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Case report and considerations on thyroid surgery in geriatric population

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A surgical challenge: resection of giant follicular thyroid carcinoma in a 92-year-old woman. Case report and considerations on thyroid surgery in geriatric population

The aim of this paper is to present the clinical features and the diagnostic and surgical management of a 92-year-old patient with giant goiter. She was admitted to our Emergency Department for evaluation of a cervical mass increased in volume over the past five years. She complained of mild dyspnea pressure symptoms in the neck. Neck and mediastinal noncontrast computed tomography showed a huge goiter with a clear prominent right thyroid lobe, with external compression of the trachea. Consequently, she underwent a right thyroid lobectomy. Patient followed up closely; she is asymptomatic with no evidence of recurrence on RAI scan at the end of six months follow-up. In conclusion, the treatment choice for elderly patients with FTC should be based on medical assessments; in these patients, especially those with larger goiter and compressive symptoms, surgery is the first choice.

KEY WORDS: Elderly, Emergency Surgery, Follow up, Thyroid carcinoma, Thyroid lobectomy

Introduction

Follicular thyroid carcinoma (FTC) is a well-differentiated thyroid cancer (DTC) and is the second most common thyroid neoplasm after papillary thyroid carcinoma (PTC), making up about 10 to up to 5% of all thyroid neoplasms [1-3]. The incidence of FTC is three times higher in women than in men and it occurs in a slightly older age group than PTC does 4; it is also less common in children, and it occurs rarely after radiation exposure 5,6. Lymph node involvement is uncommon; FTC invades vascular structure within the thyroid gland, and distant metastases are more common than in PTC [7]. The 5-year survival rate for localized and regional FTC is about 95%, while for metastatic FTC is about 64% [8]. Several authors reported that FTC showed aggressive behaviour in the elderly, and delayed diagnosis is the major reason to explain the worse prognosis in elderly patients, making FTC a challenging scenario to manage [9,10].
This article presents the clinical features and the surgical treatment of an exceptional giant FTC in a 92-year-old woman and offers considerations about elective thyroid surgery in geriatric population.

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Case Presentation

A 92-year-old woman was admitted in September 2020 to our Emergency Department for evaluation of a cer-

vical mass increased in volume over the past five years (Fig. 1). She complained of mild dyspnea pressure symptoms in the neck, particularly swallowing difficulty both liquids and solids; the patient reported onset of symptoms one month earlier. She was affected by hypothyroidism and had previously declined surgery for enlarging goiter. Thyroid function tests were normal (thyrotropin 3.2 mU/ml, range 0.3-4.5 mU/ml) and thyroid autoantibodies were not detectable in serum. She was no an active smoker with no alcohol or drug use. Electrocardiogram and chest radiographs were negative, ad echocardiography showed a 50% ejection fraction. Pertinent physical examination revealed a clearly visible, enlarged, indolent nodular thyroid gland, especially of the right lobe. Neck and mediastinal non-contrast computed tomography showed a huge goiter with a clear prominent right thyroid lobe (16x14 mm), extending from the inferior maxillary angle to the manubrium, with external compression of the trachea (Fig. 2).

Consequently, concerning to patient's age and comorbidities, she underwent a right thyroid lobectomy; the macroscopic examination demonstrated a diffusely increased glandule where there was a nodule measuring 16.0 × 13.0 × 11.0 cm in the right thyroid lobe (Fig. 3). The histological examination revealed an FTC limited to the thyroid; margins of exeresis were free from

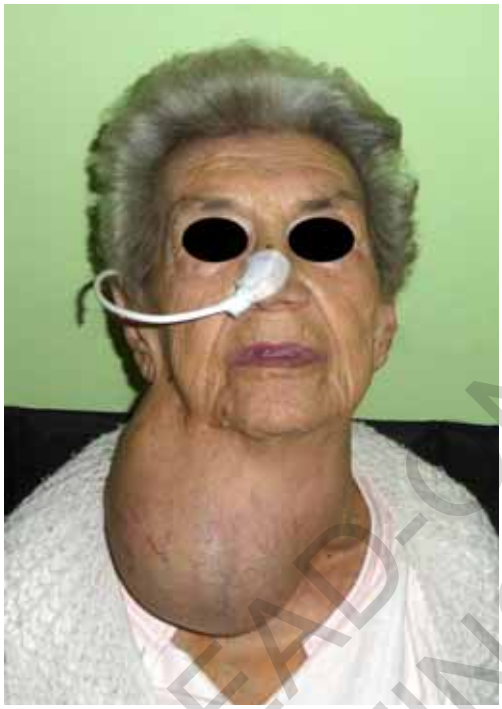


Fig. 1

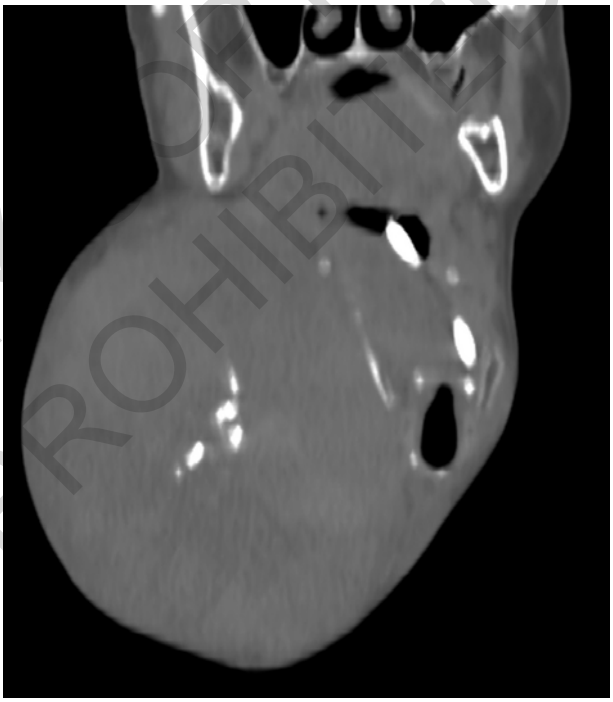
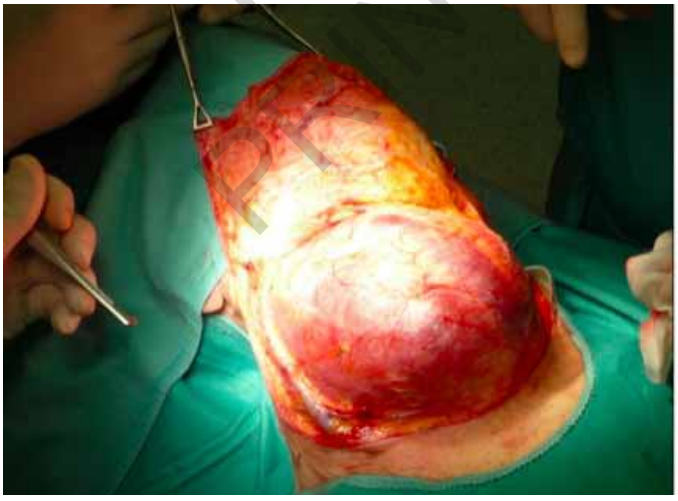


Fig. 2



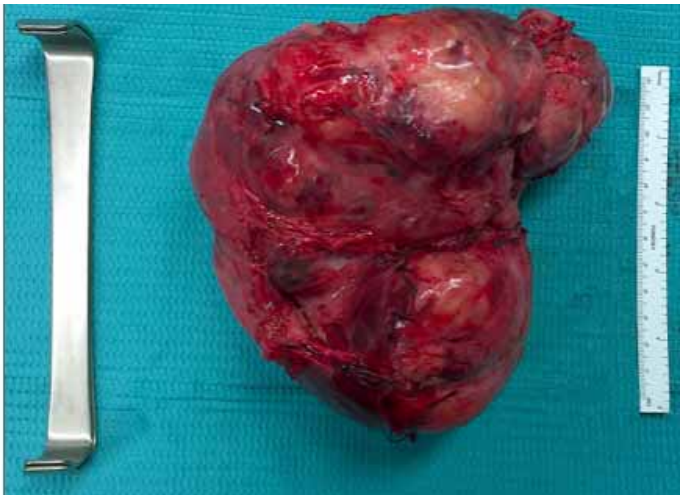


Fig. 3

neoplastic infiltration, and the remaining thyroid parenchyma showed multinodular hyperplasia with sclerosis and calcific areas. After surgery, she had a temporary palsy of recurrent laryngeal nerve which completely recovered. During hospitalization, she developed modest bilateral pleural effusion which regressed with medical therapy. She was discharged within ten days. The patient followed up closely, and after 1 month, radio-Iodine isotope-scan followed by Radioactive-iodine-131 (RAI-131) ablation with 100mCi dose was done. The p atient was monitored with serum thyroglobulin levels every third month; she is asymptomatic with no evidence of recurrence on RAI scan at the end of six months follow-up.

Discussion

Thyroid cancer is one of the most common tumors, and PTC and FTC are two major types of well-DTC and have an excellent prognosis 11; there has been an increasing incidence of these tumors due to the growth of PTC cases. It is actually a matter of debate which is the age cutoff range recognized as a poor prognostic factor. The indications for thyroid surgery have been continuously extended among elderly patients in the last 20 years; several studies reported that FTC is more aggressive in older patients, with extrathyroidal disease and distant metastases [8,10,12]. The American Joint Cancer Committee (AJCC) TNM staging system has incorporated a 45-years age cutoff as a major determinant of disease-specific survival (DSS) since 1983 13. Recently, a multicenter retrospective study showed that by moving the age cut point from 45 to 55 years, 17% of the patient population was downstaged to a lower risk category [14]. Some authors showed a correlation between worse prognosis and age 45 years or older [15,16], while other authors didn't observe a correlation between prognosis and age 45 years or 17.

Longheu et al analyzed results of surgical treatment for DTC in elderly patients, concluding that these tumors showed a worse prognosis in aging patients, due to a higher incidence of aggressive histotypes and to a significant diagnostic delay [18]; they also observed no higher perioperative mortality and morbidity in elder patients, concluding that age does not represent a crucial factor.

Vini et al. reported one of the largest case series of older patients with DTC (111 patients), in which the tumors appear to behave more aggressively, and to have a less favorable prognosis compared with younger adults [19]; in addition, they concluded that age could influence the possibility of locoregional recurrent and distant metastases, according to results reported by Girelli et al [20]. Despite older patients presented with more advanced disease than younger patients, they often receive less aggressive surgical and radioactive iodine treatment, without improved survival observed in younger patients treated by a more aggressive approach [21].

In Seybt et al opinion's [22] thyroid surgery in elderly patients is safe and no more dangerous than surgery in youthful patients, and these results are in accordance with those presented by Schwartz et al [23]. Before surgery, some authors suggest to perform an accurate preoperative workup, especially in patients with concomitant morbidity, to really assess long-term benefits of a surgical treatment [24].

Conclusion

In our experience, the treatment choice for elderly subjects with DTC, especially those with larger goiter and compressive symptoms, surgery should be the first choice. It could be provided in highly specialized centers, performed by skilled surgeons, and it can be suited to the patient morbidity, if necessary, but should not be deferred on the basis of the patient's age.

Riassunto

Lo scopo di questo lavoro è presentare le caratteristiche cliniche e la gestione diagnostica e chirurgica di una paziente di 92 anni con gozzo gigante. È stata ricoverata presso il nostro Pronto Soccorso per la valutazione di una massa cervicale aumentata di volume negli ultimi cinque anni. Si lamentava di lievi sintomi di pressione dispnea al collo. La tomografia computerizzata senza contrasto del collo e del mediastino mostrava un enorme gozzo con un lobo tiroideo destro evidente e prominente, con compressione esterna della trachea. Di conseguenza, è stata sottoposta a lobectomia tiroidea destra. La paziente è stata controllata nel follow up, è rimasta asintomatica senza evidenza di recidiva alla scansione RAI alla fine del follow-up di sei mesi. In conclusione, la scelta del trattamento per i pazienti anziani con FTC dovrebbe basarsi su valutazioni mediche; in questi pazienti, specialmente quelli con gozzo più ampio e sintomi compressivi, la chirurgia è la prima scelta.

References

1. 'Ceresini G, Corcione L, Michiara M, et al.: *Thyroid cancer incidence by histological type and related variants in a mildly iodine-deficient area of Northern Italy, 1998 to 2009.* Cancer, 2012; 118:5473–480.

2. Morris LGT, Sikora AG, Tosteson TD, et al.: *The increasing incidence of thyroid cancer: The influence of access to care.* Thyroid, 2013; 23:885–91.

3. Avenia N, Monacelli M, Sanguinetti A, et al.: *Therapeutic options in locally advanced thyroid carcinoma. Our experience.* Ann Ital Chir, 2012; 83(6):481-85.

4. Avenia N, Monacelli M, Sanguinetti A, et al.: *Therapeutic options in locally advanced thyroid carcinoma. Our experience.* Ann Ital Chir, 2012; 83(6):481-85.

5. Sabra MM, Dominguez JM, Grewal RK, et al.: *Clinical outcomes and molecular profile of differentiated thyroid cancers with radioiodine-avid distant metastases.* J Clin Endocrinol, 2013; 98:E829–E836.

6. Tuttle RM, Ball DW, Byrd D, et al.: *Thyroid carcinoma.* J Natl Compr Canc Netw, 2010; 8:1228-274.

7. Lin X, Zhu B, Liu Y, et al.: *Follicular thyroid carcinoma invades venous rather than lymphatic vessels.* Diagn Pathol, 2010; 5:8. Published 2010 Jan 22.

8. Vini L, Hyer SL, Marshall J, et al.: *Long-term results in elderly patients with differentiated thyroid carcinoma.* Cancer, 2003; 97:2736-742.

9. Rispoli C, Rocco N, Iannone L, et al.: *Developing guidelines in geriatric surgery: Role of the grade system.* BMC Geriatr, 2009; 9(suppl.1):A99.

10. vanTol KM, deVries EGE, Dullaart LP, et al.: *Differentiated thyroid carcinoma in the elderly.* Crit Rev Oncol Hematol, 2001; 38:79-91.

11. Sengul I, Sengul D: *Proposal of a novel terminology: Minimally invasive FNA and Thyroid minimally invasive FNA; MIFNA and Thyroid MIFNA.* Ann Ital Chir, 2021; 92:330-31.

12. Lin JD, Chao TC, Chen ST, et al.: *Characteristics of thyroid carcinomas in aging patients.* Eur J Clin Invest, 2000; 30:147-53

13. AJCC Cancer Staging Manual, In: Greene, F.L. editor. 8th ed. Springer-Verlag; 2018.

14. Machens A, Hauptmann S, Dralle H: *Prediction of lateral lymph node metastases in medullary thyroid cancer.* The British journal of surgery, 2008; 95(5):586-91.

15. Conzo G, Calò PG, Sinisi AA; et al: *Impact of prophylactic central compartment neck dissection on lo- coregional recurrence of differentiated thyroid cancer in clinically node-negative patients: A retrospective study of a large clinical series.* Surgery, 2014; 155:998-1005.

16. Kim TH, Lim JA, Ahn HY, et al.: *Tumor size and age predict the risk of malignancy in Hurtle cell neoplasm of the thyroid and can therefore guide the extent of initial thyroid surgery.* Thyroid, 2010; 20:1229-234.

17. Mendelson AA, Tamilia M, Rivera J, et al.: *Predictors of malignancy in preoperative nondiagnostic biopsies of the thyroid.* J Otolaryngol Head Neck Surg, 2009; 38:395-400.

18. Longheu A, Medas F, Pisano G, et al.: *Differentiated thyroid cancer in patients ≥ 75 years: Histopathological features and results of surgical treatment.* Int J Surg, 2016; 33 (Suppl 1):S159-63.

19. Vini L, Hyer SL, Marshall J, et al.: *Long-term results in elderly patients with differentiated thyroid carcinoma.* Cancer, 2003; 1;97(11):2736-42.

20. Girelli ME, Casara D, Rubello, et al.: *Differentiated thyroid cancer in the elderly: Disease outcome, therapeutic approach, and long-term results in a group of 314 patients.* J Endocrinol Invest, 1999; 22:45-46.

21. Park HS, Roman SA, Sosa JA: *Treatment patterns of aging Americans with differentiated thyroid cancer.* Cancer, 2010; 116:20-30.

22. Seybt MW, Khichi S, Terris DJ: *Geriatric thyroidectomy: safety of thyroid surgery in an aging population.* Arch Otolaryngol Head Neck Surg, 2009. 135(10):1041-423]

23. Schwartz N, Shpitzer T, Feinmesser R, et al:. *Thyroid surgery in the elderly.* Gerontology, 2013; 59(5):401-07.

24. Ng SH, Wong KP, Lang BH: *Thyroid surgery for elderly patients: Are they at increased operative risks?* J Thyroid Res. 2012, 2012:946276