

Case Report

An unusual dermoid cyst presenting as midline swelling of neck in an adult patient

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ABSTRACT

Dermoid cysts are true hamartomas focal malformations that can resemble neoplasms grossly and even microscopically but they arise from an abnormal formation of tissue elements. Here we are presenting a 44 years old woman presented with a midline mass in the neck present for many years. Fine-needle aspiration biopsy showed single and anucleate squamous along with few mature squamous cells against the background of debris. No atypical cells were seen. Ultrasonical examination revealed well-defined thick-walled area in the midline measuring 37×27 mm. Histologic examination of the cystic content identified epidermis, sebaceous glands, and hair follicles along with copious sebaceous material. These findings are consistent with a dermoid cyst. So, our case report demonstrates that dermoid cysts can present as neck mass and must be kept in the differential diagnosis. Even though characteristic radiological and histopathological features make the diagnosis simple yet, it may be difficult to diagnose, if present at unusual locations.

Keywords: Dermoid, Neck, Cystic

INTRODUCTION

Dermoid cysts are true hamartomas focal malformations that can resemble neoplasms grossly and even microscopically but they arise from an abnormal formation of tissue elements normally present at the site.¹ Among the dermoid cysts, 7% are said to be occurring in the head and neck region.² Most common locations are the lateral eyebrow and the floor of the mouth in the midline. Dermoid cysts are present along the lines of embryonic fusion and hence said to occur due to an embryonic accident during the development, where in the epithelial rests become enclaved at the fusion lines. They form during fetal development when ectodermal structures become trapped along lines of embryonic fusion. Cyst walls are made up of epithelium-lined connective tissue, skin appendages, keratin, sebum, and hair.³

CASE REPORT

A 44 years old female patient presented with a midline mass in the jugulum. Patient initially noticed a painless, slow growing mass lower on the neck, she presented for the cosmetic problem and there were no compression symptoms related to it. There was no history of fever, discharge from the swelling. On palpation the mass was well marginated, semi- solid, semi cystic, compressible, approximately 40 mm in size, there was minimal movement with deglutition and protrusion of tongue. Ultrasonical examination revealed well-defined thick-walled area in the midline measuring 37×27 mm. The mass was lying immediately anterior to the trachea, apparently over the pre-tracheal fascia and not invading any adjacent structure or vessels suggesting the benign nature of the lesion. The thyroid gland was well visualised in its entirety, separate from the cystic mass, with the lesion

maintaining an inferomedial position in relation to the gland and hyoid bone. There was no obvious uptake of vascularity on colour Doppler flow imaging (CDFI). On fine-needle aspiration biopsy single and anucleate squames along with few mature squamous cells against the background of debris was seen. No atypical cell was seen. After adequate preparation patient was operated in general anaesthesia. Through minimal skin incision on the anterior of the neck, just above the tumour mass, the cystic lesion was completely removed from the front of trachea and infrahyoid muscles, with the intact wall. Histopathology analysis showed dermoid cyst. On definite histopathology these findings were confirmed. The cyst was 46×42×25 mm (CC×LL×AP) in size, with keratinized stratified epithelium covering the cyst wall, and sebaceous and sweat glands, as well as hair follicles and hair within. Patient was released from hospital on sixth postoperative day, with full recovery.

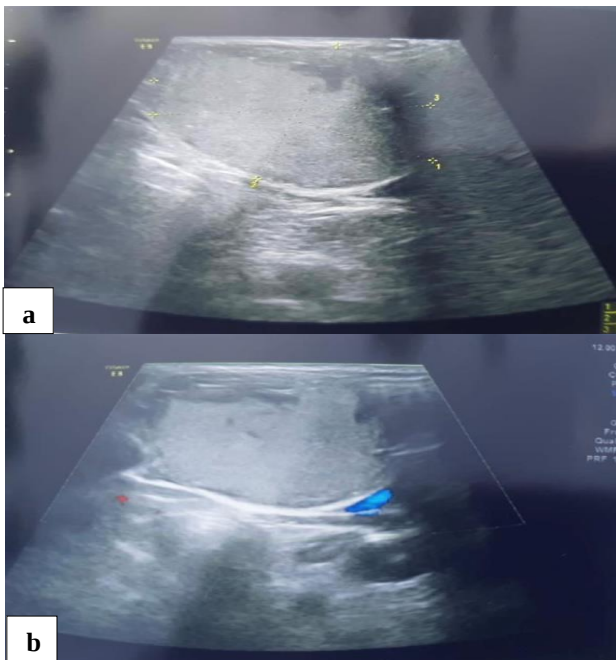


Figure 1: (a) and (b) Shows the size of dermoid.

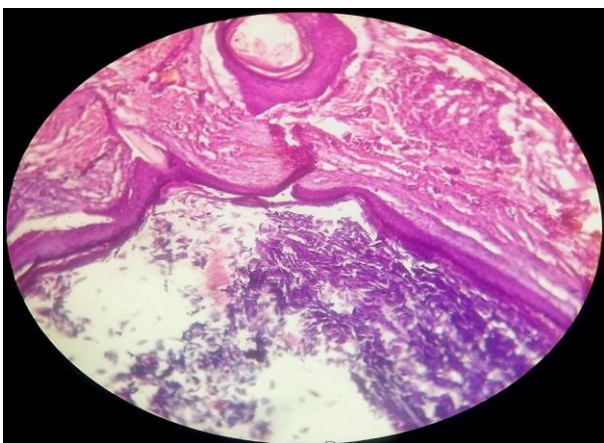


Figure 2: Histopathological examination of dermoid.



Figure 3: Clinical picture of dermoid after removal.

DISCUSSION

The spectrum of a teratoma includes a dermoid cyst, an epidermoid cyst and a teratoid cyst, which are all covered by squamous epithelium.⁴ Dermoid and epidermoid cysts are ectoderm lined inclusion cysts which differ in their contents. Both the dermoid and the epidermoid cysts are uncommon in the head and neck region and represent 7% of all the cysts in that region.⁵ Since all these cysts are lined by squamous epithelium, the cheesy keratinaceous material is seen within them.

Congenital neck masses presenting in adulthood are rare. The spectrum of differential diagnosis includes most commonly thyroid masses, lymph nodes, vascular and malignant lesions. The clinical history and physical examination are important factors in the evaluation. Imaging modalities such as ultrasound (US), colour Doppler, computed tomography (CT) and magnetic resonance imaging (MRI) play an important role in establishing the final diagnosis as well as in delineating the extent of the lesion for planning surgical treatment. Dermoid and epidermoid cysts are uncommon but not rare lesions when occurring in the head and neck region. They are usually discussed together in the literature because of similar histology. Dermoid and epidermoid cysts both are lined by ectodermally derived squamous epithelium.⁶ A true dermoid cyst contains skin appendages within its lining, while epidermoid does not contain skin appendages.⁶ Approximately 7% of all dermoid cysts occur in head and neck region. Lateral eyebrow is the most common site, followed by the floor of mouth.^{6,7} Clinically, they present as painless, slowly enlarging masses that are usually asymptomatic. Most of the cases are diagnosed in the second or third decade of life with some lesions presenting in infancy.⁸ There is no gender predilection for dermoids occurring in the head and neck region.⁹ About 5% of dermoid cysts can undergo malignant degeneration into squamous cell carcinoma.¹⁰ Usually, dermoid cysts are congenital but can occur as sequelae of trauma in which skin elements are embedded into the subcutaneous tissue.¹⁰ Radiologically dermoid cyst appears as a thin walled, unilocular mass. CT reveals homogenous

hypoattenuating cystic lesion with fat-fluid level and may appear to be filled with “marbles” due to coalescence of fat into small nodules within the fluid matrix. This “sack of marbles” appearance is usually pathognomic.^{2,11} The rim of these cysts usually enhances following contrast administration. On MR imaging, dermoid cysts have variable signal intensity.¹² MRI can depict its relationship with surrounding soft tissues very clearly proving to be very useful for preoperative planning. Ultrasonographic picture has not been discussed in detail in the literature previously. Sonogram showed well defined cystic mass lesion infrahyoid and inferomedial to thyroid gland in location, (thyroglossal cyst has attachment with hyoid bone). Lesion showed internal echogenic foci with no evidence of any internal vascularity. The mass was moving on deglutition apparently because it was lying over the pre-tracheal fascia, making the clinical diagnosis difficult. Ultrasound should be considered as the first-line of investigation because it is non-invasive, does not involve ionizing radiation and is easily available.

CONCLUSION

Dermoid cysts of the neck are rare and can often be misdiagnosed with thyroid tumors. US and MRI are helpful in making the correct differential diagnosis. Surgery is the treatment of choice, especially due to possible malignant alteration. However, surgical manipulation has to be delicate, since cyst content, especially if with bacterial infection, may spread into the surrounding tissues and cause severe complications. The chance of malignant degeneration is small, and the postoperative prognosis is excellent.

To conclude dermoid cysts do present occasionally as neck mass and must be kept in the differential diagnosis. Even though characteristic radiological and histopathological features make the diagnosis simple yet, it may be difficult to diagnose, if present at unusual locations.

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