

## Primary squamous cell carcinoma of the thyroid - a case report

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### Abstract

A rare case of primary squamous cell carcinoma of the thyroid is reported herein. A 64-year-old Malay lady presented with a gradually enlarging thyroid nodule for the past 6 months and underwent total thyroidectomy. Histopathology revealed a squamous cell carcinoma of the thyroid with complete resection. Possible primary tumour elsewhere was excluded. Postoperative irradiation was given and patient is still alive after 2 years of follow-up.

**Key words:** Thyroid neoplasm, carcinoma, squamous cell carcinoma

### INTRODUCTION

Primary squamous cell carcinoma of the thyroid is a rare clinical entity and account for less than one percent of primary thyroid carcinoma in most reported series.<sup>1,2,3</sup> A thorough search for a primary carcinoma elsewhere, especially from the adjacent structures, is mandatory since the prognosis and treatment is different. Most cases are reported in elderly patients with presence of local invasion at the time of presentation. The overall prognosis of the tumour is poor with a survival rate of less than a year after the diagnosis.<sup>4,5,6</sup> We report here a case of primary squamous cell carcinoma of the thyroid with better survival.

### CASE REPORT

A 64-year-old female had a history of a gradually increasing thyroid swelling for the past 6 months. There was no pain, obstructive symptoms, dysphagia or voice changes. She felt lethargic but there was no significant loss of appetite or loss of weight. She denied any history of irradiation exposure to the neck. She had varicose veins over both legs for thirty years and right knee osteoarthritis for many years. She was under orthopaedic follow-up for her osteoarthritis, took non-steroidal antiinflammatory drugs regularly and used a walking aid. She was also hypertensive for the past one year and was on antihypertensive drugs daily. Otherwise she had no other medical illnesses. There was no history of thyroid disease in the family.

Physical examination revealed a medium-built lady with enlarged right lobe of the thyroid which moved up with deglutition. The mass measured 4 x 4 cm, was not fixed to the muscle and was quite mobile. No bruit was heard on auscultation of the mass and no cervical nodes felt. The lungs were clear and no masses were felt in the abdomen. The left calf showed varicose veins. Examination of the vulva, vagina and cervix were unremarkable.

Ultrasound of the abdomen revealed no mass. Chest XRay was normal and knee XRay showed osteoarthritic changes. Thyroid function test results were within normal limits. Direct laryngoscopy was unremarkable and fine needle aspiration of the thyroid mass was performed. The cytology aspirate was scanty and showed scattered dissociated malignant cells but a definite pattern was not displayed.

Total thyroidectomy was performed. Intraoperatively the right lobe was hard and nodular measuring 8 x 6 cm and was not attached to surrounding structures. The capsule was not breached and the left lobe appeared normal. Single internal jugular and deep cervical node were recovered. The postoperative period was uneventful and the patient recovered completely. Patient was given 30 cycle of 60 Gy radiotherapy over a 7-week period. On follow-up 2 years after surgery, patient was still alive, well and asymptomatic.

### Microscopical examination

Routinely processed and stained tumour tissues from the operative specimen were examined

under light microscopy and revealed a well-circumscribed tumour surrounded by a thick, fibrous capsule with compressed normal thyroid tissue at the periphery. The tumour was composed of two well-defined patterns of differentiation comprising cells from a well-differentiated squamous cell carcinoma with keratin pearl formation and abundant eosinophilic cytoplasm alternating and merging with sheets of poorly differentiated cells exhibiting rounded, mildly pleomorphic, hyperchromatic nuclei and scanty cytoplasm (Fig. 1). Numerous mitoses, some with abnormal forms were seen in the poorly differentiated area. Large amounts of necrosis were present in between the groups of tumour cells. The rest of the thyroid tissue was unremarkable. The margins were all free from tumour. The cells were positive for cytokeratin and negative for thyroglobulin and calcitonin by immunohistochemistry. The lymph nodes that were sent showed reactive hyperplasia.

## DISCUSSION

The clinical presentation of this patient is consistent with other reported series except that she showed a better survival. Most patients presented between the fifth and seventh decade of life. Recent enlargement of the neck mass,

hoarseness of voice and dysphagia were the most common presenting symptoms. Less commonly, dyspnea and acute respiratory arrest occurred.<sup>4,6</sup> The majority of patients showed extensive invasion of the adjacent structures at the time of diagnosis and this largely contributed to the unresectability of the tumour and poor outcome of the disease. However, ability to achieve gross total resection may extend the survival of the patient. Simpson *et al*<sup>5</sup> reported two patients with primary squamous cell carcinoma who underwent gross total tumour removal followed by radical radiotherapy, who were free of disease more than four years after treatment compared to six patients where some residual tumour was left behind who survived for less than a year. This is also observed in our case where the tumour is totally resected grossly even microscopically, and who is still alive after 2 years of follow-up without evidence of any recurrence.

Squamous cells are not usually found in the normal thyroid. However persistence of the thyroglossal duct or ultimobronchial body remnants can give rise to squamous cells in the thyroid. It can also appear as a metaplastic change of follicular cells in Hashimoto's thyroiditis, inflammatory conditions and destructive processes.<sup>7</sup> The histogenesis of squamous cell carcinoma of the thyroid is

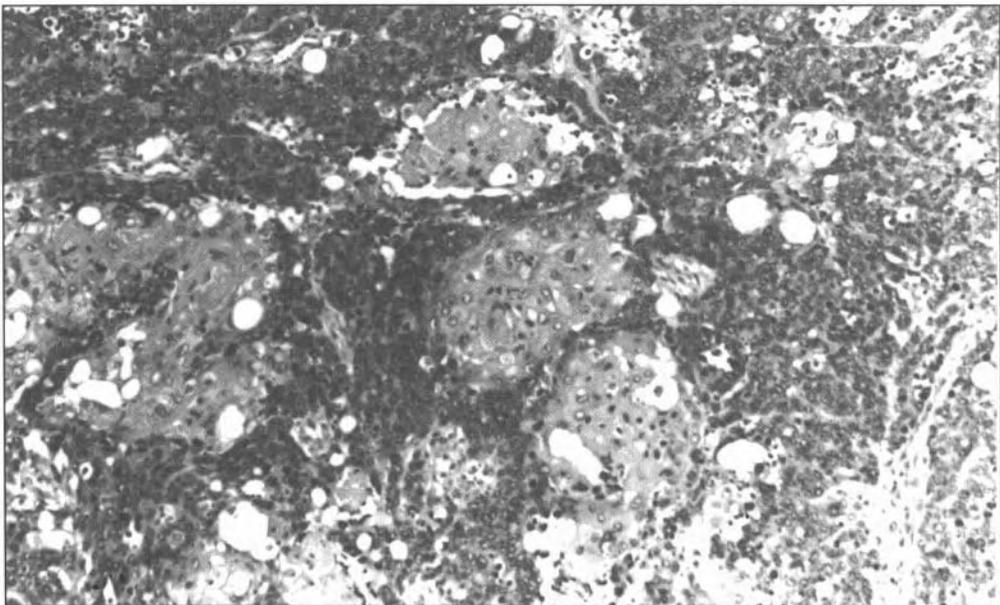


FIG. 1: Photomicrograph showing tumour composed of two well-defined patterns of differentiation comprising cells from a well differentiated squamous cell carcinoma alternating with sheets of poorly-differentiated cells. H&E x 100.

controversial. Some authors have suggested that squamous metaplasia is the precursor of squamous cell carcinoma<sup>8,9</sup> while others believe that it is a result of transformation from a papillary carcinoma in most cases.<sup>10,11</sup> Most investigators have noted that malignant squamous cell carcinoma usually coexist with papillary, follicular and anaplastic carcinoma. However, in our case this mixture of histology was absent. Because of the frequent coexistence of squamous cell carcinoma and anaplastic carcinoma and the aggressive behaviour of either histological type some investigators have classified the former as a variant of **anaplastic carcinoma**.<sup>12</sup>

The choice of treatment for primary squamous cell carcinoma of the thyroid is radical surgery in resectable cases. Postoperative radiotherapy has been used in most reported series as adjunctive therapy even though generally the tumour is comparatively radioresistant. Chemotherapy has so far been disappointing.'

In conclusion, primary squamous cell carcinoma of the thyroid is an uncommon tumour and there are no clinical features to distinguish them from other aggressive neoplasms arising from the thyroid gland. A total excision is possible in some patients and may be curative when radical radiotherapy is given postoperatively.

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