

CASE REPORT

PEER REVIEWED | OPEN ACCESS

Unusual cervicothoracic presentation of lipoblastoma in a 12-month infant

El Mansoury Fatima Zahrae, Halfi Mohamed Ismail,
Lrhorfi Najlae, Allali Nazik, Chat Latifa

ABSTRACT

Introduction: Lipoblastomas (LBs) are infrequent tumors that typically manifest at the expense of embryonic adipocytes in infants younger than three years with a male predominance. Usually LBs are benign in nature, slow in growth with tendency to be localized in the extremities but it can also have an aggressively infiltrative tendency.

Case Report: We report a 1-year-old male child presented with painless cervicothoracic tumefaction investigated essentially with magnetic resonance imaging (MRI) which was characteristic of LBs, and further proved histologically. The child was managed surgically and the tumor was resected completely.

Conclusion: Lipoblastomas are extremely rare tumors that should figure in the differential diagnosis dealing with children presenting painless soft tissue mass that is growing. Magnetic resonance imaging findings are characteristics for the diagnosis which are confirmed by histopathological examination.

Keywords: Axilla, Cervicothoracic, Lipoblastoma, Magnetic resonance imaging

How to cite this article

Zahrae EMF, Ismail HM, Najlae L, Nazik A, Latifa C. Unusual cervicothoracic presentation of lipoblastoma in a 12-month infant. Int J Case Rep Images 2022;13:101291Z01EZ2022.

Article ID: 101291Z01EZ2022

doi: 10.5348/101291Z01EZ2022CR

INTRODUCTION

Lipoblastoma (LB) is a highly rare tumor of soft tissue, only around 200 cases have been recorded so far worldwide [1]. It is a lipid-based tumor and can present itself in two diametrically opposed benign forms: circumscribed or infiltrative which termed lipoblastomatosis [2]. Despite its benign biological behavior, its slow enlargement may cause compression to adjacent organs and structures resulting of several symptoms depending on the location [3]. Here, we present a case of an infant presenting with painless swelling of the neck as well as an abnormal growth within the axillary and thoracic area.

CASE REPORT

A 1-year-old male child presented with painless tumefaction extending all the way from the first false rib to the base of the neck via the arm pit. The mass has progressively increased volume in the prior weeks. On clinical examination, diffuse cervicothoracic swelling was noted on the right side, which was compressible. No bruit or pulsations noted. No signs of inflammation were seen in the overlying skin. No sensitive nor motor deficit in the right arm was noted.

Magnetic resonance imaging (MRI) with gadolinium injection revealed a well-defined mass centered on the

El Mansoury Fatima Zahrae¹, Halfi Mohamed Ismail², Lrhorfi Najlae¹, Allali Nazik³, Chat Latifa⁴

Affiliations: ¹MD, Resident in Radiology, Department of Radiology, Children's Hospital, UHC Ibn Sina, Rabat, Morocco; ²MD, Intern in Radiology, Department of Radiology, Children's Hospital, UHC Ibn Sina, Rabat, Morocco; ³Professor, Radiology, Department of Radiology, Children's Hospital, UHC Ibn Sina, Rabat, Morocco; ⁴Professor, Chief of Department of Radiology, Department of Radiology, Children's Hospital, UHC Ibn Sina, Rabat, Morocco.

Corresponding Author: El Mansoury Fatima Zahrae, Groupe Al Ahd, Hay Nahda 1, N° 1061, Rabat, Morocco; Email: fatidoly@gmail.com

Received: 18 November 2021

Accepted: 08 February 2022

Published: 02 March 2022

right lateral thoracic wall insinuating into the right axilla and extending to the deep inter muscular compartments of the base of the neck, measuring $5.7 \times 7.5 \times 12.9$ cm. The lesion had predominant fat attenuation, with multiple fibrous septations and soft tissue nodules. On T1W1 sequence, these nodules were characterized by a mild contrast enhancement after gadolinium administration (Figure 1).

Topographically, the mass started from C6 vertebral level repelling the sternocleidomastoid muscle exteriorly and the cervical vascular package interiorly. The extended mass arrived into the right axillar area where the nervous brachial plexus was seen to drape around the mass (Figure 2A and B). Up until the level of the 8th rib, we still noticed the mass effect on the chest wall in the form of

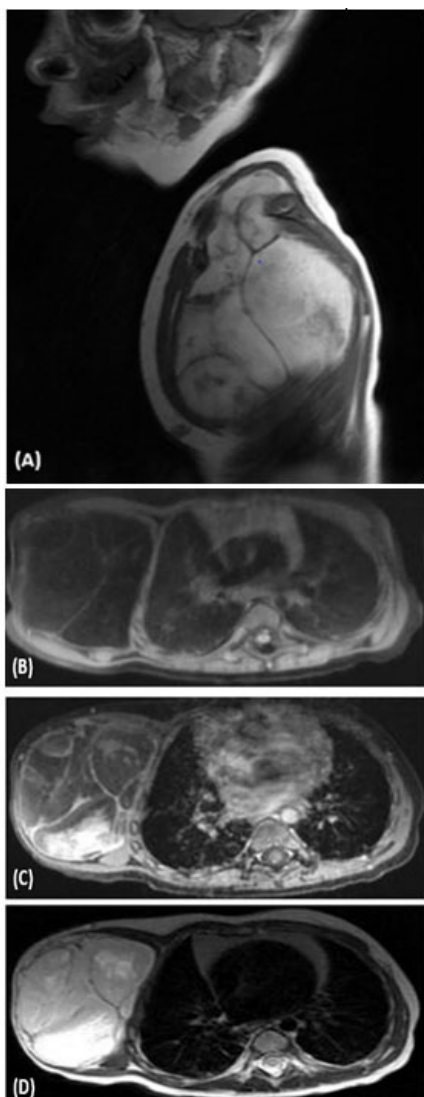


Figure 1: Lipoblastoma of the right lateral thoracic wall with cervical extension. (A) Sagittal T1WI shows a well-defined capsulated mass, predominantly lipomatous with multiple septations. (B) Axial fat-suppressed T1WI confirms a fat containing component superiorly. (C) Axial fat-suppressed gadolinium-enhanced T1WI shows enhancing mural nodules which are characteristic of LB. (D) Axial T2WI shows mural nodules having a hyperintense signal on T2 sequence.

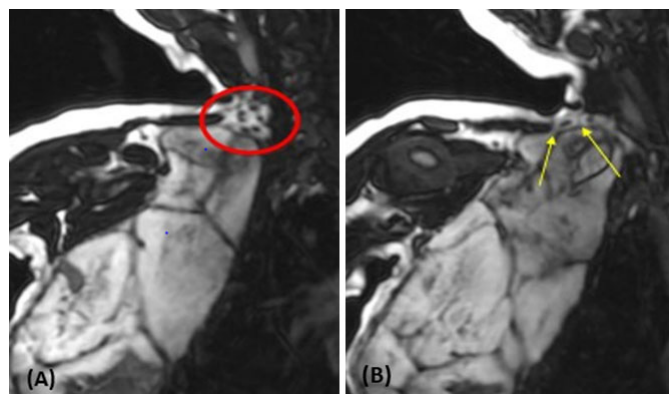


Figure 2: (A, B) Coronal fast imaging employing steady-state acquisition (FIESTA) or steady-state gradient echo sequence showing tumor's rapport with the brachial plexus (red ring), the tumor pushes the nerve trunks without signs of infiltration (arrows).

inward bowing of the ribs but no intrathoracic extension. Imaging findings were characteristic of lipoblastoma, which was further proved histologically. The extension assessment did not find any metastatic location.

The child was managed surgically and during the surgical exploration, the tumor was completely encapsulated, it pushed back the vascular and nervous structures without any sign of invasion, it was resected completely.

DISCUSSION

Ultrasound (US) is the first-line method of investigation, particularly in children. Characterized by a well-defined hyperechoic mass, with adipose component, accompanied with internal septations [1].

The Gold standard imaging method preferably chosen to diagnosis LB is the MRI. It usually present itself as a solid encapsulated mass with heterogeneous hyperintense signal in T1-weighted (Figure 1A and B) and T2-weighted sequences due to its components or septations which consist mainly in fat and fibro-myxoid tissues has been noticed (Figure 1C and D) [4, 5]. Usually the fat signal is less intense in T1-weighted sequences (Figure 1B). Naturally, the fat suppression sequence is particularly useful to confirm the presence of lipomatous features [6].

The main mimickers of the LB tumors are hibernoma, rare benign fatty tumor that arises from the fetal brown fat, and myxoid liposarcoma [4], which is rare in children younger than 10 years and has a well-described tendency to be aggressive; therefore it is important to exclude this diagnosis [6].

Recent statics that the preferred emerging sites of LB tumors are extremities by 27% followed by neck by 19%, then the gluteal region by 18%, then chest and the mesentery by 14%, lastly axilla 4% [5, 7]. In our case, the topography is centered around the axilla area which

is the rarest location and the mass expanded into the cervical area going up and the chest going down [1, 7]. The whereabouts of such LBs can come with clinical and management difficulties (Figure 2A and B).

Clinically, these types of LBs can have significant growth, resulting in symptoms caused by mass effect [3] that include respiratory compromise (dyspnea and tracheal deviation) as of neurovascular encasement in the neck and superior mediastinum where tumor surrounded major vessels and nerves (Figure 2A and B). A few cases of such neurovascular encasement have been reported in which LB surrounded but did not invade vessels wall [1, 7].

The intricacy and the intimate anatomical report of such tumors can be problematic at surgery because of the absence of discrete lesion features to discern margins intraoperatively [8]. Magnetic resonance imaging is uniquely suited, with its superior soft-tissue contrast, for delineating total lesion extent prior to resection and is essential in the evaluation of any deep LB [2, 6].

Although there is a high recurrence rate with incomplete resections, it depends on the extent of resection. If the tumor is completely resected, the prognosis is excellent, for instance in our case, it can be delicate to discern the surrounding of the tumor and how far the extension goes in some location such as the brachial plexus area (Figure 2). Chemotherapy is unnecessary in these patients [1, 7]. Post-surgery, a minimum of five years is essential for following-up in order to identify any recurrences [1]. Also, It has been described at least once in literature a case of spontaneous dissolvment of an LB in follow-up MRI, so a wait-and-see approach should be kept in mind in some cases [6].

CONCLUSION

In conclusion, cervicothoracic and axillar LB are extremely rare tumors that should figure in the differential diagnosis dealing with children with a painless head or neck soft tissue mass that is growing. Understanding their appearances is crucial in order to differentiate it from main mimickers, in particular liposarcoma. The definitive diagnosis is confirmed by histopathological examination, and surgery is usually the first-line treatment thus the pivotal role of accurately describing the topographic radiological extensions of the tumor according to nearby anatomical structures.

REFERENCES

1. Séguier-Lipszyc E, Baazov A, Fichman S, Ash S, Freud E. Current management of lipoblastoma. *Eur J Pediatr* 2018;177(2):237–41.
2. Capasso R, Rossi E, Castelli L, et al. Mesenteric lipoblastoma and cervical lipoblastomatosis: Ultrasound, elastosonography, and computed

tomography findings in two children. *Case Rep Radiol* 2014;2014:478252.

3. Aggarwal A, Goyal A, Kandasamy D. Lipoblastoma – A rare benign immature adipocytic neoplasm. *Indian J Musculoskelet Radiol* 2019;1(2):124–6.
4. Degan AJ, Jelinek JS, Murphey MD. Lipoblastoma: Computed tomographic and magnetic resonance imaging features correlate with tumor behavior and pathology. *Pediatr Radiol* 2021;51(4):614–21.
5. Lomoro P, Simonetti I, Nanni AL, et al. Imaging of head and neck lipoblastoma: Case report and systematic review. *J Ultrasound* 2021;24(3):231–9.
6. Navarro OM. Pearls and pitfalls in the imaging of soft-tissue masses in children. *Semin Ultrasound CT MR* 2020;41(5):498–512.
7. Vo NH, Mashiana MK, Vo CC, Ward K, Nguyen J. Atypical presentation of lipoblastoma of a 9-month-old. *Ear Nose Throat J* 2019;98(5):261–2.
8. Chen CW, Chang WC, Lee HS, Ko KH, Chang CC, Huang GS. MRI features of lipoblastoma: Differentiating from other palpable lipomatous tumor in pediatric patients. *Clin Imaging* 2010;34(6):453–7.

Author Contributions

El Mansoury Fatima Zahrae - Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Halfi Mohamed Ismail – Design of the work, Acquisition of data, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Lrhorfi Najlae – Analysis of data, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Allali Nazik - Analysis of data, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Chat Latifa – Conception of the work, Design of the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity

of any part of the work are appropriately investigated and resolved

Guarantor of Submission

The corresponding author is the guarantor of submission.

Source of Support

None.

Consent Statement

Written informed consent was obtained from the patient for publication of this article.

Conflict of Interest

Authors declare no conflict of interest.

Data Availability

All relevant data are within the paper and its Supporting Information files.

Copyright

© 2022 El Mansoury Fatima Zahrae et al. This article is distributed under the terms of Creative Commons Attribution License which permits unrestricted use, distribution and reproduction in any medium provided the original author(s) and original publisher are properly credited. Please see the copyright policy on the journal website for more information.

Access full text article on
other devices



Access PDF of article on
other devices





INTERNATIONAL JOURNAL OF
CASE REPORTS AND IMAGES



VIDEO JOURNAL OF
CLINICAL RESEARCH



VIDEO JOURNAL OF
BIOMEDICAL SCIENCE



INTERNATIONAL JOURNAL OF
HEPATOBIILIARY AND
PANCREATIC DISEASES



INTERNATIONAL JOURNAL OF
BLOOD TRANSFUSION AND
IMMUNOHEMATOLOGY



EDORIUM JOURNAL OF
OPHTHALMOLOGY



Submit your manuscripts at
www.edoriumjournals.com



EDORIUM JOURNAL OF
MEDICINE



EDORIUM JOURNAL OF
CARDIOTHORACIC AND
VASCULAR SURGERY



JOURNAL OF CASE REPORTS
AND IMAGES IN ORTHOPEDICS
AND RHEUMATOLOGY



EDORIUM JOURNAL OF
PSYCHOLOGY



EDORIUM JOURNAL OF
CELL BIOLOGY



JOURNAL OF CASE REPORTS AND IMAGES IN
DENTISTRY



EDORIUM JOURNAL OF
CANCER



EDORIUM JOURNAL OF
PSYCHIATRY



JOURNAL OF CASE REPORTS AND
IMAGES IN INFECTIOUS DISEASES



EDORIUM JOURNAL OF
ANATOMY AND EMBRYOLOGY



EDORIUM JOURNAL OF
SURGERY



JOURNAL OF CASE REPORTS
AND IMAGES IN PATHOLOGY



EDORIUM JOURNAL OF
ANESTHESIA