



Giant Anaplastic Thyroid Carcinoma Arising in a Neglected Goiter: A Case Report

Orhan Veli Ozkan^{1*}, Orhan Yagmurkaya¹, Omer Yalkin¹, Fehmi Celebi¹, Yasemin Gunduz², Zeynep Kahyaoglu³, Ismail Zengin¹ and Fatih Altintoprak¹

¹Department of General Surgery, Sakarya University, Turkey

²Department of Radiology, Sakarya University, Turkey

³Department of Pathology, Sakarya University, Turkey

Abstract

Introduction: Diffusely enlarged giant thyroid glands are becoming increasingly infrequent. However, in some geographical areas they are still relatively common. Anaplastic thyroid carcinoma is rare but is an aggressive and lethal malignancy. Since it is associated with severe complications, surgical treatment of giant goiter requires a high level of expertise.

Material and Methods: Herein, a case of giant goiter in a 71-year-old female patient, diagnosed 40 years ago and gradually progressed in size has been presented. Although she was informed about the biopsy and consequent surgery indication years ago, she refused to undergo any surgical intervention. She was suffering of a huge neck swelling with a sense of tightness and heaviness that interfered with her neck movements. Computed tomography imaging studies revealed a giant goiter deviating the trachea to the right and lymphadenopathies appearing as metastatic lesions in lungs and mediastinum respectively.

Result: Total thyroidectomy was performed. The surgical specimen weighed 2.5 kg, had a right lobe 8.5 x 5 x 3.5 cm in size and a left lobe 18.5 x 17.5 x 10 cm in size. The pathological examination reported the specimen as anaplastic thyroid carcinoma.

Conclusion: Thyroid diseases associated with goiter should be surgically treated without a delay since those cases could be complicated with malignant transformation in the gland and considerably increased surgical complication rates due to advanced age and increased size of goiter.

Keywords: Giant goiter; Delayed surgical treatment; Malignant transformation

Introduction

Anaplastic thyroid carcinoma (ATC) is one of the most aggressive and lethal solid tumors affecting humans, with an incidence of 1–2 per million. Its rareness and very rapid progression are the most important challenges for the development of effective treatments [1]. Although the etiology of this malignancy is unclear, simultaneous or immediately prior thyroid disease, such as benign or well-differentiated thyroid cancers, may be a risk factor for ATC [2-4]. Diffusely enlarged giant thyroid glands are becoming increasingly infrequent. However, they remain relatively common in some geographical areas [5]. Here, we present a case report describing a giant goiter that was diagnosed 40 years ago but became excessively enlarged and subsequently underwent malignant transformation due to a lack of surgical treatment.

Case Presentation

Herein, a case of giant goiter in a 71-year-old female patient, diagnosed 40 years ago and gradually progressed in size has been presented. Although she was informed about the biopsy and consequent surgery indication years ago, she refused to undergo any surgical intervention. The patient had no concomitant morbidity and no history of any medical and surgical disease. She was suffering of a huge neck swelling with a sense of tightness and heaviness that interfered with her neck movements (Figure 1A and 1B). She was confirmed to be in euthyroid status. Cervical and thorax computed tomography imaging studies revealed a giant goiter deviating the trachea to the right and lymphadenopathies appearing as metastatic lesions in lungs and mediastinum respectively (Figure 2A-2C). The patient underwent surgery with a 20 cm length elliptic incision and total thyroidectomy was performed. The surgical specimen weighed 2.5 kg, had a right lobe 8.5 x 5 x 3.5

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*Correspondence:

Orhan Veli Ozkan, Department of General Surgery, Sakarya University, Adnan Menderes Caddesi, Saglik Sokak No:195, 54 100 Sakarya, Turkey, Tel: 90 532 341 74 40; Fax: 0(264) 255 21 05;

E-mail: veliorhan@hotmail.com

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Figure 1A and 1B: External view of the neck of the patient.



Figure 2A-2C: Cervical and thorax computed tomography imaging studies revealed a giant goiter deviating the trachea to the right and lymphadenopathies appearing as metastatic lesions in lungs and mediastinum (White arrows).



Figure 3: Specimen of the thyroid.

cm in size and a left lobe 18.5 x 17.5 x 10 cm in size (Figure 3). The pathological examination reported the specimen as anaplastic thyroid carcinoma (Figure 4A-4C). The patient was kept at an intensive care units for 2 days, the postoperative course was uneventful and the patient was discharged on sixth postoperative day. Subsequent total thyroidectomy, chemotherapy was recommended but the patient declined it. The patient died six months later from recurrence in lungs.

Discussion

More than 90% of primary thyroid cancers are well-differentiated tumors with a high survival rate. However, ATC ranks among the most aggressive thyroid malignancies among all human malignancies and has a very high mortality and morbidity rate. ATC comprises 2% of all thyroid cancers but is accountable for 14–39% of deaths due to thyroid cancer areas [6,7]. Although it may be observed in

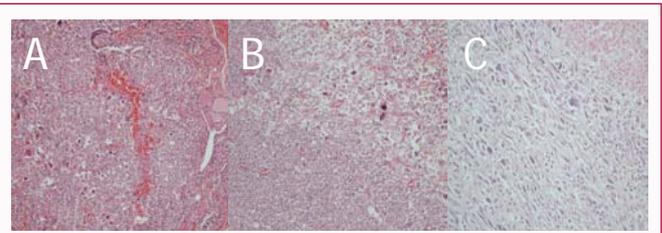


Figure 4A-4C: The histopathological findings. The surgical specimen shows features of anaplastic thyroid carcinoma.

all age groups, it is particularly problematic at advanced ages and affects women more often than men, at a ratio of 2:1 areas [8]. The physiopathogenesis of ATC is not yet clear. Most ATCs have been shown to derive from follicular cells [9], and the occurrence of ATC in cases with well-differentiated thyroid cancer, adenoma, or nodular goiter supports this assumption. ATC is twice as common in endemic goiter areas, and the use of prophylactic iodine may reduce the risk of ATC [10,11]. In our case, the patient rejected surgical treatment because of a fear of surgery; thus, the goiter that was diagnosed 40 years ago remained untreated. This delay led to the malignant transformation and excessive enlargement of the goiter. Over the last two years in particular, the rate of enlargement accelerated, leading to an increase in complaints by the patient. These were considered to be associated with the rapid enlargement due to malignancy. ATC presents with local and systemic clinical symptoms. The onset of symptoms usually occurs within one month. The first symptom is a rapidly enlarged neck mass, seen in 97% of patients [12]. Neck pain due to intratumoral bleeding or lymph node metastases at the neck, dysphagia due to esophageal compression, and dyspnea and stridor due to tracheal compression are other local symptoms. Systemic symptoms are associated with metastasis, which has already occurred at the time of diagnosis in 50% of patients. This observation has led to the opinion that metastatic spread is hematogenous. Systemic symptoms include anorexia, weight loss, dyspnea due to lung metastasis, bone pain due to bone metastasis, and neurological symptoms due to brain metastasis [11]. The distribution of distant metastasis is as follows: 80% lung, 6–16% bone, and 5–13% brain [13]. In our case, compression signs that had been present for a long time progressively increased over the last two years. Difficulty in breathing due to both tracheal compression and lung metastasis became more prominent, and neck mobility became limited because of the excessively enlarged goiter. The clinical course and prognosis of ATC vary due to multiple factors. The most significant prognostic factor is patient age and the extent of local and systemic involvement at the time of diagnosis [14]. Prognosis is poor in patients with systemic metastasis and advanced age. Other prognostic factors include whether the tumor size exceeds 5 cm, sex, and respectability at the time of diagnosis, and lymph node metastasis [15]. The mean survival in ATC is eight months for patients with local metastasis and three months for patients with systemic metastasis [15]. Survival is longer in patients younger than 60 years, those with only intrathyroidal cancer, and those receiving combined chemotherapy and radiotherapy following surgery [12]. The primary therapeutic approach is surgical resection. Complete resection is considered among the prognostic factors in several studies [16–18]. Even if resection is not complete, surgery plays a significant in palliation. Chemotherapy and radiotherapy following partial resection may delay airway obstruction for several months [19]. Resection increases quality of life, and though it has no impact on prognosis, it prevents death from suffocation [20]. In our patient,

symptoms improved during the postoperative period, and the patient was made comfortable. Adjuvant treatment was not used because of patient rejection. The patient died six months later due to lung metastasis. Goiters generally do not become greatly enlarged because they can be diagnosed and treated early. However, in some areas giant goiters are rarely observed [5]. In these cases, meticulous mapping should be undertaken to define the extent of the thyroid tissue and its association with the surrounding organs by imaging methods such as computerized tomography. To prevent intraoperative complications, the intervention of experienced staff is important, starting from the intubation of the patient for anesthesia. In our patient, after appropriate preparations for the operation had been made, there were no complications such as bleeding due to the thyroid surgery, injury of the laryngeal nerve, or removal of the parathyroid glands.

Conclusion

Risk factors for anaplastic thyroid carcinoma are not well understood. In a study was demonstrated that 25% of the anaplastic thyroid carcinoma patients had a prior history of thyroid goiter. Thyroid diseases associated with goiter should be surgically treated without a delay since those cases could be complicated with malignant transformation in the gland and considerably increased surgical complication rates due to advanced age and increased size of goiter.

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