Erciyes Med J 2012; 34(4): 194-6 • DOI: 10.5152/etd.2012.42

Suprasternal Dermoid Cyst; A Case Report

Suprasternal Dermoid Kist; Olgu Sunumu

CASE REPORT
OLGU SUNUMU

Ümit Erkan Vurdem[1], Ahmet Savranlar[1], Özkan Köse[2], Yücel Tekin[3]

ABSTRACT
ÖZET

Dermoid cysts are formed as a result of sequestration on the embryonic closure line of the skin. Dermoid cysts should be considered in the differential diagnosis of congenital midline cystic mass lesions. In this paper a thirteen year old boy with a congenital mass lesion at the suprasternal notch localization is presented. The mass was soft and nontender on palpation. The cyst was excised under general anesthesia after ultrasonography, computed tomography and magnetic resonance imaging. Histopathological examination diagnosed it as a dermoid cyst. No recurrence was observed on ultrasonography. This case is presented because reports of this localization is rare in the literature

Key words: Congenital, dermoid cysts, magnetic resonance imaging, ultrasonography

Dermoid kistler ciltte embriyolojik kapanma hattında sekestrasyon sonucu oluşan kistlerdir. Konjenital orta hat kistik kitle lezyonlarının ayırıcı tanısında düşünülmelidir. Bu yazıda suprasternal çentik lokalizasyonunda konjenital kitle lezyonu tespit edilen on üç yaşındaki erkek olgu sunuldu. Kitle palpasyonla yumuşaktı ve hassas değildi. Ultrasonografi, bilgisayarlı tomografi ve manyetik rezonans görüntüleme sonrası kist genel anestezi altında çıkarıldı. Histopatolojik incelemede dermoid kist tanısı konuldu. Olgunun ultrasonografi kontrolünde nüks izlenmedi. Bu olgu literatürde bu lokalizasyonda yerleşimi nadir olduğu için sunulmuştur.

Anahtar kelimeler: Dermoid kist, konjenital, manyetik rezonans görüntüleme, ultrasonografi

Introduction

Dermoid cysts are circumscribed, encapsulated lesions. Dermoid cysts result from sequestration of ectodermal tissue (1). Although there is no consensus as to the etiology of dermoid cysts, the most prevalent theory is that dermoids arise from totipotent cells derived from the germ layers, ectoderm and mesoderm which have become isolated anatomically (2).

Dermoid cysts of the trunk are rare lesions, but a midline location is characteristic for these congenital masses. A dermoid cyst should be high on the list of differential diagnoses when a unilocular midline cyst in a neonate is present (3).

Cervical congenital cystic masses constitute an uncommon group of lesions usually diagnosed in infancy and childhood. The floor of the mouth is the most common location in the neck region (1). Approximately 7% of dermoids are found in the head and neck (2). This case is presented because dermoid cysts of this localization are rare in literature reports.

Case Report

A thirteen-year-old healthy boy was referred to the Radiology Department from the Pediatric Surgery Department for evaluation of a subcutaneous midline suprasternal mass (Figure 1a). His parents reported that the lesion was present at birth, but its dimensions were smaller and there were no episodes of inflammation or infection. Physical examination showed a soft, subcutaneous, skin colored mass. The mass was non-tender on palpation. Transillumination was positive. Ultrasonography (US) revealed a subcutaneous, well-defined cyst with a homogenous content. There were no septations or calcifications and it measured 55x45x30 mm, without extension to adjacent soft tissue structures (Figure 1b). Doppler examination showed lack of blood flow.

Computerized tomography (CT) images revealed a low-attenuated mass at the suprasternal notch (Figure 2a). The density of the internal content measured about -10 Hounsfield Units (H.U.). Magnetic resonance imaging (MRI) confirmed that there was no extension to adjacent soft-tissue structures or periosteum in three planes. MRI showed the cystic nature of the mass. The cyst was hypointense on T1-weighted images (Figure 2b) and hyperintense on T2-weighted images (Figure 2c).

[1]Clinic of Radiology, Kayseri Training and Research Hospital, Kayseri, Turkey

[2]Clinic of Children's Surgery Clinic, Kayseri Training and Research Hospital, Kayseri, Turkey

[3]Clinic of Pathology, Kayseri Training and Research Hospital, Kayseri, Turkey

Available Online Date
Çevrimici Yayın Tarihi
24.10.2012

Submitted/Geliş Tarihi
20.11.2011

Accepted/Kabul Tarihi
22.06.2012

Correspondance/Yazışma
Dr. Ümit Erkan Vurdem
Clinic of Radiology, Kayseri Training and Research Hospital, 38010 Kayseri,Turkey
Phone: +90 352 336 88 84
e-mail: uervurdem@hotmail.com

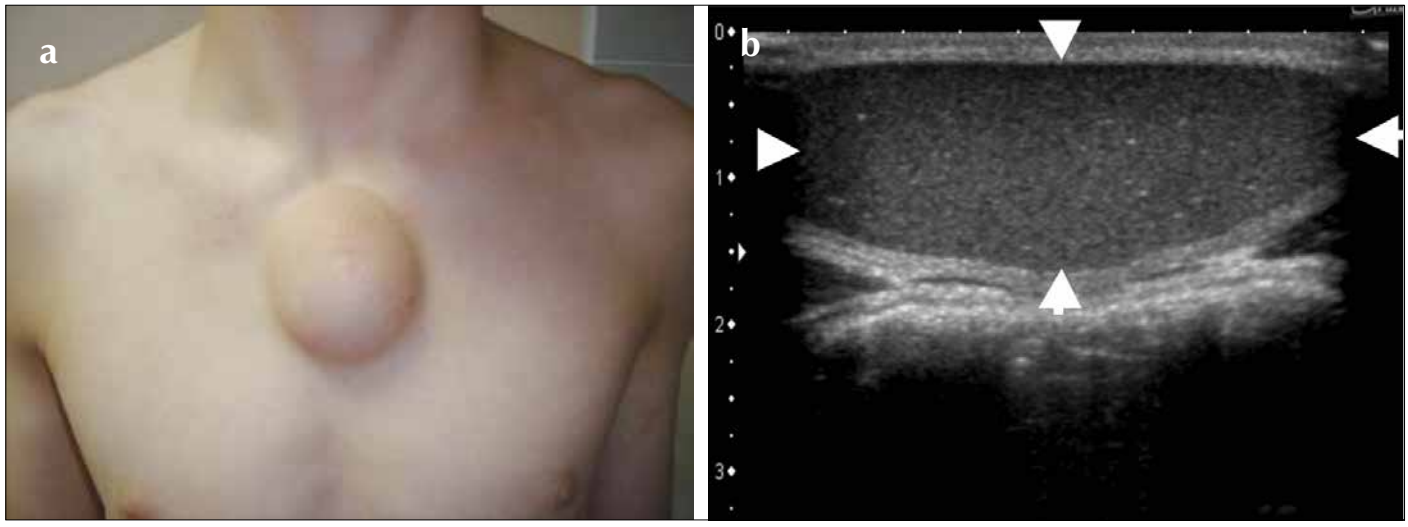

Figure 1. A soft, subcutaneous, skin colored mass located at the suprasternal notch, measuring 30x45x55 mm (a) and its ultrasonographic appearance (b). Ultrasonography revealed a subcutaneous, well-defined cyst with a homogenous content

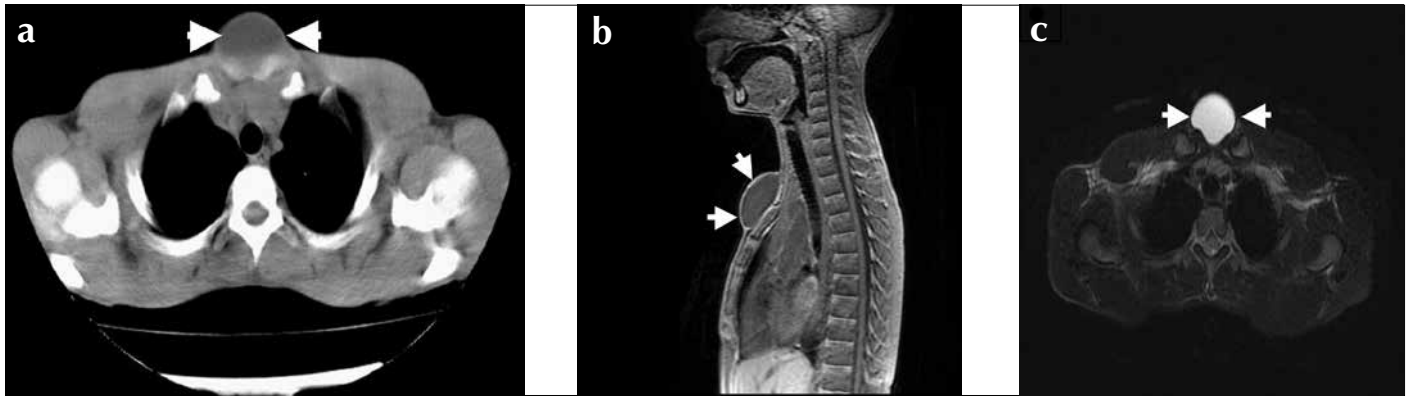

Figure 2. Computerized Tomography (CT) and Magnetic Resonance (MR) Imaging of the mass. a) Low attenuation mass is shown in the suprasternal notch at axial CT scan. b) T1-weighted sagittal MR image shows a hypointense cystic mass at suprasternal notch. c) T2-weighted axial MR image shows a hyperintense cystic mass at suprasternal notch

Under general anesthesia, the intact mass was enucleated. Grossly, the external surface was smooth and translucent (Figure 3a). The mass contained serous fluid and the inner surface was smooth. Histopathologic examination identified a cyst lined by multilayer flat epithelium containing keratinous material in the luminal surface. Beneath the epithelium in the fibrous stroma of the cyst, numerous eccrine glands were seen (Figure 3b).

No recurrence was observed in the follow up ultrasonographies at the 1st, 3rd and 6th months.

Discussion

Dermoid cysts of the anterior chest region are rare (4-7). These should be included in the differential diagnosis of midline suprasternal cysts. This includes thyroglossal duct cyst, epidermoid cyst and thymic cyst. Bronchogenic cysts have been reported at the suprasternal notch, although this is an unusual location (8, 9). In this location, epidermoid cysts are more frequent than dermoid cysts (5). The essential difference between a dermoid cyst and an epidermoid cyst lies in the presence of skin appendages (eg, sebaceous glands, hair follicles) within the wall of the dermoid cyst and the absence of these features in the epidermoid cyst (10).

The radiological diagnosis of dermoid cysts can be readily made on the basis of US, CT or MRI. On CT scans, the central cavity is usually filled with a homogenous, hypo-attenuating fluid material. The material within the cyst usually has attenuation of fat. However, some dermoids will have attenuation similar to water (11).

MRI with its superior soft tissue contrast and multiplanar imaging capacity, has advantages over US and CT. MRI is particularly helpful in diagnosing intracranial or intramedullary dermoid cysts and in assessing the dissemination of fatty masses or droplets. Dermoid cysts have variable signal intensity on T1 weighted images. They may be hyperintense (due to the presence of sebaceous lipid) or isointense relative to muscle on T1-weighted images. They are usually hyperintense on T2-weighted images. MRI is helpful in planning surgical procedures and in assessing therapeutic success (1).

Presurgical imaging of these lesions is important in order to evaluate the extension to periosteum or adjacent structures that may have an impact on surgical removal (4).

According to Koeller et al. (12), Som reported that the most common clinical appearance of a dermoid cyst in the neck is a midline, suprahyoid, slowly growing mass. In the three articles, dermoid cysts in infants were at the same localization as our case (3, 4, 6).

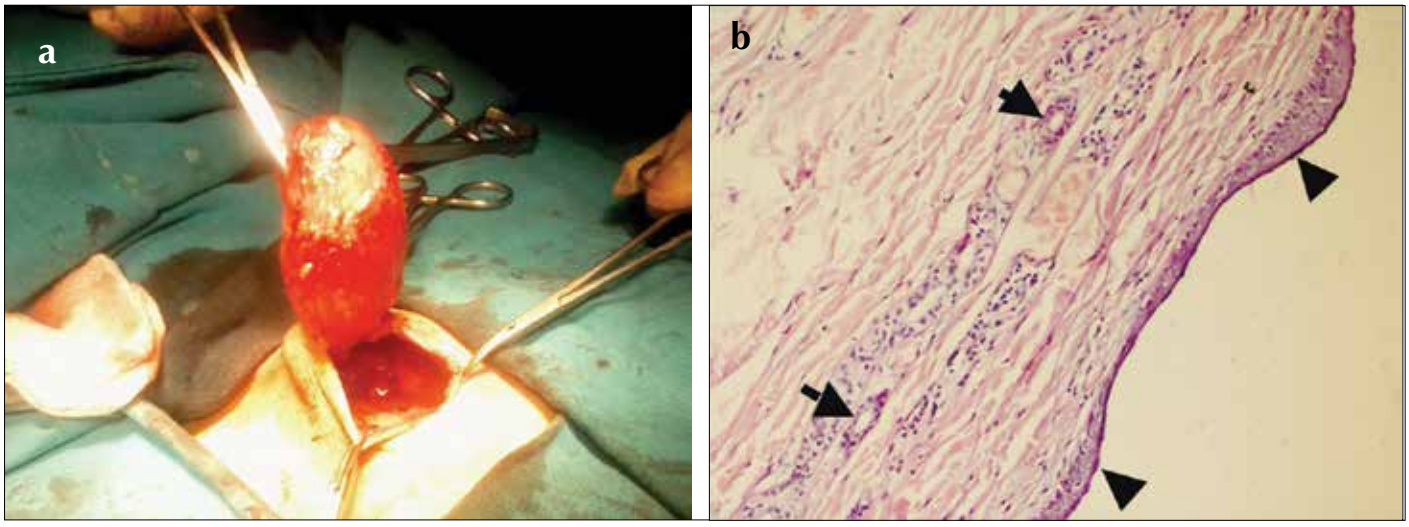

Figure 3. Macroscopic (a) and microscopic (b) view of the mass. Histopathologic examination identified a cyst lined by multilayer flat epithelial cells (arrowheads) beneath fibrous stroma and includes eccrine glandular contents (arrows), H/E stain, x200

Surgery is the only effective treatment for these lesions. The whole lesion should be excised, including its capsule, to avoid recurrence. Prognosis is usually excellent with almost no recurrence being reported (3).

Conclusion

Dermoid cysts should be included in the differential diagnosis of congenital midline cysts. We suggest that even asymptomatic lesions should be excised to prevent infection and confirm diagnosis.

Conflict of interest

No conflicts of interest were declared by the authors.

Authors' contributions: ÜEV and AS made, analyzed and interpreted our patient's imaging examinations. ÖK is the pediatric surgeon who operated on our patient and made major contributions to the manuscript. The manuscript was prepared by ÜEV under the supervision of AS. YT carried out the pathological study. All authors read and approved the final manuscript.

References

1. Koeller KK, Alamo L, Adair CF, Smirniotopoulos JG. Congenital cystic masses of the neck: radiologic-pathologic correlation. Radiographics 1999; 19(1): 121-46.
2. Holt GR, Holt JE, Weaver RG. Dermoids and teratomas of the head and neck. Ear Nose Throat J 1979; 58(12): 520-31.
3. Larralde M, Sanchez-Moya AI, Abad ME, Luna PC, Heinen F, Casas G, et al. Subcutaneous midline suprasternal mass in a ten-month-old girl. Dermatol Online J 2010; 16(6): 6.
4. Vittore CP, Goldberg KN, McClatchey KD, Hotaling AJ. Cystic mass at the suprasternal notch of a newborn: congenital suprasternal dermoid cyst. Pediatr Radiol 1998; 28(12): 984-6. [CrossRef]
5. Yılmaz M, Vayvada H, Demirdöver C. Dermoid cyst at the suprasternal notch. Ann Plast Surg 2000; 45(3): 343. [CrossRef]
6. Savranlar A, Ozer T, Numanoğlu V, Gün BD. Radiologic findings of a congenital suprasternal dermoid cyst. Kulak Burun Bogaz Ihtis Derg 2005; 14(5-6): 131-4.
7. Zhang XY, Ishihara T, Ono T. Dermoid cyst at the suprasternal notch: an adult case. Scand J Plast Reconstr Surg Hand Surg 2005; 39(1): 57-9. [CrossRef]
8. Turkyilmaz Z, Karabulut R, Bayazit YA, Sonmez K, Koybasıoğlu A, Yılmaz M, et al. Congenital neck masses in children and their embryologic and clinical features. B-ENT 2008; 4(1): 7-18.
9. Shah SK, Stayer SE, Hicks MJ, Brandt ML. Suprasternal bronchogenic cyst. J Pediatr Surg 2008; 43(11): 2115-7. [CrossRef]
10. Hunter TB, Paplanus SH, Chernin MM, Coulthard SW. Dermoid cyst of the floor of the mouth: CT appearence. AJR Am J Roentgenol 1983; 141(6): 1239-40.
11. Smirniotopoulos JG, Chiechi MV. Teratomas, dermoids and epidermoids of the head and neck. Radiographics 1995; 15(6): 1437-55.
12. Som P. Cystic lesions of the neck. Postgrad Radiol. 1987; 7(1): 211-36