

A Report About a 23-year-old Young Mother Suffering From Rare Insular Thyroid Carcinoma

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Case report

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Abstract

Background

Insular carcinoma of thyroid (ICT) is a rare malignant tumor with poor differentiation of the thyroid , most patients are middle-aged and elderly women. Here is a report of a case involving a young woman suffering from insular thyroid carcinoma.

Case report

This report is about a 23-year-old young mother who already has three children of hers. she accidentally discovered a left neck mass with slight pain from local compression about half a year ago and did not seek medical treatment. She came to the hospital this time because the neck mass recently increased rapidly and she felt pressure on the trachea, affecting swallowing. Ultrasonography showed that the maximum diameter of the hypoechoic nodules was 61*46mm in the left and no lymph nodes enlargement were seen on both sides.The patient had a partial left thyroidectomy and histopathological results revealed ICT. Therefore, she completed total thyroidectomy and cervical lymph node dissection. The postoperative process was relatively smooth and the patient was successfully discharged.

Conclusion

Not all patients with insular thyroid carcinoma have similar imaging findings, so Fine Needle Aspiration Cytology(FNAC)pathological diagnosis is necessary before surgery.

Background

Insular thyroid carcinoma is a rare thyroid malignant tumor first described by Carcangiu [1] in 1984. It is an independent type of thyroid cancer and its biological behavior is between well-differentiated and anaplastic thyroid cancer. The condition is commonly seen in women between 46–52 years old and more than 50% of them are over 50 years old, younger patients are less commonly affected^[2]. It is generally believed that insular thyroid carcinoma originates from thyroid follicular cells, but Lam [3] suggests that that well-differentiated cancer may gradually progress to insular thyroid carcinoma. Imaging manifested as progressive growth, irregular substantial mass, radionuclide scans often shows cold nodules, CT and B-ultrasound examination reveals calcified nodules [4]. Ultrasound guided fine needle aspiration cytology (FNAC) is one of the important methods to obtain pathological diagnosis.The most common early clinical sign is a neck mass, as the mass enlarge, difficulty in swallowing and breathing may occur but it generally does not cause hoarseness and most patients have normal thyroid function. Total thyroidectomy and neck dissection for lymph node metastases is the main treatment, and ¹³¹I can be used after surgery.

Insular thyroid carcinoma patients mainly die of distant metastasis and the overall survival rate is better than anaplastic cancer [5].At present, there are few reports about this diseases. Here we report a rare case

of insular thyroid carcinoma on young woman and hope to help improve the clinical diagnosis and treatment of the disease in the future. The diagnosis of this disease meets the diagnostic criteria of Turin [6].

Case Report

A 23-year-old young mother unintentionally found a left neck mass six months ago. Before admission, the patient felt that the neck mass rapidly increased and there was slight pain in local compression, but no hoarseness or sore throat. The patient's physical condition is normal, without any relevant medical history, no history of exposure to radioactive substances, and no bad habits such as smoking or drinking. Ultrasound showed low echo nodes in the left thyroid, with a maximum diameter of 61*46 mm and no enlarged lymph nodes were seen on both sides (Fig. 1).

A further examination of enhanced CT was followed, a large and slightly low-density mass of the left thyroid was seen. The mass reached down to the chest cavity, pressing forward the anterior cervical muscles which invaded the thyroid isthmus and the right lobe, moreover, the tracheoesophageal groove and the trachea were also included. The lump was compressed and moved to the right. The enhanced scan was continued, then uneven and high enhanced areas were visible, but the boundary of the mass was still clear and no obvious enlarged lymph nodes were seen around it (Fig. 2).

The patient first underwent partial left thyroidectomy, histopathology showed that the tumor cells were trabecular, adenoid, with small nuclei, curled, and with small nuclei, increased mitotic division, lacking the nuclear features of papillary thyroid carcinoma. The immunohistochemistry results showed that TTF1+, P53 about 80%+, Ki67 about 30%+, BCL2+, CK+, PAX8+, CEA -, Calcitonin-, CgA-, Syn-, CT-, TG- (Fig. 3).

Because of the results of tissue immunohistochemistry TTF1+, PAX8+, CEA -, Calcitonin-, medullary thyroid carcinoma and metastatic carcinoma could be excluded and poorly differentiated Insular thyroid carcinoma was diagnosed basing on the Turin criteria. Considering that the patient was young and the case was rare, our institution invited the Cleveland clinic in the United States, to have a remote pathology consultation to further confirm the diagnosis. Subsequently, Total thyroidectomy and neck dissection for lymph node was performed (Fig. 4). The pathological results of the remaining tissues showed no tumor invasion and no lymph node metastasis. The patient was discharged from the hospital and referred to the oncology department for further treatment. Re-examination of cervical CT at 8 months after operation showed no obvious recurrence and metastasis.

Discussion

In 1983 Sakamoto [7] proposed that insular thyroid carcinoma was a subtype of poorly differentiated thyroid cancer. The biological behavior of its cancer cells is more aggressive than follicular thyroid cancer and papillary thyroid cancer, early involvement of adjacent lymph nodes may occur and the tumor recurrence rate is high^[8]. Total thyroidectomy and cervical lymph node dissection is the first choice for

treatment. Isotope ^{131}I therapy may help to control tumor recurrence but is not routine treatment for PDTC [9]. Before the operation, the patient's ultrasound and neck enhanced CT showed a clear mass on the left border of the thyroid gland and no surrounding enlarged lymph nodes and calcifications. There is a slight difference from previous reports of related diseases. There was a deficiency during the treatment process, because the patient was not diagnosed before the operation, which led to the second operation. At the same time, we are reminded not to completely rely on imaging examination and ignore pathological examination. After all, fine needle aspiration cytology (FNAC) has been widely used to diagnose thyroid lesions [10–11].

Insular thyroid carcinoma is a rare malignant thyroid tumor with a poor prognosis. Although this is not the first reported case of this disease, it is hoped that this case will increase the number of young patients suffering from insular thyroid carcinoma, and provide an empirical reference for clinical diagnosis and treatment of that.

Declarations

Acknowledgements

Not applicable

Ethics approval and consent to participate

The study was approved by the Research Ethics Committee of Shenzhen Longgang District People's Hospital. Written informed consent and any image information was obtained from the patient to publish the case report.

Consent for publication

Consent for publication was obtained from the patient described in this article.

Availability of data and materials

The authors declare that all data and materials of the article are available to all readers of our article.

Conflict of interest

There is no conflict of interest to be declared.

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Author contribution

Zhongmin liu: Surgeon performed the operation and follow up. Haibin chen: writing the manuscript and follow up.xiaoyan liang and rui wu collected the patient's clinical data and information. All authors read and approved the final manuscript.

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Figures

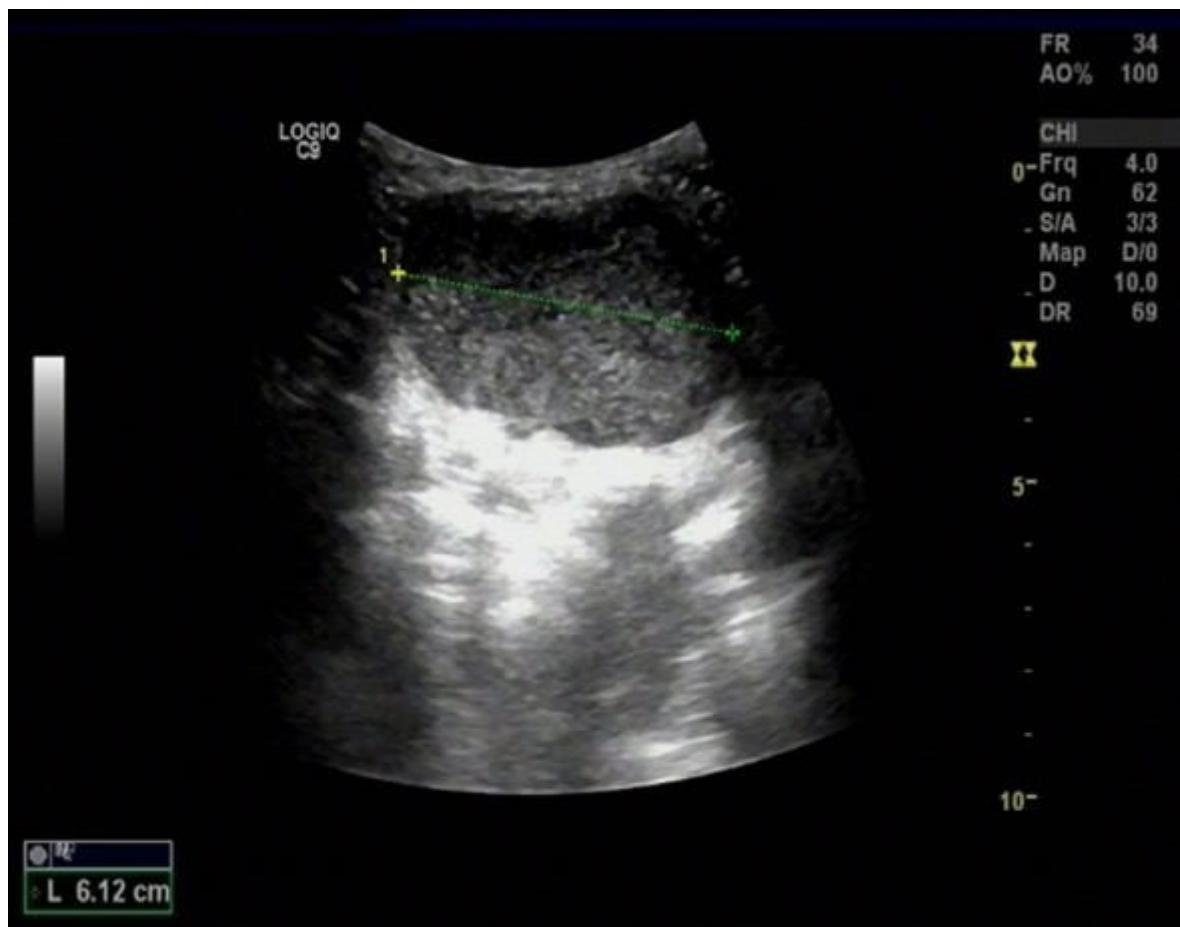


Figure 1

Preoperative ultrasound

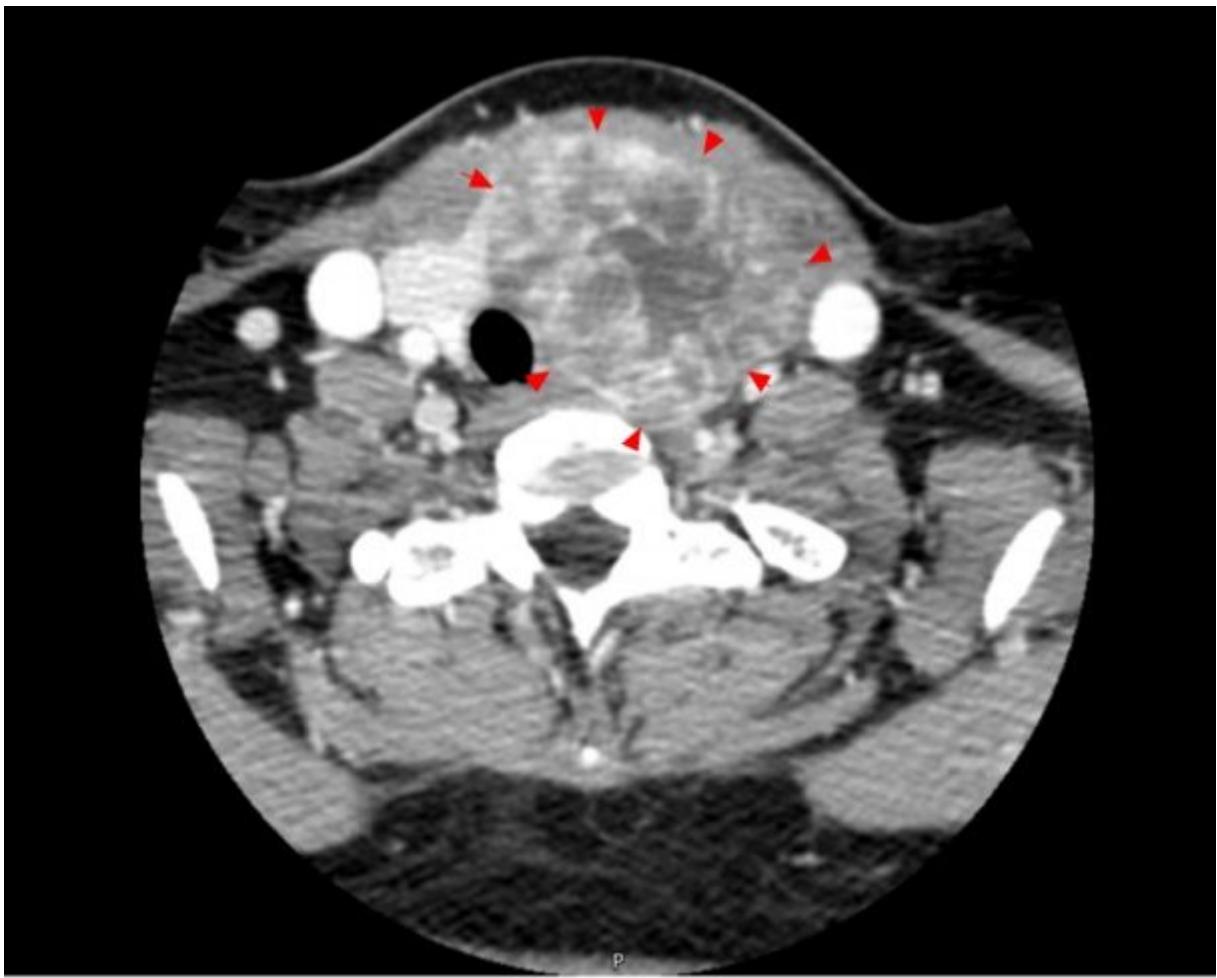


Figure 2

Preoperative CT scan

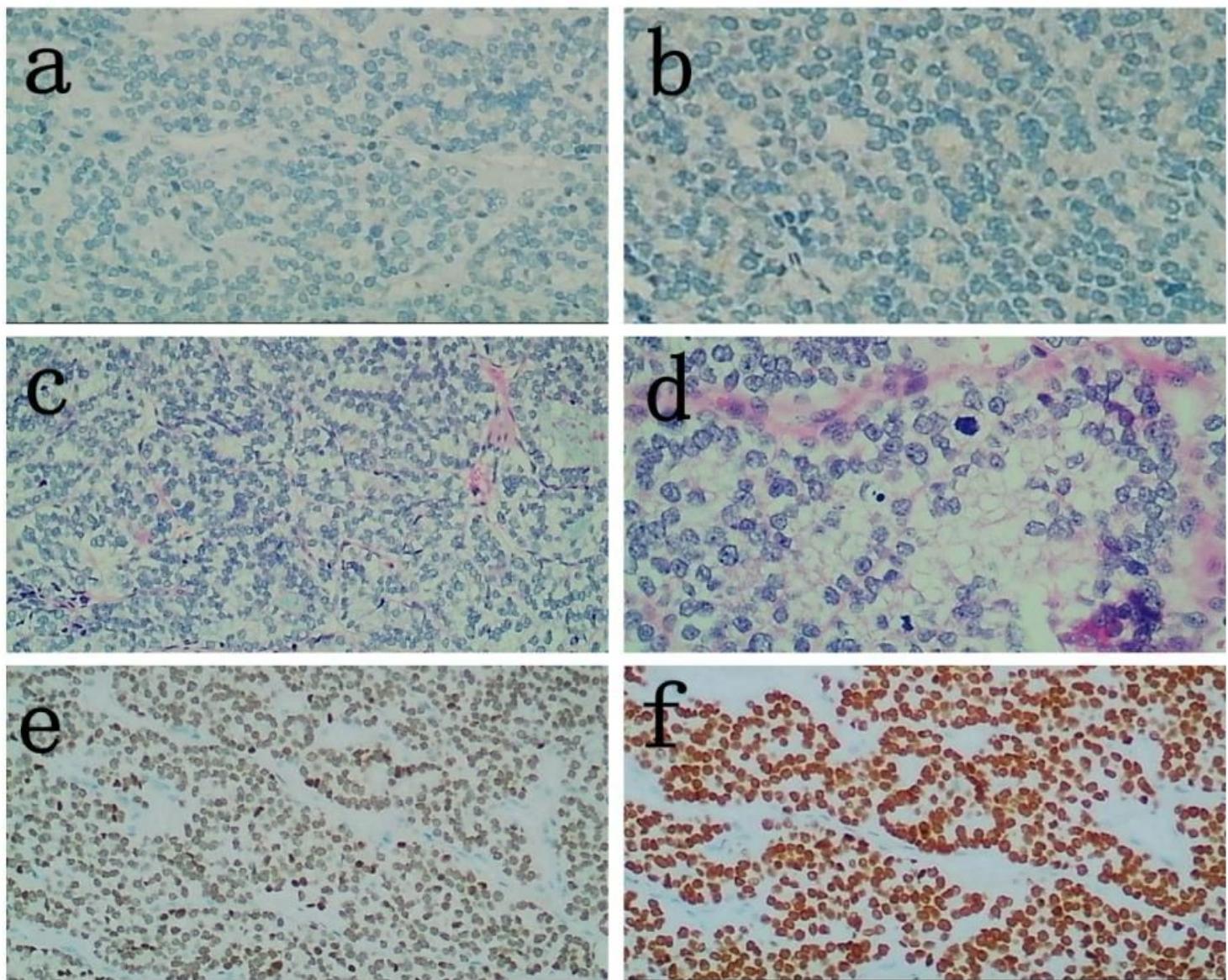


Figure 3

Immunohistochemical results of left thyroid tumor and surrounding tissue. a.Calcitonin- b.CEA - c. HE1
d.HE2 e.PAX8+ f.TTF1+

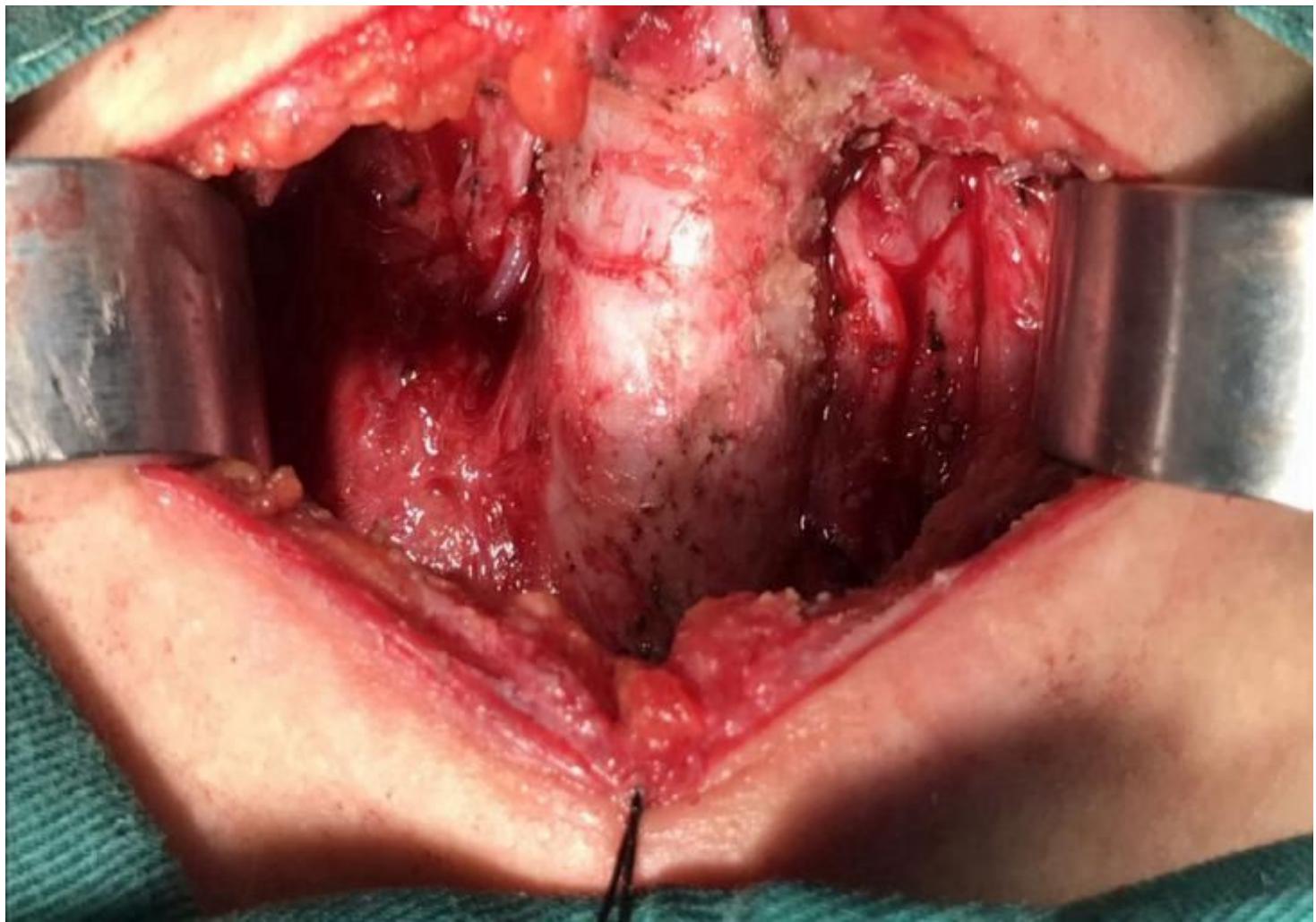


Figure 4

total thyroidectomy and cervical lymph node dissection original picture after operation