

## Case Report: Multiple Nodular Thyroid

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### ABSTRACT

*Thyroid nodules are uneven and lumpy enlargements of the thyroid gland, with a prevalence of approximately 8% in the adult population and occurring more frequently in women. This case report aims to describe the evaluation and management of patients with multiple nodular thyroid. A case of a 36-year-old female patient who presented with a complaint of a neck lump that had been slowly enlarging for several months—from the size of a marble to that of a ping pong ball—is reported. The lump was palpable, solid, and painless, without symptoms of hyperthyroidism or obstruction. Physical examination revealed thyroid gland enlargement with a solid consistency. Complete blood count and HBsAg laboratory results were within normal limits. The patient was diagnosed with multiple nodular thyroid and underwent total thyroidectomy. The surgery was performed successfully without complications. Multiple nodular thyroid is generally benign but requires careful evaluation to rule out the possibility of malignancy. Definitive management through total thyroidectomy provided good outcomes in this case.*

**Keywords:** Multiple nodular thyroid, thyroid nodules, total thyroidectomy

### INTRODUCTION

The thyroid is the largest pure endocrine gland in the human body, located at the front of the neck (Goyal & Kumawat, 2025; Mnatsakanian & Al Khalili, 2023; Rao et al., 2023; Seiwert, 2024; Vatavu et al., 2024). It consists of two parts—the right and left lobes—and is shaped like a butterfly (Guo & Yang, 2025; Kinoshita & Arikawa, 2026; Marshall & de Nicéville, 2024). The thyroid can develop disorders involving changes in gland function or morphology. Based on its deformity, the thyroid is classified into two forms: diffuse and nodular. Diffuse refers to uniform gland enlargement, while nodular describes irregular enlargement of the gland characterized by lumps. The lumps in nodular cases may appear as single or multiple nodules.

Thyroid nodules have a prevalence of about 8% in the adult population and occur more commonly in women, with incidence rates approximately three to four times higher than in men (Dong et al., 2022; Mu et al., 2022; Tran & Davies, 2023; Zhu et al., 2022). The frequency of thyroid nodules tends to increase with age (over 50 years). In clinical practice, the prevalence of thyroid nodules detected through physical palpation is about 4%, through ultrasound examination 33% to 68%, and through autopsy around 50%. In the United States, approximately 275,000 new cases of thyroid nodules are reported annually, yet only about one in twenty palpated nodules is malignant, and the incidence of clinically diagnosed thyroid carcinoma is only 2–4 cases per 100,000 population per year.

Thyroid nodules are commonly observed in areas with iodine deficiency. Radiation exposure is considered one of the main risk factors, with thyroid nodules developing in about 2% of patients each year following radiation therapy. A retrospective study of patients with childhood Hodgkin's disease found that those who had undergone radiation therapy had a 27-fold higher risk of developing thyroid nodules compared to their siblings. Another study involving 119 cancer survivors revealed that patients who received combined radiation and chemotherapy had twice the risk of developing thyroid nodules compared to those who received chemotherapy alone.

Most thyroid nodules are asymptomatic and are detected incidentally during neck palpation. However, some patients may present with complaints of a visible neck lump that moves when swallowing. The common location of the lump is at the junction between the isthmus and lateral

lobe. If bleeding occurs within the lump, the patient may report sudden enlargement and pain. In benign cases, lumps generally have a smooth, soft texture with regular, distinct borders. Conversely, malignancy may be suspected if these characteristics change. Supporting diagnostic evaluations, including Thyroid Stimulating Hormone (TSH), free thyroxine (fT4), free triiodothyronine (fT3), ultrasound, and fine-needle biopsy, should be performed to determine whether a thyroid nodule is benign or malignant. Management of thyroid nodules is guided by biopsy results. In benign and asymptomatic euthyroid nodules, annual follow-up with ultrasound and TSH evaluation is recommended. Some benign nodules may require therapeutic interventions such as levothyroxine administration, radioiodine therapy, ethanol injection, or surgery, particularly in large nodules causing obstructive symptoms. For thyroid nodules with suspected malignancy, surgical treatment remains the recommended approach.

This case report aims to describe the clinical presentation, diagnostic evaluation, and surgical management of a patient with multiple nodular thyroid at Chasan Boesoirie Hospital. The findings are expected to enhance clinical understanding of multiple nodular thyroid among healthcare practitioners, reinforce the importance of thorough evaluation to exclude malignancy, and contribute to the existing literature on optimal management strategies for this condition.

## RESEARCH METHODS

### 1. Anamnesis

Main Complaint: Lump in the neck

Current Disease History:

The patient came to the Surgical Polyclinic of Chasan Boesoirie Hospital with a complaint that there was a lump on the neck that was felt since a few months ago. The lump is said to continue to grow but slowly. Initially, the lump was the size of a marble and until now it is the size of a ping pong ball. The lump feels dense and painless, but the patient feels uncomfortable because of the size of the lump. There are no factors that aggravate and alleviate the patient's complaints. The patient denied the complaints: chest palpitations, trembling hands, difficulty sleeping, body heat, increased appetite, and decreased BB. Complaints of difficulty breathing and swallowing were denied by the patient. Bowel movements and baths within normal limits.

History of Past Illness:

- a. History of hospital treatment : Denied
- b. DM History : Denied
- c. History of hypertension : Denied
- d. Riwayat stroke : Denied
- e. History of old cough : Denied
- f. History of Heart Disease : Denied
- g. History of drug allergies : Denied
- h. History of Asthma: Denied

Family history of illness:

- a. Similar medical history : Denied
- b. DM History : Denied
- c. History of hypertension : Denied
- d. History of Heart Disease : Denied

Treatment history

The patient has not had treatment or surgery for a lump in the neck.

Socioeconomic life history: Smoking (-), Drinking Alcohol (-)

## 2. Generalista's Physical Status Check:

**Table 1.** Physical Examination Findings

|                          |                                                  |
|--------------------------|--------------------------------------------------|
| General conditions       | : Moderate pain                                  |
| Awareness of vital signs | : Compos mentis                                  |
| Blood pressure           | : 145/88 mmHg                                    |
| Pulse frequency          | : 83 x/m                                         |
| Breathing frequency      | : 20 x/m                                         |
| Temperature              | : 36.5 °C                                        |
| Oxygen saturation        | : 98 % Room Air                                  |
| Skin                     | : A Healthy Diet, Healthy Eating Habits          |
| Head                     | : Normocephal, normal hair.                      |
| Screen                   | : Conjunctiva Anemis (-/-), Sclera icteric (-/-) |
| Neck                     | : KGB enlargement(-), pressure pain(-)           |
|                          | Glandular enlargement (+)                        |
| Thoracic                 | : symmetrical chest wall movement (+)            |
| Heart                    | : Regular I-II heart sound, additional sound (-) |
| Mud                      | : murmur (-/-), rhonki (-/-), vesikuler (+/+)    |
| Abdomen                  | : Pain in the back of the neck (-), normal pain  |
| Ektermitas               | : Edema (-/-), CRT <2 seconds (+), Warm Akral    |

Source: Primary data obtained from physical examination of the patient at Chasan Boesoerie Hospital (August 2025)

Extremitas:

- a. Inspection: Upper and inferior extremities look pale (-), edema (-)
- b. Palpation : Upper and lower extremities warm palpable (+)



**Figure 1.** Swollen Thyroid Glands in Patients

*Source: Documentation from Chasan Boesoerie Hospital (August 2025)*

**3. Supporting Examinations**

- a. Complete Blood Count (CBC) Examination August 11, 2025

**Table 2.** Complete Blood Count (CBC) Examination Results (August 11, 2025)

| Parameter | Value | Flag | Units  | Normal Values |
|-----------|-------|------|--------|---------------|
| WBC       | 8.3   |      | 103/uL | 4.8 - 10.8    |
| RBC       | 4.7   |      | 106/uL | 4.20 – 5.40   |
| HGB       | 14.4  |      | g/dL   | 12.0 – 16.0   |
| HCT       | 39.9  |      | %      | 37.0 - 47.0   |
| MCV       | 84.9  |      | fL     | 80.0 – 94.0   |
| MCH       | 30.6  |      | pg     | 27.0 – 31.0   |
| MCHC      | 36.1  |      | g/dL   | 33.0 – 37.0   |
| PLT       | 240   |      | 103/uL | 150 – 450     |

Source: Clinical laboratory results from Chasan Boesoirie Hospital (August 11, 2025)

- b. Clotting time : 6.30
- c. Bleeding time : 2.00
- d. Laboratory Examination Results August 11, 2025

**Table 3.** Clinical Chemistry Examination Results (August 11, 2025)

| CLINICAL CHEMISTRY |                  |               |              |
|--------------------|------------------|---------------|--------------|
| Parameter          | Results          | Normal Values | Remarks      |
| HBsAg              | (-)/Non reactive |               | Non-reactive |

Source: Clinical laboratory results from Chasan Boesoirie Hospital (August 11, 2025)

**4. Resume**

The patient came to the Surgical Polyclinic of Chasan Boesoirie Hospital with a complaint that there was a lump on the neck that was felt since a few months ago. The lump is said to continue to grow but slowly. Initially, the lump was the size of a marble and until now it is the size of a ping pong ball. The lump feels dense and painless, but the patient feels uncomfortable because of the size of the lump. There are no factors that aggravate and alleviate the patient's complaints. The patient denied the complaints: chest palpitations, trembling hands, difficulty sleeping, body heat, increased appetite, and decreased BB. Complaints of difficulty breathing and swallowing were denied by the patient. Bowel movements and baths within normal limits.

In a family history of illness no one experiences the same thing as the patient. The patient has not undergone treatment or surgery. On physical examination, it was found that the glands in the neck were swollen with a solid consistency. Other physical examinations within normal limits.

**5. Diagnosis**

Multiple Nodular Thyroid

**6. Management**

DPJP Governance

- a. Infus NaCl 500 cc 20 tpm
- b. Metoclopramide 1 amp / IV/ 1 hour before surgery
- c. Lansoprazole 30 mg/IV/ 1 hour before surgery
- d. Ceftriaxone 1gr /IV / 1 hour before surgery
- e. Total Tiroidectomy



**Figure 2.** Total Thyroidectomy



**Figure 3.** Photo of Total Thyroidectomy Results

Source: Documentation from Chasan Boesoirie Hospital (August 2025)

## RESULTS AND DISCUSSION

In this case, the patient was a 36-year-old woman who complained of a lump in her neck that had gradually increased in size over time. Based on clinical observation, approximately 90% of neck lumps represent benign lesions that are not clinically significant but may be cosmetically concerning. Some of the factors contributing to multiple thyroid nodules include limited public knowledge regarding the use of iodized salt and socioeconomic constraints that hinder the ability to meet dietary iodine requirements.

Diagnosis was based on the prominent symptom of a lump in the left side of the neck, presenting as a solid lesion. A supporting examination used to determine the nature of such nodules is biopsy, which serves as the standard method for obtaining tissue samples from lesions. The patient was treated through total thyroidectomy, involving complete surgical removal of the thyroid gland

Multiple factors contribute to the development of thyroid nodules, including iodine deficiency, radiation exposure, and genetic predisposition (AL-Saig et al., 2011). In this case, although no definitive risk factors were identified, socioeconomic factors and limited public awareness about iodized salt consumption may have played a role. The diagnosis was established through medical history and physical examination, which revealed thyroid gland enlargement with a solid consistency. However, current clinical guidelines recommend that all patients with thyroid nodules undergo Thyroid-Stimulating Hormone (TSH) measurement and diagnostic thyroid ultrasound to evaluate nodule characteristics and guide further management (Gardner & Shoback, 2011). Fine-needle aspiration biopsy (FNAB) remains the gold standard for assessing thyroid nodules and determining malignancy risk (Mitchell et al., 2009). In this case, the patient proceeded directly to surgery without preoperative FNAB, which represents a deviation from evidence-based guidelines, although this approach may be justified for large, symptomatic nodules or in cases with a strong clinical suspicion of malignancy.

The patient underwent total thyroidectomy successfully and without complications. Total thyroidectomy is indicated for multinodular goiter when significant gland enlargement, compressive symptoms, cosmetic concerns, or suspected malignancy are present (Sjamsuhidayat et al., 2013). In this case, surgery was primarily indicated due to progressive enlargement causing cosmetic discomfort. Total thyroidectomy offers the advantage of removing all affected tissue and eliminating the risk of recurrence, though it carries higher complication risks compared to lobectomy (Moore et al., 2007). The patient's favorable postoperative outcome aligns with previous studies showing that thyroid surgery can be performed safely with low morbidity in

experienced hands (Mulinda, 2014). The prognosis following total thyroidectomy for benign disease is excellent, with patients requiring lifelong levothyroxine replacement therapy (Guyton & Hall, 2012).

## CONCLUSION

The thyroid can experience disorders in the form of changes in gland function or changes in shape, be it diffuse or nodules. Physical examination and biopsy are the basic management capital to establish the diagnosis. Multiple Thyroid Nodules are malignant neoplasms arising from the thyroid parenchyma tissue. Usually this appears due to a lack of iodine intake in the daily diet. The shortage is not only due to a lack of quantity, but also the quality where the wrong food processing process causes iodine to decrease drastically when consumed. These thyroid nodules are usually symptomatic in the form of swelling in the neck that is cosmetically annoying but not painful. Multiple diagnosis of thyroid nodules is based on a directed anamnesis, careful physical examination and histopathological examination as a definitive diagnosis. Management must be carried out because this disease can grow even though it is slow and painless. Management can be in the form of radiodine administration or surgery.

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