

RARE PRESENTATION OF NECK MASSES: A CASE SERIES

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ABSTRACT

Neck masses are usually defined as growth or swelling over the Neck region. Neck masses can be benign or malignant, so thorough examination and investigation is needed to reach a final diagnosis and treatment. At the present series all the Neck masses are rare due to tumour presentation, site, size and Histopathological findings.

KEYWORDS: Squamous Cell Carcinoma, Epidermal inclusion cyst, thyroglossal cyst, Papillary Carcinoma.

INTRODUCTION

Neck region is highly intricate region of the human body, containing many significant structures. Many masses or swellings present in the neck which can be benign or malignant needs thorough examination and investigation to reach final diagnosis. Neck masses are usually classified based on etiology – congenital or acquired, site, duration- acute or chronic, and consistency. In this series we have included 3 (three) neck masses which is rare presentation due to their way of presentation, location, size. It was challenging to reach final diagnosis and to manage the cases.

CASE 1:

A 52-year male patient developed small swelling over the anterior part of neck which was insidious and gradually progressive in size over 6 years. At the beginning the swelling was small over the anterior part of neck and progressively increased in size and projection-like structures formed over the time. There is no history of any difficulty in swallowing or breathing over the year. The swelling was painless and attached in the anterior part of neck (Figure 1,2). Oral cavity, oropharynx, larynx and nasopharynx shows no abnormalities. There was no palpable cervical lymphadenopathy present. Contrast CT scan of Neck showed evidence of polypoidal heterogeneously enhancing lesion approximate size was 4.8x 7.3cm in anterior neck in midline just superior to isthmus of thyroid. Preoperative Histopathological examination showed mild to moderately dysplastic

squamous Cells with plenty of sub epithelial inflammatory cells. The patient was undergone for complete resection (Figure 3) of the tumour. Post operative Histopathological examination shows well differentiated Squamous Cell Carcinoma (Figure 3) with depth invasion > 2.5 cm and deep resection margin and all margins are free of tumour. The patient was advised to regular follow and there is no recurrence of the tumour in past 1 year.



Figure 1: Neck mass (Front and lateral view).

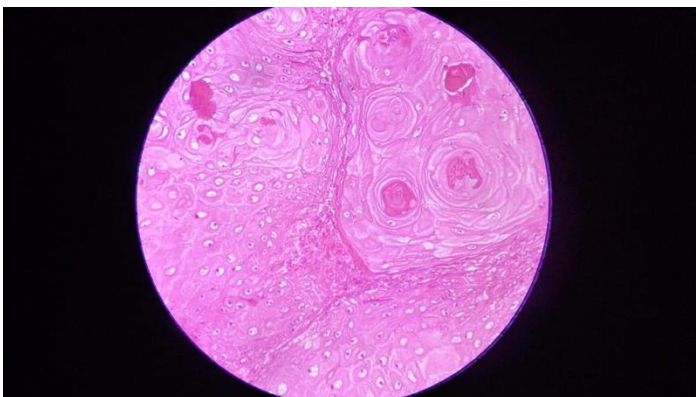


Figure 2: Resection of the tumour



Figure 3: well differentiated Squamous Cell Carcinoma (HPEX 100).



Figure 4: Postoperative status of the patient.

CASE 2

A 40-year-old male chronic alcoholic patient presented with multiple swelling over the Head and Neck region for the last 3 years. Initially, the mass was small in size, but in due time the size of the mass increased and now presented with huge swelling in the right Head and Neck region. There was no history of any trauma to face or neck. There was no history of any difficulty in chewing or swallowing and fever. On examination, multiple swellings were present in the Neck and pre-auricular area right side (Figure 5) in which there were 2 huge swellings present in the right parotid and right submandibular region. There were no signs of inflammation, tissue rupture or central punctum. Cystic consistency with well-defined margin and freely mobile and not adherent to the underlying structure. The size of the mass right parotid region is approximately 4.3x3.9cm and the right submandibular region is approximately 5.9x 4.7cm. USG neck was suggestive of two well-defined, thin wall homogeneously lesions in the right parotid and right submandibular region with minimal blood flow. Fine needle aspiration examination done and showed Epidermal inclusion cyst (Figure 6). The mass was completely excised. A thick smelly creamy or cheesy yellowish materials leaks from the cyst. The surgery was uneven full and recovered well (Figure 7) and the patient was advised to regular follow up. There is no recurrence in last 2 years.



Figure 5: Neck swelling (lateral view).

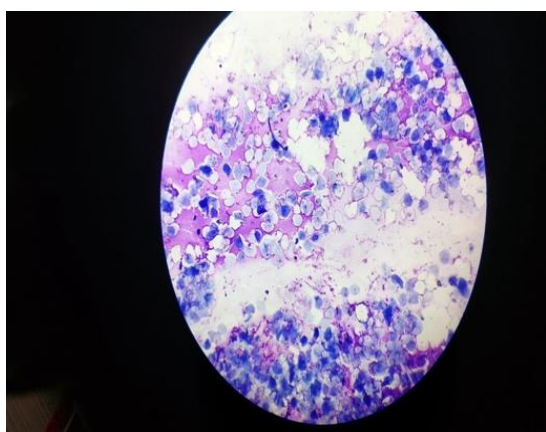


Figure 6: Epidermal inclusion cyst (HPE x100)



Figure 7: Postoperative status of the patient.

CASE 3:

A 33-year-old female presented in our outpatient department with a painless small swelling over the midline of the Neck for last 2 month. On examination, it was located in the anterior aspect of neck superior to the hyoid bone measuring approximately (3x2cm), and it moves with deglutition and protrusion of the tongue. Contrast

enhanced CT Neck (Figure 8) suggestive Thyroglossal duct cyst with associated ectopic thyroid tissue showing micro- calcification, suspicious of malignant. CT guided Fine needle aspiration examination showing clusters of follicular cells along with the macrophages, suggestive of Thyroglossal cyst. The patient was posted for Sistrunk operation and postoperative Histopathological examination reveals Papillary Carcinoma of Thyroglossal duct cyst with lymphovascular infiltration (Figure 10) and perineural invasion were absent. Deep resection margins were free from involvement of neoplasm. The patient was advised to attend regional cancer centre and regular follow up.

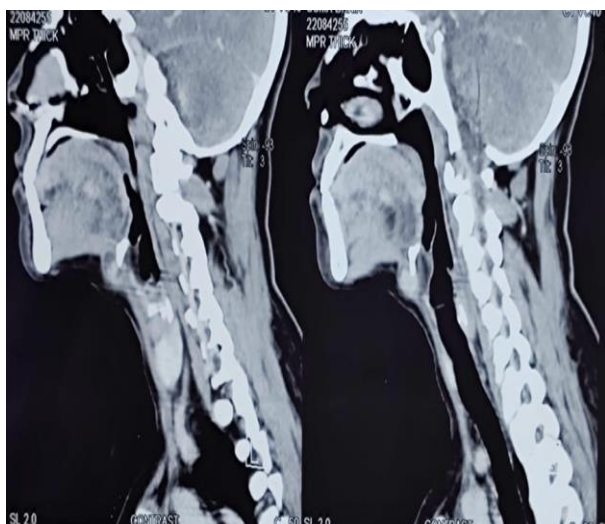


Figure 8: CECT of Neck

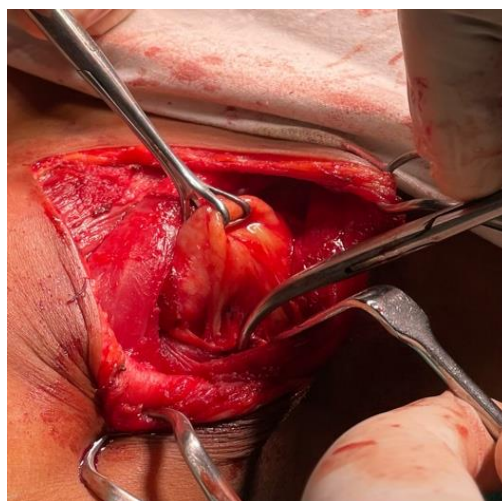


Figure 9: Intraoperative Thyroglossal cyst.

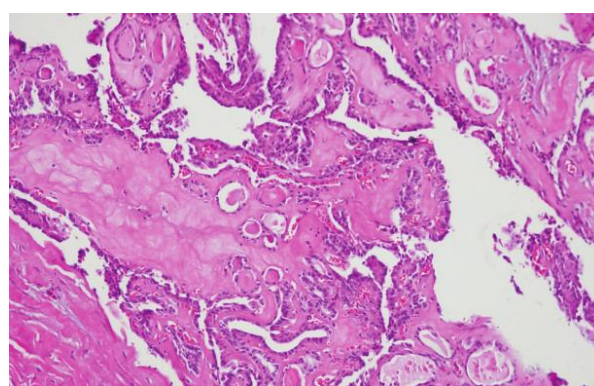
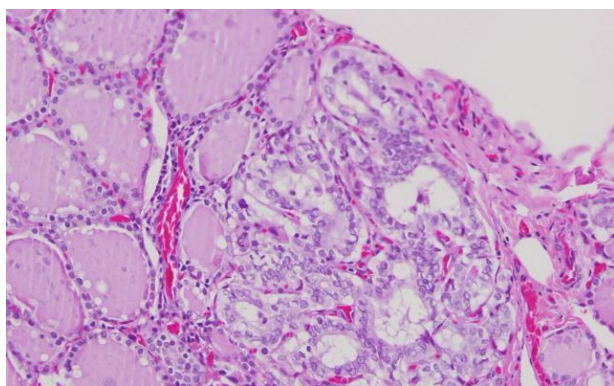


Figure 10: Papillary Carcinoma of Thyroglossal duct cyst(H&Ex100).

DISCUSSION

The causes of neck masses can be infectious, congenital, or acquired and neoplastic. Neck masses are usually present in the anterior part and lateral part of the neck region, physically neck masses are visible it may lead to cosmetic problems and severe health difficulties. Neck masses need to evaluate properly to final diagnosis and prompt therapeutic intervention.

Squamous cell carcinoma originates from various anatomical subsites in the head and neck area¹. Squamous cell carcinoma predominantly impacts male more than females, typically occurring in middle to later stages of life, although individuals of any age may be affected². Dysplasia is characterised by a range of morphological alterations in the architectural and cytological structure of the squamous mucosal epithelium, which correlates with a heightened risk of developing Squamous cell carcinoma³. Verrucous carcinoma represents a well

differentiated subtypes of squamous cell carcinoma distinguished by its locally invasive nature without metastatic potential. This variant is characterised by an exophytic or wart like morphology, the absence of epithelial dysplasia, and the presence of well-defined pushing margins⁴. The correlation between various regions of dysplastic squamous epithelium and the onset of squamous cell carcinoma in the head and malignancies, in addition to the effects of alcohol consumption and tobacco use⁵. In the present **case 1**, patient had the painless mass for long periods which gradually increased in size and limited only to the external part of anterior neck region.

Epidermal inclusion cysts are non malignant lesions distinguished by cystic cavities that are lined with simple squamous epithelium and contain components derived from skin appendages or tissue originating from all three germ layers⁶. Epidermal inclusion cysts were histologically categorised by Meyer in 1955 into three distinct types: epidermoid cyst, dermoid cyst, teratoid cyst⁷. Epidermoid cysts are characterised as gradually expanding, non painful lesions that protrude from the skin's surface. They frequently exhibit a central punctum, which signifies the obstructed opening of the pilosebaceous follicle⁸. There are 1.6% to 6.9% of epidermal inclusion cysts in the head and neck region⁹. An epidermal inclusion cyst is fundamentally an epidermoid cyst that arises from the traumatic embedding of epidermal components into the dermis, which subsequently undergoes cystic transformation¹⁰. Cystic formation in the parotid gland poses challenges for both diagnosis and therapeutic intervention¹¹. In this present series **case 2**, there was no history of trauma or congenital abnormalities, the swelling was painless and huge swelling over the submandibular and parotid region, and multiple small swelling over preauricular area, central punctum was absent, mistaken as parotid and submandibular tumour.

The development of the thyroid gland commences in the third week of gestation. Initially, it maintains a direct connection to the tongue via the Thyroglossal duct, which typically undergoes involution by the 8th week of life. Concurrently, the hyoid bone arises from the second and third branchial arches, facilitating a close anatomical relationship, often due to an obstruction of duct by secretory epithelial tissue, the formation of a sinus or cyst may occur¹². Thyroglossal duct cysts represent the most prevalent congenital cystic anomaly associated with the development of thyroid gland. These cysts are frequently observed in the adult population, with a prevalence rate of 7%¹³. Thyroglossal duct cysts are typically classified as benign, however, there exists a 1% incidence of malignancy in certain cases¹⁴. The origins of these tumours remain ambiguous; however, it has been proposed that they may arise de novo or disseminate from a primary tumour located in the thyroid gland¹⁶. Typically, the diagnosis is established only after the surgical removal of the cyst. While the Sistrunk procedure is frequently considered sufficient, there are ongoing debates regarding the necessity of thyroid economy based on Histopathological findings¹⁶. In our **case 3**, the patient presented to us with painless midline neck mass with less duration, initially it was diagnosed as benign Thyroglossal cyst and Sistrunk operation was performed, and Histopathological examination of resection tissue confirmed the diagnosis of papillary Thyroglossal duct carcinoma.

CONCLUSION

Many Neck masses are encountered in day-to-day ENT practice, which needs to do thorough physical and clinical examination and required investigation to reach final diagnosis and prompt management. The neck mass can be benign or malignant so, early diagnosis and prompt treatment increases the survival rate and reduce the chances of recurrence of the disease.

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