Suprasternal Dermoid Cyst; A Case Report
Suprasternal Dermoid Kist; Olgu Sunumu

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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

**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).
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, suprhyoid, slowly growing mass. In the three articles, dermoid cysts in infants were at the same localization as our case (3, 4, 6).
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