

Case Report

Lipoblastoma – A Rare Benign Immature Adipocytic Neoplasm

Ankita Aggarwal, Ankur Goyal, Devasenathipathy Kandasamy

Department of Radiodiagnosis, All India Institute of Medical Sciences, New Delhi, India.



*Corresponding author:

Ankur Goyal,
Department of Radiodiagnosis,
All Institute of Medical
Sciences (A.I.I.M.S.), Ansari
Nagar, New Delhi, 110029,
India.

ankurgoyalaiims@gmail.com

Received : 04 September 19

Accepted : 08 November 19

Published : 30 December 19

DOI

10.25259/IJMSR_30_2019

Quick Response Code:



ABSTRACT

Lipoblastoma is an uncommon fat-containing tumor of childhood having predilection for infants. Although it is benign in nature; even then, it can be locally aggressive. Clinical examination generally reveals painless, progressively increasing compressible swelling. Computed tomography or magnetic resonance imaging along with specific clinical history clinches the diagnosis. Imaging is of paramount importance as it helps in differentiating it from its close mimickers, which include lipoma, liposarcoma, rhabdomyosarcoma and teratoma. Early diagnosis with complete surgical resection is the management of choice.

Keywords: Lipoblastoma, Aggressive, Infants, Fat containing

INTRODUCTION

Lipoblastoma is an extremely uncommon mesenchymal soft tissue tumor affecting infants and toddlers. It is a fat-containing tumor and is usually well encapsulated. When it is diffusely infiltrative, it is termed as lipoblastomatosis. This tumor is benign in nature, however, is locally aggressive and can present with post-surgical recurrence. Symptoms may vary depending on the site which is affected. It is usually a painless, progressively increasing swelling, and predominantly affecting the extremities. Here, we present a case of an infant presenting with painless fat-attenuation swelling of the neck with soft tissue septations within.

CASE REPORT

A 1-year-old male child presented with painless swelling on the left side of neck for 3 months, progressively increasing in size.

On clinical examination, a diffuse swelling was noted on the left side of neck, which was compressible. No bruit or pulsations noted. No signs of inflammation were seen in the overlying skin.

Contrast-enhanced computed tomography revealed a well-defined mass lesion in the posterior triangle of the left side of neck insinuating into the left axilla, measuring 10 cm×8 cm×6 cm [Figures 1-4]. The lesion had predominant fat attenuation, along with enhancing septations and soft tissue. No calcification or fluid attenuation was seen. Cranially, the mass started from C2 vertebral level and extended into the left axilla until the level of sixth rib. There was mass effect on the chest wall in the form of inward bowing of the ribs but no intrathoracic extension. The mass was



Figure 1: Contrast-enhanced computed tomography axial section of neck depicts a well-defined fat-attenuation mass (asterisk) in the posterior triangle on the left side of neck having multiple thin enhancing septations (arrow) within. Arrow shows thin enhancing septa, asterisk shows fat component.



Figure 2: Contrast-enhanced computed tomography axial section at the level of thoracic inlet depicts extension of mass (asterisk) into the axilla causing anterior displacement of the clavicle (arrow).

causing anteromedial displacement of internal jugular vein and common carotid artery. The left subclavian artery is seen to drape around the mass. However, fat planes with the vessels and adjacent structures are well maintained. Imaging findings were characteristic of lipoblastoma. The child was managed surgically and the tumor was resected completely.

DISCUSSION

Lipoblastoma is a rare mesenchymal soft tissue tumor of early childhood,^[1] (<3 years) of age with predilection for male infants.^[2] The tumor is benign in nature, however, may be locally invasive or progressive. Lipoblastoma term is used when it is well-defined and encapsulated, as in our case whereas when diffusely infiltrative, it is called lipoblastomatosis. The former is seen in subcutaneous region whereas the latter affects the underlying muscles as well. Lipoblastoma is commoner than lipoblastomatosis, occurring most commonly in the extremities (70% cases) followed by chest and head and neck region.^[2]



Figure 3: Contrast-enhanced computed tomography axial section of thorax at the level of root of great vessels depicts mass effect of the mass over the rib cage (arrow) displacing it medially. Subclavian vessels (arrowhead) seen to drape the mass anteriorly.



Figure 4: Contrast-enhanced computed tomography coronal section of neck and thorax depicts a fat attenuation mass (asterisks) in the posterior triangle of neck extending into the axilla on the left side causing mass effect over the left side of thoracic cavity (arrow).

Since it is a tumor of embryonal white fat, histologically cells range in differentiation from prelipoblasts to mature lipocytes interspersed in a myxoid stroma.^[3] These tumors are locally aggressive; however, metastasis is not known to occur.

The classical CT appearance of the tumor is that of a fat attenuation soft tissue mass which can be well encapsulated (as in lipoblastoma) or can be insinuating having ill-defined margins (as in lipoblastomatosis) with presence of multiple thin enhancing septation within. However, the appearance would vary depending upon the relative ratio of adipose tissue and soft tissue elements. No calcification or cystic changes are noted within the mass. Few smaller areas of necrosis, however, may be seen. The imaging appearance of lipoblastoma is indistinguishable from that of liposarcoma; however, liposarcoma is extremely rare in an age group of <10 years; hence, despite large soft tissue component in such a fat-containing mass in this age group is almost always a lipoblastoma.

The main differential diagnosis for this tumor is dermoid (which can be differentiated due to presence of calcification), lipoma (relevant history of stagnant growth of tumor) and liposarcoma (occurs in elderly).

The clinical presentation of progressively increasing soft tissue swelling in extremities or head-neck region in a small child mandates exclusion of rhabdomyosarcoma, which is aptly achieved by CT or magnetic resonance imaging by the demonstration of fat.

CONCLUSION

Take home message from this case report is that a fat-containing mass in early childhood is usually lipoblastoma. While myxoid component is common in lipoblastoma presenting in infancy, adipose component predominates later. CT appearance and histology of lipoblastoma overlap with myxoid liposarcoma; however, latter is rare in childhood.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Murphey MD, Carroll JF, Flemming DJ, Pope TL, Gannon FH, Kransdorf MJ, *et al.* From the archives of the AFIP: Benign musculoskeletal lipomatous lesions. *Radiographics* 2004; 24:1433-66.
2. Gaerte SC, Meyer CA, Winer-Muram HT, Tarver RD, Conces DJ Jr. Fat-containing lesions of the chest. *Radiographics* 2002;22 Spec No:S61-78.
3. Seidel FG, Magill HL, Burton EM, Boulden TF, Brooks MT, Hanna SL, *et al.* Cases of the day. Pediatric. Lipoblastoma. *Radiographics* 1990;10:728-31.

How to cite this article: Aggarwal A, Goyal A, Kandasamy D. Lipoblastoma – A Rare Benign Immature Adipocytic Neoplasm. *Indian J Musculoskelet Radiol* 2019;1(2):124-126.