

# CASE REPORT

## A rare case of thyroid carcinoma in a 14-year-old female patient

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### Abstract

The incidence of thyroid and the prevalence of follicular carcinoma is rare in childhood and adolescents; however, it is considered as the second most common pediatric thyroid malignancy. Vascular invasion, distant metastasis, and tumor size greater than 4 cm are among the factors leading to total thyroidectomy followed by radioactive iodine therapy. The tumor size of the case in this study was 4.8 cm; as a result, total thyroidectomy was performed. The incidence of injury to the recurrent laryngeal in children is 0-40% due to its small size compared to that of adults. Furthermore, one of the prevalent complications of this operation is hypocalcaemia which is observed in 0-30% of the patients. None of these complications were present in the case. According to the author's experience, any swollen body in the neck should be considered important even if the incidence of a cancer is rare.

**Key words:** Adenocarcinoma, Follicular, Surgery, Thyroid Neoplasms

### Introduction

Thyroid surgery is performed on benign and malignant cases. Thyroid carcinoma is a rare disease in children and teenagers and it accounts for 1.5% to 3 % of all carcinomas in this age group in the USA and Europe (1). Papillary carcinoma comprises 90% of all thyroid cancers followed by thyroid follicular carcinoma with the prevalence of 6%. The incidence rate of thyroid cancer in people under 20 or younger is one in per 100,000 population in Japan (2). We herein, report a case of an adolescent who had thyroid carcinoma for the last 2 months.

### Cases

The patient was a 14-year-old female who had an enlarged neck mass for the last two months. She did not have any risk factors, such as family history and a previous history of head and neck radiation for this disease. According to the interpretation of the endocrine test results, she had euthyroid. The findings of needle aspiration

cytology and the pathology showed a tumor which was diagnosed as follicular carcinoma.

The ultrasound depicted 51×31mm cystic lesions with a bulky mass occupying the left lobe and developing to isthmus. Moreover, the right lobe dimension was measured as 38×9 mm and the parenchymal echo patterns were coarse. A 47×29mm tumoral lesion was observed in the left lobe with sharp edges and homogeneous echo.

A transverse incision of the neck was made, the strap muscles were pulled over and recurrent laryngeal nerve was explored. Total thyroidectomy was performed; however, the parathyroid was left intact. The patient was checked in terms of nerve and calcemia after the operation, and they were all reported to be in normal conditions.

### Discussion

Although the incidence of thyroid carcinoma, especially follicular carcinoma in teenagers is rare, it is considered the second most common pediatric



thyroid carcinoma (3). According to the latest studies, the prevalence of malignant thyroid nodules in teenagers is more than that of adults (25% vs. 5%) (4).

Follicular carcinoma is more aggressive; therefore, the time factor is more significant regarding the decreasing of the complications and metastases. In a study conducted on a series of 65 cases, the incidence of thyroid carcinoma in females was reported as 75% (5). The reported case in the present study was also a female.

There are a number of risk factors for juvenile thyroid cancer, including the family history, and previous radiation exposure (6), of these factors, none were observed in this case. The mean age of pediatric thyroid carcinoma was 16 according to the latest studies (7), whereas the mean age of the case in the present study is 14 with 2 months of history. There are some determining factors leading to total thyroidectomy and radioactive iodine therapy, including vascular invasion, distant metastasis, and tumor size greater than 4 cm (8).

As in this case, the tumor size was 4.8 cm, the total thyroidectomy was performed. Thyroid glands were observed to have normal functions. The volumes of related special hormones for triiodothyronine, thyroxine, and thyroid-stimulating hormone were obtained as 152.8 ng/dl, 6.3 micg/dl, and 2.90 mIU/ml, respectively.

The incidence of injury to the recurrent laryngeal in children is 0-40% due to its small size compared to that of adults (9). Moreover, one of the prevalent complications of this operation is hypocalcaemia which is observed in 0-30% of the patients. None of these complications were present in this case.

## Conclusions

The incidence of thyroid carcinoma in the teenagers is rare; however, this disease tends to be more aggressive in children compared to adults. Therefore, timely diagnosis and treatment is essential. According to the author's experience, any swollen body in the neck should be considered important even if the incidence of a cancer is rare.

## Conflict of Interest

There is no conflict of interests to be declared.

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