

## CASE REPORT

### Papillary carcinoma arising in a thyroglossal duct cyst

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#### Abstract

A 21-year-old lady was admitted with a one year history of painless swelling in the neck. The clinical features and radiological findings suggested a thyroglossal duct cyst. Histology of the excised duct cyst showed papillary carcinoma. Ultrasound examination of the thyroid gland was normal. The patient is on regular follow-up and is well two years following surgery.

*Key words:* Thyroglossal cyst, carcinoma, papillary

#### INTRODUCTION

Thyroglossal duct cyst is a common developmental anomaly of the thyroid gland. However, carcinoma rarely arises within the cyst' and so far just over 100 cases have been reported in the English literature.<sup>2,3</sup> We report a second such case of carcinoma arising in the thyroglossal duct diagnosed in this Medical Centre within the last 2 years.<sup>4</sup>

#### CASE REPORT

A 21-year-old female college student presented with a one-year history of painless mid-line neck swelling. The size of the swelling had not changed and she was otherwise asymptomatic. Clinical examination revealed a firm, non-tender mobile mass with smooth surface measuring 1.5 x 2 cm, situated just anterior to the hyoid bone. The thyroid gland was not enlarged. No other abnormalities were noted. A clinical diagnosis of thyroglossal duct cyst was made. A Technetium-99m Thyroid Scintigraphy done showed a non-toxic multinodular goitre in evolution and a non-functioning thyroglossal duct cyst. The cyst was removed *in-toto* along with the tract.

#### Pathology

The excised specimen consisted of a greyish-white mass, measuring 2.0 x 1.5 x 1cm (Fig 1). Sectioning revealed a partly solid and partly cystic lesion containing tan coloured jelly-like material. Histological sections of the nodule

showed remnants of thyroglossal duct lined partly by cuboidal epithelium (Fig.2) and partly by papillary structures with fibrovascular cores lined by tall columnar cells (Fig.3). The adjacent fibrous stroma revealed closely packed follicles lined by cells with optically clear nuclei and nuclear grooving. Psammoma bodies were noted in areas. (Fig. 4)

#### Further management of the patient

Following the diagnosis of papillary carcinoma, a computerised tomographic scan and ultrasound of the thyroid gland were performed and it revealed a normal thyroid gland. She was followed up closely with a regular ultrasound of her thyroid gland and it has been normal, two years following surgery.

#### DISCUSSION

Remnants of thyroglossal duct are estimated to be present in 7 percent of the population. They are among the most common of congenital lesions in the neck.<sup>5</sup> Malignant change in the thyroglossal duct is uncommon. Only around 100 cases have been described in the English literature.<sup>6</sup> The presence of a malignant focus in the thyroid gland has been observed in 11-30% of cases.<sup>2,6</sup> Clinically, they may be indistinguishable from benign thyroglossal duct cysts.<sup>2</sup> However, if the lesion in the neck is hard, fixed or irregular, malignancy should be considered.<sup>7</sup> The advent of fine needle aspiration cytology has made pre-operative diagnosis of carcinoma in thyroglossal

cyst possible.<sup>4,8</sup> Histologically, papillary carcinoma is the most common type of malignant tumour seen in thyroglossal cyst,<sup>2,6</sup> as in the present case. However, other malignancies such as squamous cell carcinoma and follicular carcinomas may be seen on rare occasions.<sup>2</sup>

Removal of the duct by the *Sistrunk* procedure is recommended for non-metastatic carcinoma while neck dissection usually in the form of "berry picking" is required in the presence of lymph node metastasis. Management protocols have been varied and controversial. Kennedy *et al.*<sup>9</sup> recommended a total thyroidectomy for all patients with a carcinoma in a thyroglossal duct, except for those with a microscopic focus of a

papillary carcinoma without cyst wall invasion or medically high risk patients. However others,<sup>2,3,10</sup> suggest no further treatment if carcinoma is found incidentally after operation and no other lesions are noted during the surgery. Thyroidectomy is done, if a mass or a nodule in the thyroid gland is detected clinically or by imaging techniques. In our case, ultrasound of the thyroid gland done at one and two years following the surgery did not show any abnormality. However due to the prolonged course of papillary carcinoma (20 years or more), a long term follow-up is required.<sup>2</sup> The patient has been advised to return for regular check-up at yearly intervals.

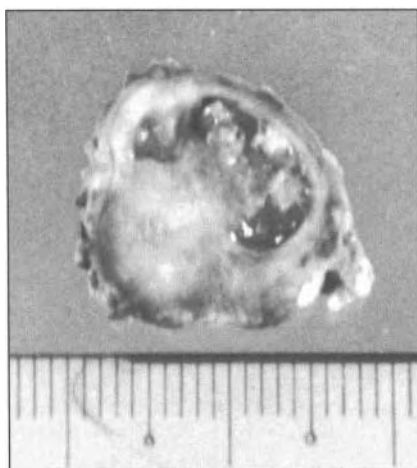


FIG.1: Partly solid and partly cystic thyroid nodule

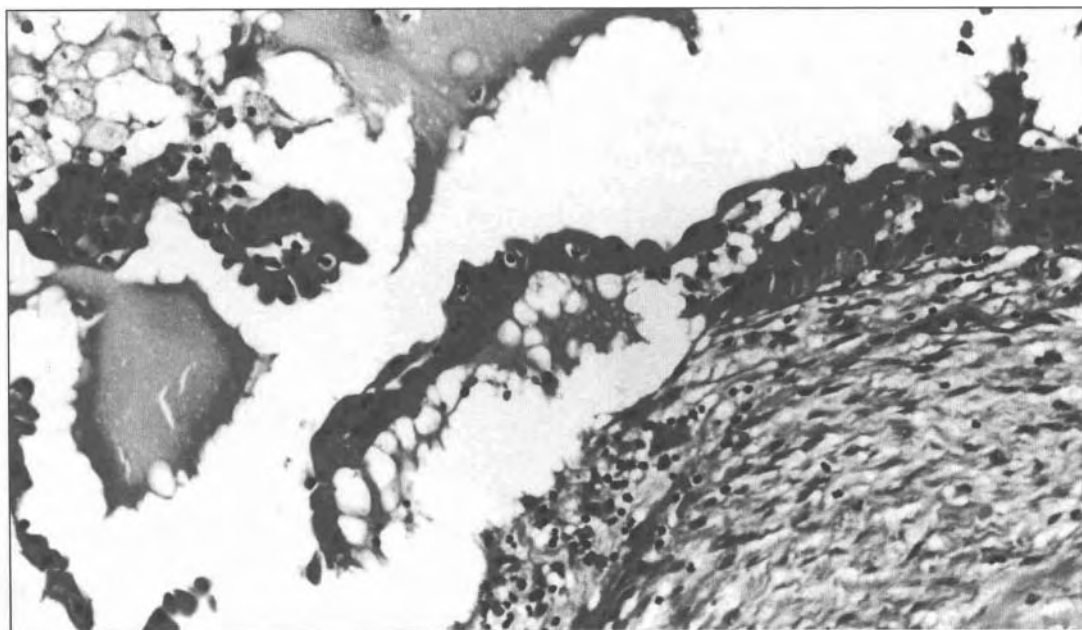
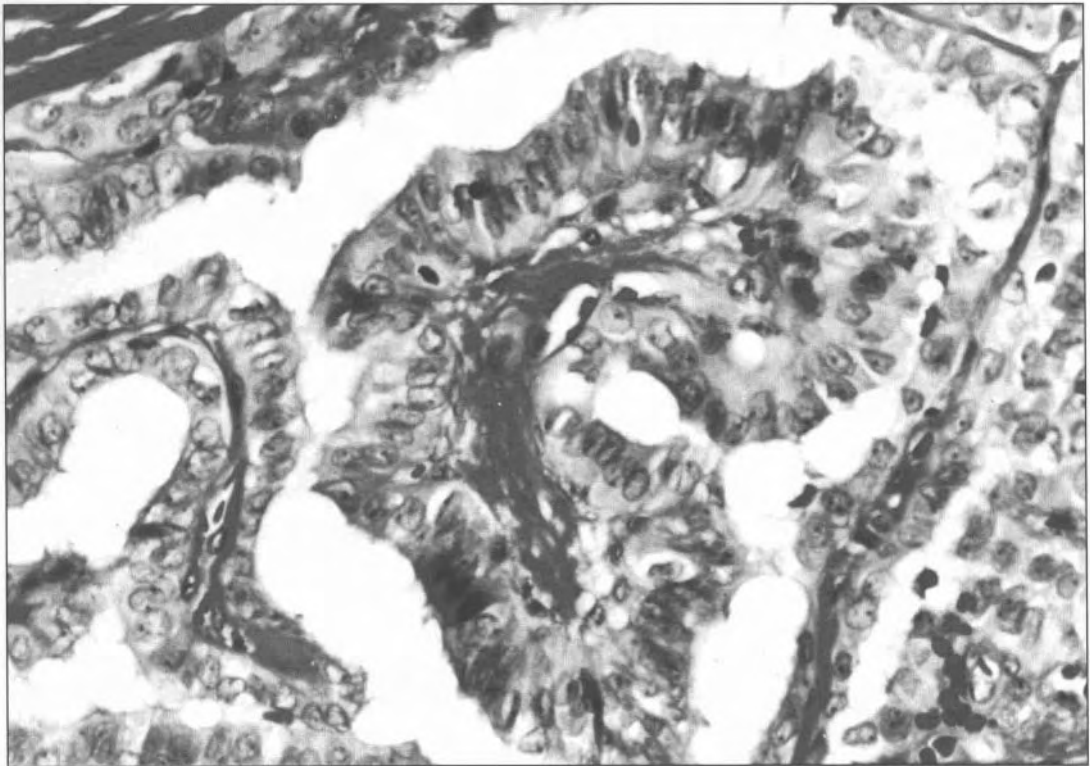
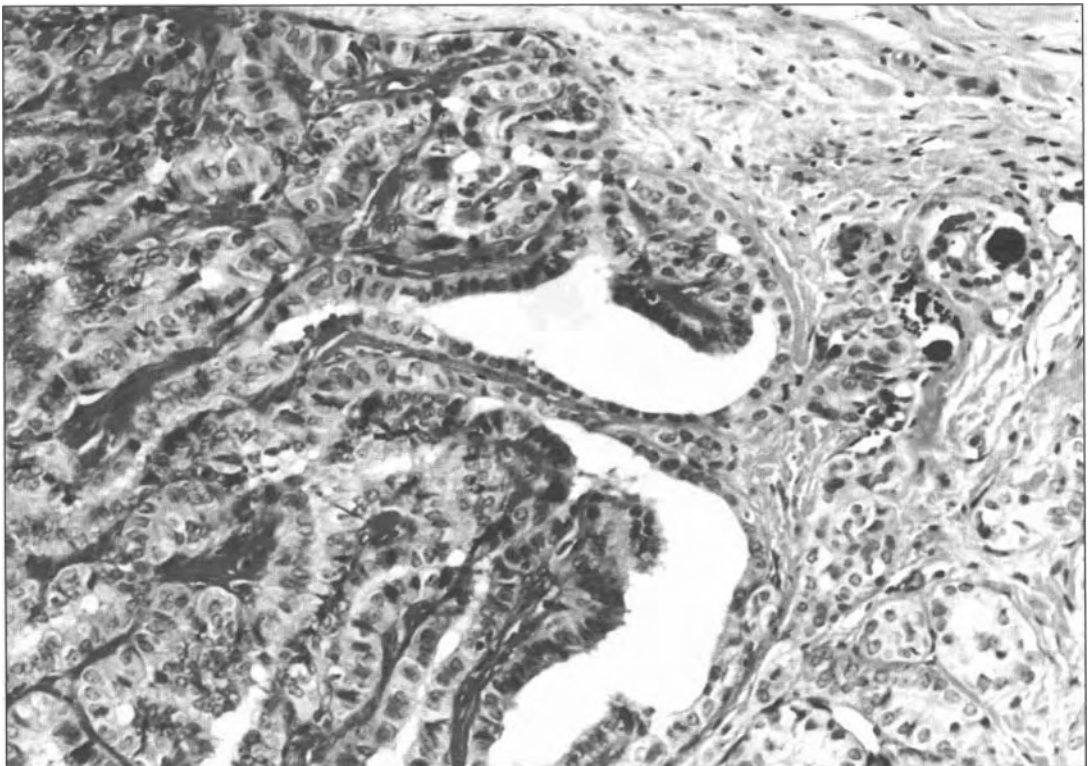


FIG.2: Thyroglossal cyst, focally lined by cuboidal epithelium. H&E x 200



**FIG. 3:** Cyst lined by papillary processes with fibrovascular cores. H&E x 800



**FIG. 4:** Papillary tumour in the cyst wall with psammoma bodies. H&E x 200

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