in infants and children. The first description of this entity is credited to Jaffe in 1926 [1]. Eighty to ninety percent of cases occur in children below the age of 3 and about 40% in those less than 1 year [2]. The tumors are usually located in the extremities and can exhibit a potential for rapid growth [3]. We present a concise report of our surgical management of axillary lipoblastoma in a child.

Case presentation

A 19-month-old male presented with 9 months history of right axillary mass. The mass was initially the size of the tip of mother's thumb but progressively increased in size, with very rapid growth in the preceding 2 months to about the size of patient's head. The mass never regressed, and there was no similar lesion in other parts of the body. There was no history of skin changes, ulceration, or discharge from the swelling.

Examination revealed an 11-kg infant who was not pale, afebrile, anicteric, and well-hydrated with no significant peripheral lymphadenopathy. Pulse rate was 98 beats per minute, and respiratory rate was 22 cycles per minute. There was a huge, well-circumscribed right axillary mass extending to the right lateral chest wall from the 2nd to 8th intercostal space with normal overlying skin and prominent, visibly distended superficial veins. The mass was not tender, measuring 25cm × 20 cm in widest dimensions with mixed consistency, restricted mobility but unattached to overlying skin (Fig. 1). There was no regional lymphadenopathy. The chest was clinically clear, and abdomen and extremities were normal.

Ultrasonography suggested a mass arising from the pectoralis major with distorted bipartite muscular echo texture. There was no significant vascular flow on Doppler interrogation. Chest radiograph showed a huge soft tissue opacity arising from axilla .No calcification was seen, and the rib cage and lung fields were normal.

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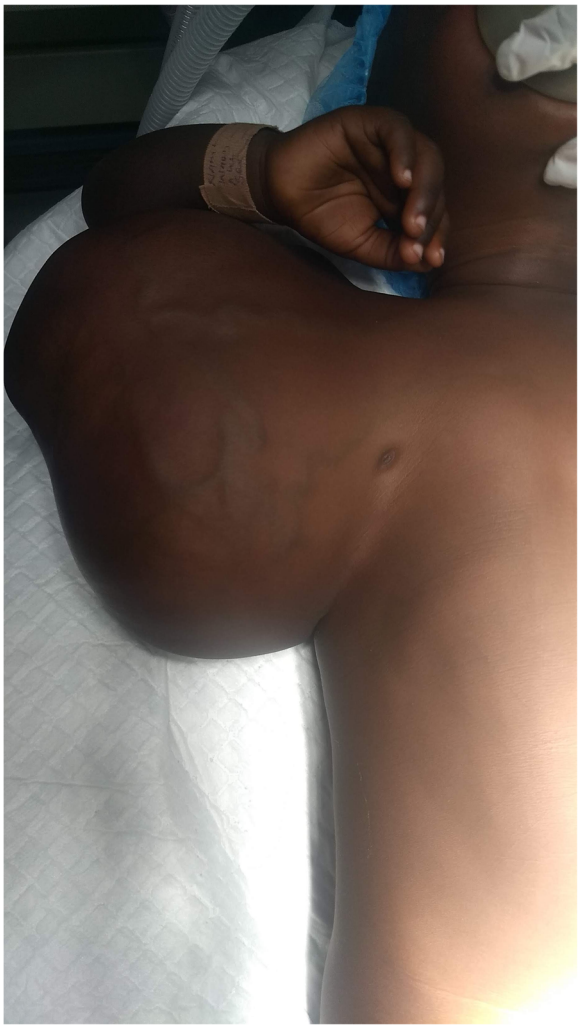

Fig. 1 Clinical picture of the right axillary mass

Computed tomography of the chest revealed a huge, multi-septated, hypo-dense mass with a density of fat in the axilla, abutting on the right lateral chest wall. No focal lung lesion was seen, and the adjacent ribs and humerus were normal.

He was scheduled for excision biopsy, and intra-operative findings revealed an encapsulated, globular-shaped right axillary mass abutting on the right axillary vessels, extending from roof of the axilla to the 8th intercostal space in the mid-clavicular line (Fig. 2). The adjacent pectoralis muscles and latissimus dorsi were stretched and thinned out due to prolonged compression by the mass, which weighed 3.5 kg. Complete surgical excision was carried out and specimen sent for histopathology review. Histopathology examination showed an encapsulated tumor comprising lobules of mature adipocytes delineated by fibrovascular septae with foci showing plexiform blood vessels, consistent with lipoblastoma (Fig. 3).

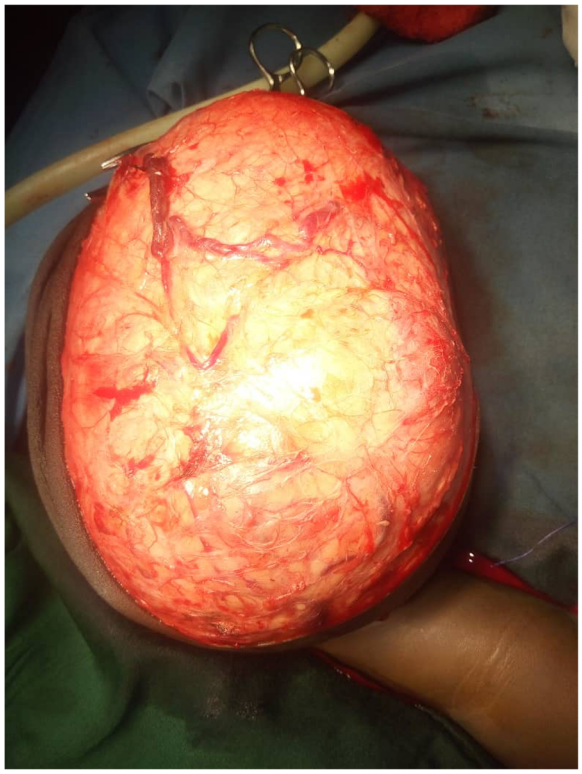

Fig. 2 Intra-operative picture during excision of axillary lipoblastoma

He recovered well post operatively and was discharged home on post op day 5. He is currently doing well, and there is no evidence of recurrence in the last 21 months of follow-up.

Discussion

Lipoblastomas are rare benign tumors arising from embryonic white fat. It usually presents clinically as a

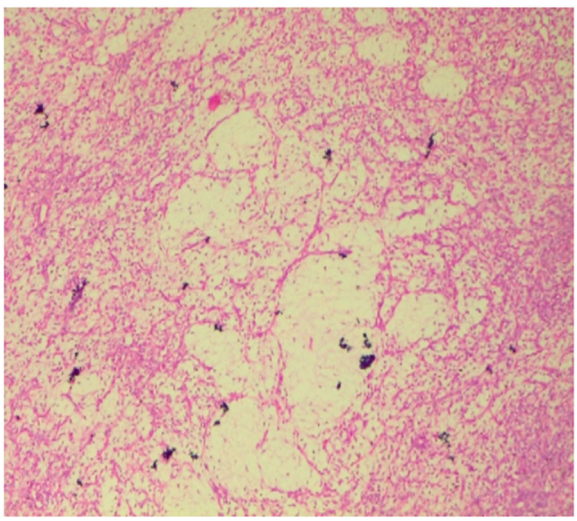

Fig. 3 Photomicrograph of excised specimen showing mature adipocytes with plexiform blood vessels

painless mass in the extremities in 46–76% of cases and less commonly in the trunk, head and neck, chest, retroperitoneum, and peritoneal cavity [3, 4]. Other rare sites described in literature include the inguino-labial region [5] and scrotum [4]. These tumors can grow rapidly as was the case in our patient, so surgeons need to be aware of this characteristic in order to avoid performing mutilating surgical procedures [3].

Two forms of lipoblastomas have been described: lipoblastoma, the more common localized, circumscribed form that develops in superficial tissues and clinically resembles a lipoma, and lipoblastomatosis, the diffuse, infiltrative form that invades subcutaneous tissue and adjacent muscle and has a higher recurrence rate [2, 6].

Lipoblastomas and lipoblastomatosis must be distinguished from the myxoid form of liposarcoma, a malignant differential diagnosis. Liposarcoma is rare in patients under 10 years and is typified by the lack of lobulation, variable growth pattern, and increased nuclear atypia [7].

It is established that complete surgical excision of lipoblastoma offers the best chance of preventing recurrence of the tumor. In spite of this, the rate of recurrence is 14–25% in patients who underwent total excision. Hence, regular patient follow-up is very essential [7–10].

Conclusion

Lipoblastomas are rare, rapidly growing benign tumors of embryonic fat in children. It should be considered as part of the differential diagnosis of a fast growing soft tissue tumor in an otherwise healthy child. Complete surgical excision is advocated to limit the possibility of recurrence. Importantly, long-term follow-up of patients is required.

Acknowledgements

Not applicable

Authors' contributions

AOO and AMA conceptualized and designed the study. AOO, AMA, and CUR contributed to the case summarization and literature search and initial draft. NR and AMCD performed the histological examination of the tumor and made contributions to the manuscript drafting and revision. All authors read and approved the final manuscript.

Funding

There was no funding for this study.

Availability of data and materials

Not applicable

Declarations

Ethics approval and consent to participate

This research was done in accordance with the ethical standards of the Federal Medical Centre, Yola, and National Health Research Committee and with the 1964 Helsinki declaration and its later amendments. Informed consent was obtained from the parents of the patient for this study.

Consent for publication

Written consent for publication was obtained from the parents of the patient.

Competing interests

The authors declare that they have no competing interests.

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Received: 9 July 2020 Accepted: 15 March 2021
Published online: 09 June 2021

References

1. Jaffe RH. Recurrent lipomatous tumor of the groin: liposarcoma and lipoma pseudomixomatodes. Arch Pathol. 1926;1:381–7.
2. Kok KY, Telisinghe PU. Lipoblastoma: clinical features, treatment, and outcome. World J Surg. 2010;34(7):1517–22. https://doi.org/10.1007/s00268-010-0466-8.
3. Stringel G, Barry S, Mancer K, Ein SH. Lipoblastoma in infants and children. J Pediatr Surg. 1982;17(3):277–80. https://doi.org/10.1016/S0022-3468(82)80012-2.
4. Nakib G. Intrascrotal lipoblastoma in ten years old: case report and review of literature. Rare Tumors. 2013;5:e11.
5. Armenise T, Gentile O, Orofino A, Leggio S, Lanzillotto MP, Zullino F, et al. Lipoblastoma in infant: our experience. J Ped Surg Case Rep. 2015;3(2):63–4. https://doi.org/10.1016/j.epsc.2014.12.001.
6. Fallon SC, Brandt ML, Rodriguez JR, Vasudevan SA, Lopez ME, Hicks MJ, et al. Cytogenetic analysis in the diagnosis and management of lipoblastomas: result from a single institution. J Surg Res. 2013;184(1):341–6. https://doi.org/10.1016/j.jss.2013.05.010.
7. Mentzel T, Calonje E, Fletcher CD. Lipoblastoma and lipoblastomatosis: a clinico-pathological study of14 cases. Histopathology. 1993;23(6):527–33. https://doi.org/10.1111/j.1365-2559.1993.tb01238.x.
8. Dilley AV, Patdl DL, Hicks MJ, Brandt ML. Lipoblastoma: pathophysiology and surgical management. J Pediatr Surg. 2001;36(1):229–31. https://doi.org/10.1053/jpsu.2001.20060.
9. Mognato G, Ceccheto G, Carli M, Talenti E, D'Amore ESG, Pederzini F, et al. Is surgical treatment of lipoblastoma always necessary? J Pediatr Surg. 2000;35(10):1511–3. https://doi.org/10.1053/jpsu.2000.16428.
10. Weiss SW, Goldblum JR. Lipoblastoma. In: Enzinger and Weiss's soft tissue tumors. St. Louis: Mosby; 1995. p. 384–405.

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