Papillary microcarcinoma of thyroid presenting as cervical cystic lymph node metastasis

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Abstract:

Papillary microcarcinoma of thyroid is an incidental finding in thyroid glands removed for other reasons and in population based autopsy studies. Despite its small size, it may be associated with cervical node metastasis, which can be cystic. Distant metastasis is exceptionally rare. The prognosis is generally excellent. The primary focus is usually very tiny and therefore should be thoroughly searched for in the thyroidectomy specimen. Herein we report a case of papillary microcarcinoma presenting as cystic cervical lymph node metastasis.

Keywords: Papillary microcarcinoma, Cervical cystic lymph node metastasis, Thyroid

Introduction:

Papillary microcarcinoma (PMC) is one of the variant of papillary carcinoma of thyroid with an excellent prognosis (1). It is usually occult and sometimes presents with cervical lymph node metastasis, which can be cystic. The primary focus is usually very tiny and therefore should be thoroughly searched for in the thyroidectomy specimen. A case of PMC of thyroid in 55-year-old male patient is reported who presented with cervical cystic lymph node metastasis.

Case History:

A 55-year-old male patient underwent an excision of right-sided cystic neck swelling in a remote place. It was diagnosed as secondaries of papillary carcinoma of thyroid. Patient came for review of slides. On review, the histopathological diagnosis of metastasis of papillary carcinoma with cystic change was given (Fig. 1).

Fig. 1: Photomicrograph showing papillary carcinoma of cervical lymph node (H & E x 10).

Clinically there was no swelling in thyroid region. Ultrasound showed normal thyroid gland except for one to two tiny cysts in both the lobes. T3, T4, TSH were normal. Patient underwent total thyroidectomy and the specimen received consisted of two lobes of thyroid measuring, 4 cm x 4 cm x 3 cm, thinly capsulated, and soft to firm. Specimen was thoroughly examined for the presence of any focus of malignancy. Only after extensive sampling a single very tiny (3 mm x 2 mm) whitish area was found. Several sections were studied from different areas. They revealed unremarkable histology. Only sections taken from suspicious whitish area revealed closely packed thyroid follicles with cells having round to oval crowded pale ground glass nuclei (Fig. 2).

Fig. 2: Photomicrograph showing focus of papillary microcarcinoma in thyroidectomy specimen (H&E x10).

There was moderate anisonucleosis and mild nuclear pleomorphism (Fig. 3).

Fig. 3: Photomicrograph showing cytomorphological details of papillary microcarcinoma (H&E x40).
Nuclear pseudoinclusion and grooves were seen in few. Occasional papillary arrangement and tiny focus of microcalcification (psammoma body) was also seen. A diagnosis of PMC of thyroid was made.

Discussion:

The PMC is a variant of papillary carcinoma of thyroid. The variants of papillary carcinoma have been grouped into two categories. Those with good prognosis are - PMC, follicular variants, encapsulated papillary carcinoma and solid variant. PMC has an excellent prognosis despite metastasis in cervical node. Those associated with aggressive behavior are diffuse sclerosing variant, tall cell variant and columnar variant (2, 3).

PMC measures less than 1 cm in size. Although recently this definition has been expanded to include lesions up to 1.5cm (3,4),most of the lesions are 3 mm-7 mm. In contrast to its clinically evident counterpart, PMC is more common in males than females. Histologically the tumour can be nonencapsulated, have marked fibrosis or may be surrounded by a dense fibrous capsule. Clear nuclei are frequently present, and they may have a follicular or papillary pattern of growth.

These tumours although small, can frequently give rise to cervical lymph node metastases. The incidence of metastasis is variable from 23%-72% (3,5,6). Cervical cystic lymphnode metastasis as first manifestation of occult papillary thyroid carcinoma is relatively rare, and such seven patients are reported. Distant metastasis are, however quite infrequent. Cystic metastases are particularly problematic because, they may be misdiagnosed as branchial cysts or benign cysts clinically or histologically (7).

In thyroid, a microcarcinoma must be differentiated from clusters of 'squamoid' or basaloid cells, remnants from ultimobronchial body. These nests are however quite small, usually less than 1mm and their cells do not have clear nuclei. Solid cell nests are located in the stroma but can also be closely attached to follicular cells. In these cases, immunohistochemical staining for thyroglobulin will be helpful.

Papillary microcarcinomas occur as a very tiny focus in the thyroid. They may be latent and discovered incidentally in thyroidectomy/lobectomy specimen or autopsy. Therefore careful and extensive sampling is essential for diagnosis.

References: