

A Rare Mass of the Neck: Dermoid Cyst

Nadir Bir Boyun Kitle: Dermoid Kist
Radyoloji

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Özet

Dermoid/epidermoid kistler boyunda nadiren görülürler. Genellikle, yavaş büyüyen kitleler olarak prezante olurlar. Radyolojik metodlar tanıda yardımcı olabilir. Magnetik rezonans görüntüleme (MRG) tekniği ile inceleme, multiplanar görüntüleme imkanı sunması ve lezyon ile komşu yapılar arasındaki ilişkiyi belirleme kabiliyeti sayesinde hem tanıda hem de tedavide özel bir yere sahiptir. 20 yaşında erkek bir hastada görülen nadir bir dermoid kist vakasını sunmaktayız. Hasta, suprasternal yerleşen ağrısız bir kitleden yakınmakta idi. Ultrasonografi (US), bilgisayarlı tomografi (BT) ve MRG tetkiklerinde, bulgular dermoid/epidermoid kisti işaret etmekteydi. Kitle eksize edildi ve histopatolojik olarak radyolojik öntanı doğrulandı. Dermoid kistler her ne kadar boyunda nadir görülseler de, orta hat yerleşimli kistik bir lezyonun ayırıcı tanısında akılda bulundurulmalıdır.

Anahtar kelimeler: *Dermoid, Epidermoid Boyun*

Abstract

Dermoid/epidermoid cysts are rarely seen in the neck region. They generally present as a slowly growing mass located in the midline. Radiologic methods can be helpful in diagnosis. Magnetic resonance imaging (MRI) has special importance both for diagnosis and treatment with its multiplanar imaging capacity and ability to define the relationship between the lesion and adjacent structures. We present a rare case of dermoid cyst in a 20-year-old man. He complained of a painless mass located in the suprasternal region. Ultrasonography (US), computerized tomography (CT) and MRI findings of the lesion suggest dermoid/epidermoid cyst. The mass was resected and histological examination confirmed the diagnosis of dermoid cyst. Even if dermoid cysts are rare neck masses, they should be kept in mind in differential diagnosis of midline cysts.

Keywords: *Dermoid, Epidermoid Neck*

Introduction

Dermoid/epidermoid cysts usually manifests during the second or third decade of life. There is no gender predilection. Only %7 of dermoid cysts presents in the head and neck region.

Dermoid/epidermoid cysts most commonly occur as a slowly growing mass located in the midline, such as suprasternal region. Typically the mass is soft, mobile and unattached to the skin ¹.

We intend to report clinical features and radiologic characteristics of a dermoid cyst in the neck.

Case Report

A 20-year-old male patient presented with an asymptomatic mass located suprasternally in the neck. The mass was soft and mobile, the patient described no pain with palpation or spontaneously. It was present for a long time but it had been growing since the last two or three years. There was no obvious lymphadenopathy and laboratory investigations including hemogram and erythrocyte sedimentation rate were normal.

Ultrasonography (US) of the neck was done 5-10 MHz linear probe. On the ultrasonography there was a solid-appearing mass which was measured 27x27 mm and showed no connection with thyroid gland. Also, it had posterior acoustic enhancement (Figure 1a, 1b).

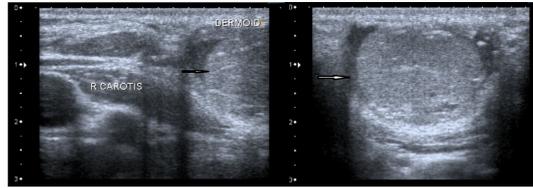


Figure 1A

Ultrasonography of dermoid cyst. Well-defined, pseudosolid appearing mass with posterior acoustic enhancement (black arrows). Power doppler sonogram showing lack of flow signals within the lesion (white arrow).

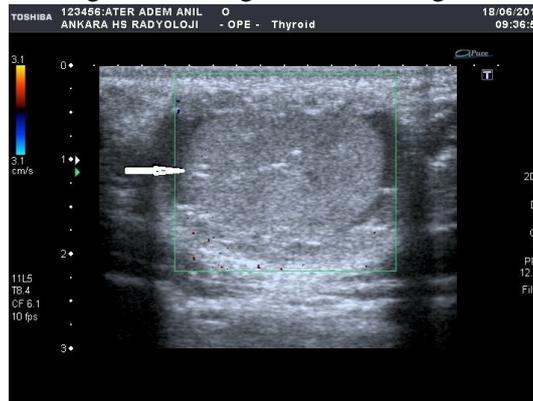


Figure 1B

Ultrasonography of dermoid cyst. Well-defined, pseudosolid appearing mass with posterior acoustic enhancement (black arrows). Power doppler sonogram showing lack of flow signals within the lesion (white arrow).

Computerized tomography (CT) images revealed a well defined, homogeneous mass without any calcifications or septations. The density of the internal content measured 5-10 Hounsfield Unit (HU), which was consistent with cyst. It exhibited peripheral thick contrast enhancement following intravenous non-ionic contrast administration. Extension to the peripheral soft tissue was not present (Figure 2a).

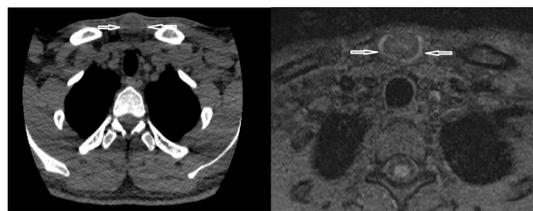


Figure 2A

Postcontrast axial CT ve T1 fat suppressed images, showing peripheral rim like contrast enhancement of lesion (arrows).

Magnetic resonance imaging (MRI) examination defined the lesion as hypointens on T1 weighted images, hyperintense on T2 weighted images. On fat saturated sequences there was no distinctive fat suppression whereas there was diffusion restriction on diffusion-weighted sequences (Figures 2b, and 3).

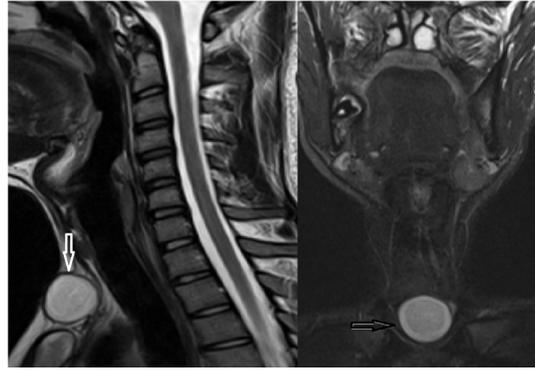


Figure 2B

Midline lesion with hyperintense signal intensity on sagittal T2-weighted (white arrow) and coronal fat suppressed T2 weighted (black arrow) images. There is no distinctive fat suppression on fat suppressed images (black arrow).

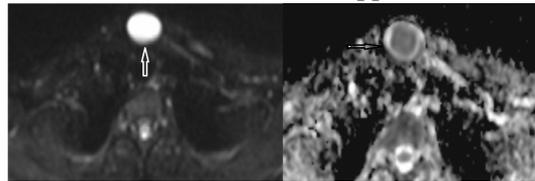


Figure 3

Lesion is hyperintense in DWI (white arrow) and exhibiting markedly restricted diffusion in ADC map (black arrow).

The mass was resected by the general surgery department. Grossly external and internal surfaces were smooth and inner material was serous. Histopathological examination revealed that it was a dermoid cyst. The patient is now in the first year of post-operative period. In the follow-up there have been no complications, relapse or recurrence.

Discussion

Spectrum of teratomas is composed of true dermoid cysts, epidermoid cysts and teratoid cysts. All these types are covered by squamous epithelium. The main difference between a dermoid and epidermoid cyst is the presence of skin appendages, like sebaceous glands and hair follicles. These appendages are present within the wall of the dermoid cyst but absent in epidermoid cysts. Meanwhile a teratoid cyst also contains tissues of other major organ systems (i.e. nervous, gastrointestinal, and respiratory) ¹. Different theories exist about the origin of these cysts in literature. Most common theory states that cysts result from defective embryonic development during the 3rd or 4th week of embryonic life. The other theory argues that teratomas are acquired cysts which can occur secondarily to the implantation of epithelial cells subsequent to accidental or surgical injury ².

Dermoid and epidermoid cysts are discussed together due to their similarities. They are very similar in pathologic appearance, too. Epidermoid inclusion cysts have a thin squamous lining due to lack of dermal appendages, and they rarely contain calcifications. These cysts contain debris from the desquamation of their squamous epithelial lining. The debris contains keratin, a proteinaceous material, and some cholesterol.

Dermoid cysts are circumscribed, encapsulated lesions. They are lined with ectodermally derived squamous epithelium that contains a variable number of skin appendages (sebaceous glands, hair follicles, and sweat glands). They have a thicker lining, which may contain dystrophic calcifications. The lumen of the cyst is filled with a mixture of keratin, sebaceous material, and occasionally hair ³.

Most common clinical presentation of dermoid/ epidermoid cysts is a slow growing mass located in the midline. Rapid grow may be seen secondary to a sudden increase in the amount of desquamation, pregnancy or association with a sinus tract. The size of the cyst varies between a few millimeters to 12 cm ¹.

Ultrasonographic features include solid or cystic structures and hyperechoic foci within a heterogeneous mass. On CT images the inner fluid material of the cyst appear as homogenous and hypoattenuated. Some dermoid cysts show density of fat whereas the others have attenuation similar to water. Dermoid cysts have thick and apparently enhanced lining, while epidermoids have thinner lining ².

Considering its multiplanar imaging capacity and better soft tissue contrast, MRI has advantage over US and CT. MRI is also helpful in planning surgical procedures and in assessing therapeutic success. Presurgical imaging is important due to demonstrating extension to periosteum or adjacent structures. So that, surgical approach can be modified according to results of MRI ⁴. The signal intensity of dermoid cysts on MRI varies. They can be hyperintense (because of the presence of sebaceous lipid) or isointense relative to muscle on T1 weighted images. On T2 weighted images, dermoids can show heterogeneous hyperintense signal. However, the epidermoids usually have uniform increased signal intensity. Also epidermoid cysts are generally hypointense on T1 weighted images, hyperintense on T2 weighted images and may show diffusion restriction Postcontrast administration may show subtle peripheral enhancement ⁵.

In our case, mass was at midline, had thick contrast enhanced wall on CT and hyperechoic foci on ultrasound like dermoids, but it showed no distinct fat suppression like epidermoids. Actually, we could not distinguish between them with radiologic methods exactly. It was done with histopathologic results. Differentiation of a midline neck mass into epidermoid and dermoid is not important in practical approach. Both lesions are benign. Treatment is the same; excision. The only important point that determines the treatment is the location of the lesion in relationship to the myelohyoid muscle. At this point MRI is the most important technique to determine the relationship between the lesion and the muscle. Dermoid and epidermoid cysts are rarely encountered in the neck. However, in English literature we can see cases like, sublingual or intraparotideal dermoid cysts ⁴. It is important to keep dermoid / epidermoid cysts in mind for the differential diagnosis of midline neck masses. In the differential diagnosis of dermoid /epidermoid cysts we can encounter thyroglossal duct cysts, branchial cleft cysts, vascular malformation, lymphangiomas, and benign tumors like lipoma or schwannoma ¹.

Conclusion

This report is about a rare case of epidermoid/dermoid cyst in the midline region of the neck. They often manifest as slow-growing masses and rarely cause symptoms unless enlarging sufficiently or after infection. US is frequently used initially to confirm the cystic nature of the lesion. Contrast enhanced CT can confirm the cystic nature and show peripheral enhancement and MRI provide essential information on the cyst location to decide preoperative planning. Differentiation of epidermoid and dermoid pre operatively is more of academic interest. The only important issue is the relationship of the lesion to the myelohyoid muscle which determines the surgical approach.

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Information Presentation

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