

A Rare Case Of Dermoid Cyst Originating From The Submandibular Gland

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Citation

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Abstract

Dermoid cysts are rare, benign teratomatous congenital lesions, dermoid cysts originating from the submandibular gland are extremely rare. A 47-year-old female admitted for swelling at the right of the neck with duration of 20years. The neck ultrasonography revealed intense-content, cystic lesion containing minor fatty islets at the localization of right submandibular gland. The computed tomography and magnetic resonance imaging demonstrated a dermoid cyst originating from the submandibular gland. However patient refused surgery. Although dermoid cysts are generally at midline, may also originate from the submandibular gland itself, as is the case in our patient.

This case was presented in 27th Turkish National Congress of Radiology, Antalya, Turkey.

INTRODUCTION

Dermoid cysts are rare, benign teratomatous congenital lesions. Often, they are observed in the orbita, nasal dorsum, oral base, infratemporal fossa and anterior neck [1]. 1-7% of all dermoid cysts are detected in the head-neck. 23% of these are observed in the oral base [2]. There are few publications on dermoid cysts originating from the submandibular gland. Our objective is to present a rare case of dermoid cyst originating from the submandibular gland with radiologic findings.

CASE REPORT

A 47-year-old female patient presented to our hospital with the complaint of swelling at the right side of the neck. The patient with this complaint for 20 years revealed normal findings except for the swelling in the right submandibular region on physical examination. The neck ultrasonography (US) performed in the patient with normal laboratory tests to evaluate the swelling at the right side of the neck revealed intense-content, cystic lesion containing minor fatty islets at the localization of right submandibular gland (figure 1). The computed tomography (CT) of the neck didn't show the right submandibular gland. At this localization, a cystic lesion at a size of 5.5x5x3 cm containing fatty-density nodular areas and liquid-liquid levels is detected (Figure 2).

Figure 1

Figure 1: US image of the fatty and soft tissue within the liquid in the right submandibular region

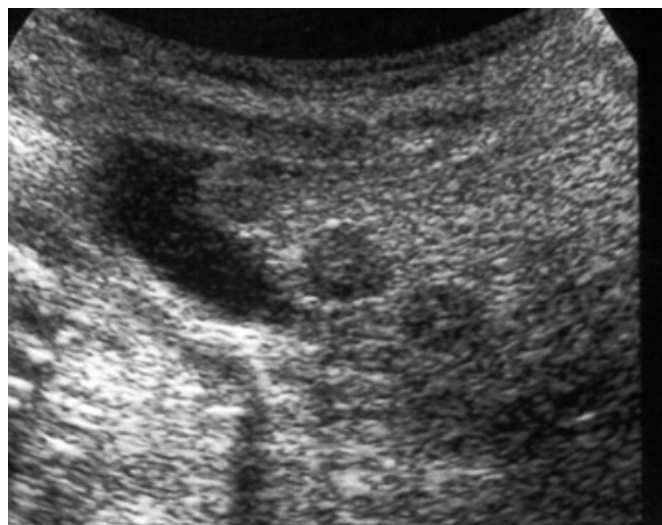
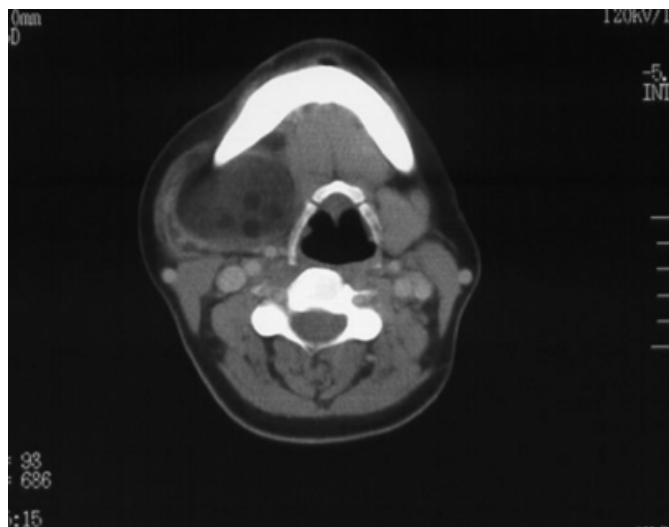


Figure 2

Figure 2: In the right submandibular region, liquid-liquid leveling and areas more hypodense than the liquid of the fatty islets within the cyst are observed.



Magnetic resonance imaging (MRI) of the neck revealed a hyperintense lesion and leveling at the base. It was considered to be cyst. Within the lesion, small nodular regions in patches that were consistent with hyperintense fat were detected on both sequences (Figure 3a). Areas consistent with lipid were suppressed after lipid suppression (Figure 3b). Following intravenous contrast material administration, minimal peripheral contrast uptake was observed in the mass. The patient who was diagnosed with dermoid cyst originating from the submandibular gland as a radiological view refused surgical treatment. The patient was put under radiological and clinical follow-up.

Figure 3

Figure 3a: The T1-weighted MRI section obtained on the axial plane revealed areas more hyperintense in the lesion in the right submandibular region compared to the muscle and higher-density regions inside.

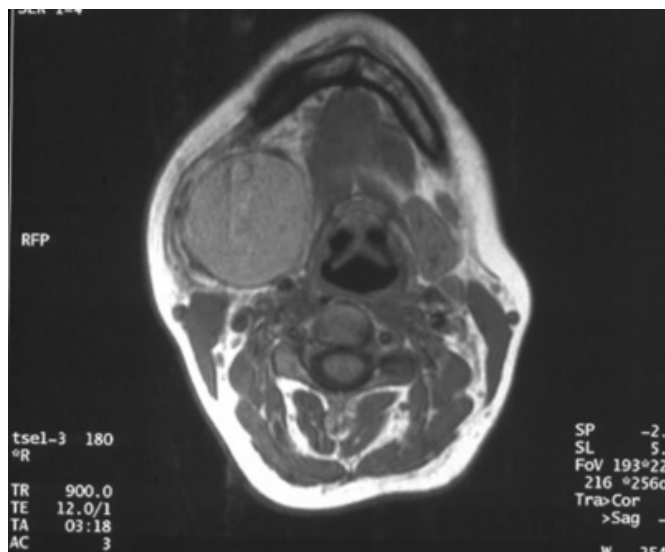
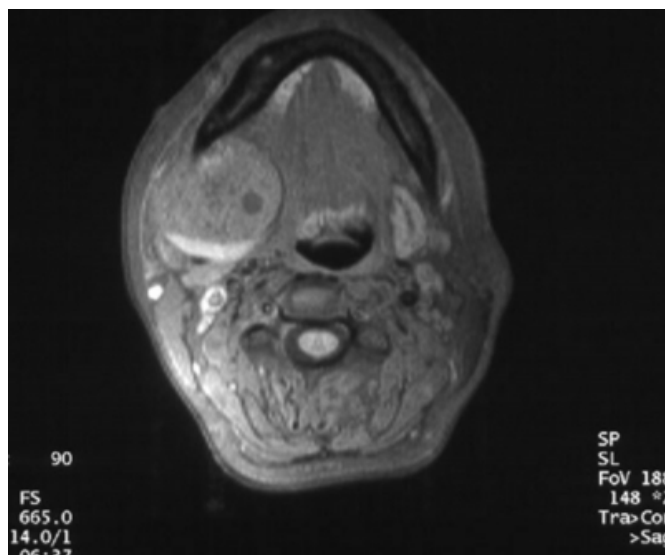


Figure 4

Figure 3b: On the T1-weighted fat-suppressed section obtained on the axial plane, liquid-liquid leveling has become marked and the upper fatty islets are observed as suppressed



DISCUSSION

Dermoid cysts contain embryonal germ layers. While teratomas contain all three germ layers (endoderm, mesoderm, ectoderm), dermoid cysts only contain the mesoderm and endoderm layers [2]. Hair follicles and sweat glands are observed on the dermoid cyst wall and this feature differentiates them from epidermoid cyst [23]. They are

midline masses and rarely present as lateral neck mass. They generally develop slowly; they are diagnosed at the 2nd or 3rd decade. Few cases are diagnosed at childhood [4].

Dermoid cysts are observed in the head-neck region, frequently in the orbita, nasal dorsum, oral base, anterior neck [2]. Histopathologically, it's lined with ceratinized, stratified flat epithelium [3]. Often, they are observed along the embryonic fusion line [23]. Dermoid cysts are filled with cheesy, ceratinous material and are usually composed of connective tissue and fibrofatty matrix [2].

Dermoid cysts originate from ectodermal pluripotent cells; 5% may transform into flat-cell carcinoma [5].

Dermoid cysts are well-bordered unilocular masses on ultrasonography and may be purely cystic or heterogenous depending on the cholesterol, desquamated epithelium and skin appendages. CT and MRI more clearly reveal the nature of the cyst [5]. On CT, they are viewed as moderate-thin wall unilocular cystic lesions. On CT, the central cavity is filled with homogenous, low-density liquid. In the liquid, combined minor fatty nodules may be observed as marbles. The appearance resembling a sack full of marbles formed by combination of these nodules is typical for the dermoid cyst. In addition, the cyst may have a heterogeneous appearance depending on the various germinal structures inside. Liquid-liquid level and layering at the upper part in the form of fat may be observed. The cyst wall may exhibit contrast uptake after contrast material administration [5]. Similary in our case, there were liquid-liquid leveling and minor fatty islets in the form of marbles. MRI images may vary. However, they may be observed as iso-hypointense on T1-weighted images relative to the muscle and as hyperintense or

heterogeneous on T2-weighted images relative to its content [4]. In differential diagnosis, branchial cleft cysts, tiroglossal canal cysts, ranula, lipomas, lymphoma and squamous cell carcinom should be considered.

In conclusion, although dermoid cysts are generally at the midline, they may also present as lateral neck mass. At the lateral, they are commonly located in the submandibular region and even if rare, they may also originate from the submandibular gland itself, as is the case in our patient.

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