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Case Report Open Access

Rare Case of Mucoepidermoid Carcinoma of the Thyroid Gland

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Abstract

Thyroid cancers (CA) account for about 0.4% of all CA deaths. It is thus very important to be able to determine the type of CA in view of the differing prognosis and possibility of the CA being a secondary from other glands like the Salivary gland. Mucoepidermoid CA is an extremely rare form of Thyroid CA and not much is known about its origin, disease course and treatment. While some think it originates from the Salivary gland, others believe it comes from Ultimobrachial body cell nests. It seems to be slow growing but it also has some metastatic properties. Generally, total thyroidectomy has been suggested as treatment due to lack of adequate information about the disease. The authors want to present a rare finding of Mucoepidermoid CA in a Thyroid lump.

Introduction

Mucoepidermoid carcinoma (MEC) is an extremely rare form of carcinoma (CA) [1-7]. It most commonly occurs in the salivary glands but has also been reported in the respiratory tract, esophagus, breast, pancreas, genitals, anus, lips, mandible and rarely in the thyroid [1,2,4,6-8]. Origin of MEC is unknown but its thought to originate from solid cell nests coming from Ultimobranchial body [1,2,4,7]. However, some authors believe it to be of salivary duct epithelial origin, making up 3% - 9% of all salivary gland tumours and about 30% of all malignant salivary gland tumours and also occurs in 60% - 70% of tumours in the parotid gland7,8,9. In any case, it rarely occurs in the thyroid [1-3,7].

Thyroid MEC have been reported very few times in literature but the cytological properties of MEC seem to be consistent despite the organ of origin5. They are mostly slow growing tumours but are known to show aggressive behavior in a few cases [1,2,4,5,7]. We wish to present a case of MEC that occurred in a patient with Thyroid lump.

Case Report

A 64 year old female presented with a small lump on the left side of her neck that has been there for about a month. It has not been increasing in size, was painless and there was no associated obstructive, malignant or thyroid symptoms. She has a background history of transient ischemic attack, hypothyroidisim for past 7 years and recently had a left mastectomy and sentinel node biopsy, which turned out to be grade 2, estrogen receptor positive and progesterone receptor negative invasive ductal carcinoma pT2N0I+ (SN). She is still under follow up for it. She is a non- smoker, drank alcohol sparingly and does not have any family history of CA. Her medication comprises Eltroxin 100 mcg and Asprin 75 mg both taken once daily.

On examination, she was found to be euthyroid; however, she had a firm, smooth surfaced oval nodule measuring about 2 cm by 5 cm. The lump was non-tender with no associated skin changes. Although not attached to overlying skin, it moved with swallowing but not on protrusion of the tongue. There was also no evidence of retrosternal extension. All other systems were essentially normal. Thyroid ultrasound done showed two small nodules, one on each lobe of the thyroid. The left measuring about 2 cm by 4 cm while the right one measured 2 cm in diameter. The Isthmus was normal and the lesions were reported as benign looking.

However a fine needle biopsy done demonstrated pale, enlarged cells with occasional spindled, nucleolated cells devoid of colloid but with occasional grooves and possible pseudo inclusions on the left side. An impression of possible neoplastic process of the Papillary CA variant was made. On the right, there were several lymphoid follicles and Hurthle cells. In view of the size of the nodule, and advice from the regional multidiciplinary team, total thyroidectomy was performed.

Histology of the Thyroid showed grossly un-encapsulated lesions. Microscopically, the tumours were circumscribed and multinodular with mixture of elements. There were numerous islands and cords of epidermoid and squamous epithelium. Some were keratinized but majority of the epidermoid cells had nuclear grooves. These islands were admixed with more follicle like or cystic structures that contained a mixture of colloid like material and mucus. Although the lesions were fibrotic and chronically inflamed, there was no evidence of papillary CA.

The rest of the Thyroid tissue showed severe lymphocytic thyroiditis with focal granulomatous inflammation and nodular hyperplasia with Hurthle cell changes present multifocally. The lesion was negative for calcitonin and positive for TTF-1. It was classed as MEC stage pT2pNXpMX. Follow up Computerized Tomography Scan (CT) neck and thorax done was normal with follow up CT planned for 3months time. Currently, patient is fully recovered without complications.

Discussion

Thyroid CAs account for about 0.4% of CA deaths. Majority of thyroid CAs have well-known pathogenesis, treatment and prognosis and it is very important to be able to differentiate between the different types in view of treatment and prognosis [1,5]. MEC rarely occur in the thyroid and is not very well documented in literature.

Two types of MEC of the Thyroid have been reported in literature; the primary MEC and Sclerosing Mucoepidermoid Carcinoma with Esinophillia (SMECE) [2,4-6]. The first case of primary MEC of the Thyroid was described in 1977 with only 40 cases reported by 20127, while the first case of Thyroid SMECE was reported in 1991 with only 20 cases reported till date [1,2,4]. Primary MEC can occur in any age group with male- female ratio of 1:2 [5]. It is usually slow growing and rarely metastasizes although it shows aggressive behavior with extra thyroidal extension and distant metastasis in some cases [1,2,4,5,7]. Not much is known about the treatment but total thyroidectomy is usually advised with a 5 year survival of about 90% [2,7,8].

Cytological description of Primary MEC is scanty in literature but most cytological smears show one or three cell types; Squamous, Intermediate and Mucinous cells of which their arrangement depend on the grade and differentiation of the tumour [1,4,8]. Das and Kalyani [5], reported that MEC comprises delicate, anastomosing cords and small nests of neoplastic cells located in dense hyalinised cells. Most of the malignant cells have a squamous appearance with prominent nucleoli, intercellular bridges and keratin pearls. However, the intermediate cells with moderately increased nuclear/cytoplasmic ratio and centrally located nuclei are the least diagnostic cells of MEC [1,4,5,8].

MEC is usually thyroglobulin positive but SMECE is consistently negative for thyroglobulin and calcitonin and is positive for Thyroid Transcription Factor 1 (TTF-1) in 50% of cases [2,4,6]. The case presented shows similar cytological characteristic as described in literature and total thyroidectomy was used as treatment.

In view of possible differential diagnosis of Thyroid lumps, which include fibrosing hashimoto thyroiditis, papillary CA with squamous metaplasia, primary or metastatic squamous CA and MEC, it is important to have a high index of suspicion and a specific diagnosis when dealing with Thyroid lumps. Most importantly, the authors propose, that in cases of diagnostic doubts, with big nodules, total thyroidectomy should be considered.

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