

Tachypnea without dyspnea in child with giant anterior mediastinal lipoblastoma

Sanjukta Dey¹, Subhankar Sarkar¹, Soumalya Kundu²

From ¹Consultant, ²Resident, Department of Pediatrics, Peerless Hospital and B.K. Roy Research Centre, Kolkata, West Bengal, India

ABSTRACT

Lipoblastoma is a rare, benign, rapidly growing tumor. These lesions are usually asymptomatic or symptomatic due to the compression of surrounding structures. The majority of them were diagnosed in early childhood. We report the case of a 2 years old boy with giant anterior mediastinal lipoblastoma who was apparently asymptomatic except for persistent fast breathing. The mass was diagnosed by computed tomography-guided needle biopsy and confirmed after removal by thoracotomy.

Key words: Fast breathing, Lipoblastoma, Mediastinal mass

Mediastinum is the common site of chest mass in children, the majority of which are malignant in nature [1]. The causes of the mediastinal masses in children can be benign and malignant neoplasms, congenital anomalies, infectious, and pseudomasses (like thymus) [2]. Mediastinal masses are classified as anterior, middle, and posterior mediastinal mass based on anatomical position and imaging [3]. The most common anterior mediastinum masses are lymphoma, thymoma, teratoma, angioma, lipoma, and thyroid tumors [4].

Here, we are presenting the case of a 2-year-old child with anterior mediastinal lipoblastoma. The rationale for reporting the case is that despite fast breathing, the child was unnoticed for a long time. Hence, greater emphasis should be done on the clinical examination of such a child which is essential to reach the diagnosis.

CASE REPORT

A 2-year male child presented to the outpatient department clinic for a routine check-up with an unusual complaint related to fast breathing but that never seems to bother his parents. The child was otherwise active, afebrile, playful, thriving well, and achieved all developmental milestones as per his age. There were no significant medical and antenatal histories.

His height was 90 cm (50–97th percentile) and weight 12.5 kg (50–97th percentile). On clinical examination, he was tachypnoeic (52 breaths/min) and having a mild subcostal recession. Reduced breath sound was noticed over the left mid and lower zone with tracheal shifting on the right side but there was no wheeze or

stridor. His blood pressure was 100/66 mm Hg, pulse rate was 100/min with good volume, and SpO₂ was 99% in room air.

Complete blood counts, hemoglobin, blood gas analysis, and electrolytes were within normal limits. Chest X-ray demonstrated a large well-defined mediastinal opacity with preservation of the cardiac silhouette with slight mediastinal shifting to the right side and the left dome of the diaphragm was not visible clearly (Fig. 1). Chest computed tomography (CT) scan showed a large (approximately 12.4 cm × 7.6 cm × 10.5 cm in size) smoothly outlined lobulated margin hypodense with an average density of HU –150–100 having multiple septations with peripheral based solid hypodense nodular deposits in the anterior mediastinum extending into the left supraclavicular fossa and also along the inlet of thorax compressing the adjacent left lung field. A significant shift of mediastinum toward the right encasing the left brachiocephalic and left common carotid artery compressing over the left hila with focal segmental collapse was also noted involving the medial basal segment of the left lower lobe. Sonography-guided mediastinal biopsy (under sedation) was done which showed multiple lobules of fat with focal myxoid background with arborizing vascular vessel tissue, some strands of fibrous tissue were seen in the lobule of fat and the myxoid pattern was seen in some foci (Fig. 2b).

The tumor was completely resected via right thoracotomy. Intraoperatively, there was a large well-defined yellowish solid fatty tumor compressing the adjacent left lung field with pushing the right lower lobe of the lung and the heart anteriorly. The resected tumor showed multiple fragments of tan white to tan yellow fragments. The cut surface appeared yellowish greasy with focal myxoid areas (Fig. 2a). On his last follow-up after 1 month, the child was healthy and asymptomatic.

Correspondence to: Dr. Subhankar Sarkar, Department of Pediatrics, Peerless Hospital, 360, Pancha Sayar Road, Sahid Smirity Colony, Pancha Sayar, Kolkata - 700 094, West Bengal, India. E-mail: sarkar.subhankar20@gmail.com

© 2022 Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC-ND 4.0).


Access this article online	
Received - 16 February 2022 Initial Review - 28 February 2022 Accepted - 28 March 2022	Quick Response code 
DOI: 10.32677/ijcr.v8i4.3333	



Figure 1: Chest X-ray demonstrated a large well-defined mediastinal opacity

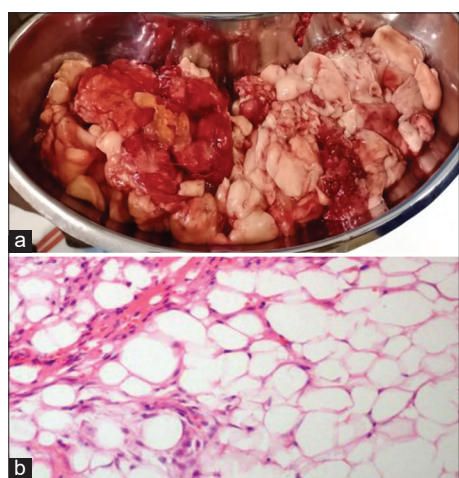


Figure 2: (a) Macroscopic and (b) microscopic section of mass

DISCUSSION

Lipoblastoma was first described by Jaffe in 1926 as a lipomatous lesion that contained immature fat cells [5]. Lipoblastoma originates from embryonic adipose cells (lipoblasts) and is usually localized, lobulated, or encapsulated tumor; however, it could be present as diffuse, infiltrative, non-capsulated, and deeply embedded with a tendency to extend into the adjacent structures known as lipoblastomatosis [6].

The common location of lipoblastoma is superficial soft tissues of the extremities and head-neck region but they are rarely located in the omentum, inguinal, perineum, retro-peritoneum, heart, lungs, and mediastinum [6]. The majority of affected children are under the age of 5 years. The presence of a painless mass is the most common presenting symptom. It has the capability of rapid growth and leads to mass effects, may initially present with compressive symptoms such as stridor, shortness of breath, cough or wheeze, swelling/painless mass, and neurologic symptoms. Giant mediastinal lipomas often originate from the thymus and usually will have thymic tissue within the tumor, recognized by Hassall's corpuscles [7].

Radiographically, lipoblastoma may present as a non-specific soft-tissue density mass. CT scan allows identification of the fatty component within the mass. CT scan is also able to detect intratumor calcifications which are helpful in diagnosing a teratoma. Magnetic resonance imaging is a useful tool for diagnosis and shows the best soft-tissue contrast. Sonography or CT-guided biopsy may help to establish the diagnosis [8].

Histopathologically, it is comprised clusters of mature adipocytes rounded by immature lipoblasts, myxoid, and stellate mesenchymal cells are the hallmark of its histological appearance. Surgery is the treatment of choice for this entity. Complete surgical resection of lipoblastomas yields an excellent prognosis as no malignant degeneration has been documented [9]. Long-term postoperative follow-up has been recommended for surveillance of tumor recurrence which has been reported in 14–25% of cases, usually due to incomplete resection or diffuse disease [6].

CONCLUSION

We describe the case of anterior mediastinum lipoblastoma in a happy player who was unnoticed by the clinician for a long time even in the presence of symptoms such as fast breathing. Although lipoblastoma is a benign tumor, it has the potential for rapid growth and local invasion that mandate its complete removal for the best outcome.

REFERENCES

1. Ranganath SH, Lee EY, Restrepo R, Eisenberg RL. Mediastinal masses in children. *AJR Am J Roentgenol* 2012;198:W197-216.
2. Gun F, Erginel B, Ünüvar A, Kebudi R, Salman T, Celik A. Mediastinal masses in children: Experience with 120 cases. *Pediatr Hematol Oncol* 2012;29:141-7.
3. Carter BW, Benveniste MF, Madan R, Godoy MC, de Groot PM, Truong MT, *et al.* ITMIG classification of mediastinal compartments and multidisciplinary approach to mediastinal masses. *Radiographics* 2017;37:413-36.
4. Grosfeld JL, Skinner MA, Rescorla FJ, West KW, Scherer LR 3rd. Mediastinal tumors in children: Experience with 196 cases. *Ann Surg Oncol* 1994;1:121-7.
5. Jaffe RH. Recurrent lipomatous tumours of the groin. *Arch Pathol Lab Med* 1926;1:381-7.
6. Hicks J, Dilley A, Patel D, Barrish J, Zhu SH, Brandt M. Lipoblastoma and lipoblastomatosis in infancy and childhood: Histopathologic, ultrastructural, and cytogenetic features. *Ultrastruct Pathol* 2001;25:321-33.
7. Alar T, Ozçelik C, Kilnç N. Giant mediastinal mass: Thymolipoma. *South Med J* 2011;104:353-4.
8. Moholkar S, Sebire NJ, Roebuck DJ. Radiological-pathological correlation in lipoblastoma and lipoblastomatosis. *Pediatr Radiol* 2006;36:851-6.
9. McVay MR, Keller JE, Wagner CW, Jackson RJ, Smith SD. Surgical management of lipoblastoma. *J Pediatr Surg* 2006;41:1067-71.

Funding: None; Conflicts of Interest: None Stated.

How to cite this article: Dey S, Sarkar S, Kundu S. Tachypnea without dyspnea in child with giant anterior mediastinal lipoblastoma. *Indian J Case Reports*. 2022;8(4):91-92.