

Tuberculous lymphadenitis mimicking lymph node metastasis in follicular variant of papillary thyroid carcinoma: A Case report

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Abstract

Papillary thyroid carcinoma is sometimes associated with cervical lymphadenopathy

These must be well analyzed clinically and radiologically, especially in a region with a high tuberculosis burden because the management is completely different.

We report, through the case of a patient who had presented a papillary carcinoma of the thyroid associated with lymph node tuberculosis, the surgical and medical management, as well as a literature review.

Keywords: papillary carcinoma – tuberculosis – dissection – adenopathy – metastatic

1. Introduction

Papillary thyroid carcinoma (PTC) is sometimes associated with one or more cervical lymphadenopathy.

Tuberculous lymphadenitis (TB), the most common form of extrapulmonary tuberculosis, usually cannot be distinguished from lymph node metastases due to CPT because the distribution and appearance of affected lymphadenopathy tend to be similar.

In a high TB burden region like Morocco, proper preoperative assessment is needed to distinguish between these two entities and provide appropriate treatment.

The aim of our work is to show that tuberculosis should be a differential diagnosis in the etiology of cervical lymphadenopathy in patients with papillary thyroid carcinoma, which requires us to carry out an appropriate preoperative evaluation to institute adequate treatment.

We will also try to determine the frequency of tuberculous cervical lymphadenopathy mimicking metastases of papillary thyroid cancer.

2. Clinical case and Results:

We report the case of a 40-year-old patient who presented in consultation with an anterior base-cervical mass evolving for 9 months and gradually increasing in size.

Before this consultation, the patient was apparently in good health with good functional capacity.

On physical examination, a firm and non-tender right thyroid nodule was palpated with 02 left thyroid nodules. An associated non-tender lymph node was also palpated in the left cervical region.

The rest of the examination was otherwise unremarkable with possible nasofibroscope which showed preserved mobility of the 02 vocal cords

The patient reported no symptoms of hypo- or hyperthyroidism or compressive symptoms such as dyspnea, dysphagia, or odynophagia. Likewise, there was no notion of chronic cough, night sweats, weight loss, or fever.

There was no personal history of previous treatment or known exposure to TB, no previous head and neck irradiation, and no family history of thyroid disease.

Complete blood count and serum biochemistry (CRP) were normal; the patient's thyroid function was preserved (euthyroidism)

A cervical ultrasound revealed a normal-sized thyroid gland with a right upper polar nodule measuring 10.5*8.5*7.5 mm (EU Tirads 5) and two left nodules: an anterior mediodistal 15*10*5 mm (EU Tirads 3) and a Lower polar colloid cyst of 3.5 mm (EU Tirads 2) with bilateral later cervical polyadenopathies, partially necrotic containing central microcalcifications, predominant above the clavicular, especially on the left.

A cyst puncture of the right thyroid nodule showed a suspicious cytological aspect of a malignant tumor (in favor of papillary carcinoma) Bethesda category V.

The indication for a total thyroidectomy with extemporaneous examination and a possible bilateral mediastinum-recurrent courage was posed. Frozen section examination of the right thyroid lobe intraoperatively revealed a papillary carcinoma of the right thyroid nodule.

Intraoperatively, during the mediastinum-recurrent dissection, adenopathy was objectified which was adherent to the right recurrent nerve. Dissection was difficult and caseum was observed in the center of this adenopathy. (**Figure 1**)

Bacteriological samples were taken, and which objectified the presence of the Mycobacterium Tuberculosis complex by PCR (GeneXpert)

The two lower laryngeal nerves were preserved during the surgery.

In total, the patient underwent total thyroidectomy with bilateral mediastinum-recurrent central cellular-nodal dissection without lateral lymph node dissection.

The definitive anatomopathological examination revealed a non-invasive follicular tumor with nuclear characteristics of papillary cancer (NIFTP= Non-Invasive Follicular Thyroid Neoplasm with Papillar Like Features) of the right lobe measuring 1cm on the long axis.

Incidentally, lesions of benign nodular hyperplasia of the left lobe

Also, the right mediastinum-recurrent dissection found 4N-/4N with a lymph node containing a granulomatous infiltrate with the presence of large foci of caseous necrosis (tuberculous adenitis); 1N-/N left mediastinum-recurrent dissection; the peritracheal dissection objectified 05 lymph nodes of which 03 are metastatic (3N+/5N) and one lymph node seat of tuberculous adenitis.

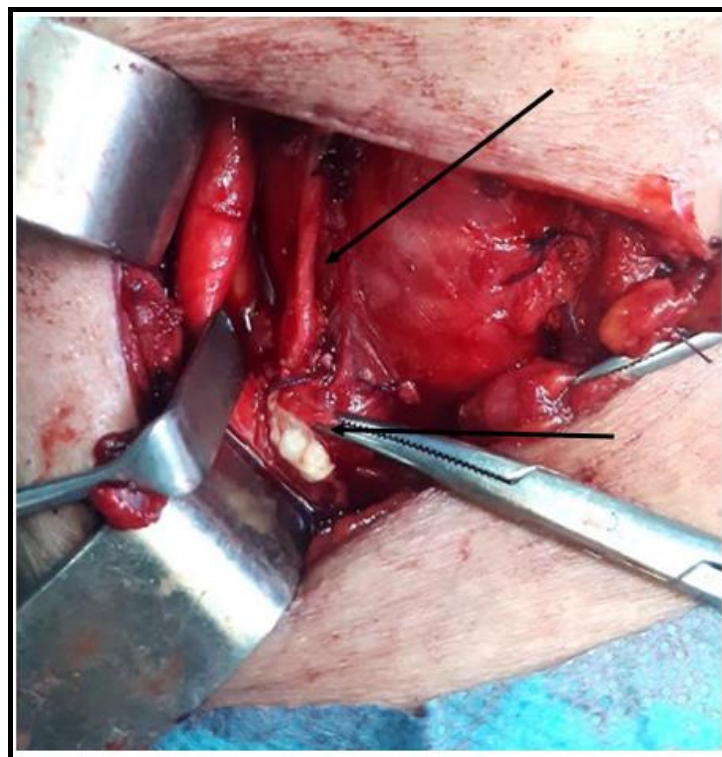


Figure 1: intraoperative image showing adenopathy with case (1) and the inferior laryngeal nerve (2) Postoperatively, an endoscopic examination revealed no paralysis of the vocal cords. The patient received anti-tuberculosis treatment, including rifampicin, pyrazinamide, ethambutol, and isoniazid, also the patient received radiation therapy (1 cycle of 100 mCi radioactive iodine-131), followed by restraining opotherapy with good clinical and biological evolution.

The current follow-up is one year without metastases.

3. Discussion

Papillary thyroid carcinoma is the most common type of malignant thyroid tumour, accounting for more than 80 % of all thyroid cancer cases. [1]

It preferentially metastasizes to regional lymph nodes, with polyadenopathy described in 23 to 56 % of CPT cases at the start of its presentation. [2,3]

Cervical cellulo-nodal dissection is the current standard for the management of CPT patients with clinically and radiologically positive lymphadenopathy.

Although the procedure is relatively reliable and safe, it can still lead to significant postoperative complications and cosmetic issues. A thorough preoperative evaluation is therefore essential so that patients

do not have to undergo an invasive procedure for another more or less benign etiology.

On the other hand, this dissection can lead to many postoperative complications.

We report the case of an accidental wound of the internal jugular vein in a patient who presented an association between CPT and TB and whose preoperative diagnosis was incorrectly made. [4]

Proper preoperative assessment of these patients is mandatory to avoid unnecessary surgery.

Tuberculous lymphadenitis (TB), the most common form of extrapulmonary tuberculosis, is usually indistinguishable from lymph

node metastases due to CPT because the distribution and appearance of affected lymphadenopathy tend to be similar. [5]

In a region where tuberculosis remains a public health problem like Morocco, an appropriate preoperative evaluation is necessary to distinguish these two entities and provide appropriate treatment.

Cervical tuberculous lymphadenitis may be the only symptom without systemic and/or pulmonary involvement, and it localizes respectively in the posterior triangle of the neck, the deep cervical chain, the submental chain, and the submandibular chain.

Cervical tuberculous lymphadenitis is usually unilateral and involves several adenopathies. Bilateral involvement is rare.[6]

The coexistence of tuberculous lymphadenitis and CPT has been described in several case reports from India, Korea, Japan, and the United States. [6,7,8]

In a case series of patients with CPT with polyadenopathy, 72 % (18/25) were diagnosed with tuberculous lymphadenitis after an initial examination for CPT metastasis. [9]

In another study that involved 1693 patients with CPT and polyadenopathy, 28 had tuberculous lymphadenitis. Of these, seven also had concomitant lymph node metastases from CPT. [10]

In our case, the patient initially presented as a simple case of PTC manifesting as an asymptomatic anterior cervical mass progressively increasing in volume with polyadenopathy.

Due to documented malignancy and nodal location, our initial consideration for lymphadenopathy was a metastatic extension.

A certain number of preoperative examinations are often carried out before the surgical act and their effectiveness is varied, in particular in terms of differentiating between metastatic adenopathy and tuberculous one.

In terms of radiological examinations, cervical ultrasound and cervical computed tomography show similar signs both in the context of lymph node tuberculosis and metastatic lymphadenopathy from CPT.

Cystic necrosis, calcifications, and round-shaped hypoechoic masses usually located in the supraclavicular region or posterior triangle of the neck are hallmark sonographic findings of tuberculous adenitis and lymph node metastasis from CPT. [11]

CT scan analysis of both entities will often reveal irregular peripheral contrasts and low central density.[4]

Despite the fact that ultrasound remains the most useful radiological tool for differentiating benign from metastatic cervical lymphadenopathy, it is still difficult to differentiate tuberculous cervical lymphadenitis from metastatic CPT lymphadenopathy since the distribution and ultrasound appearance are virtually identical [12] In the case of our patient, cervical ultrasound was not helpful in the diagnostic dilemma.

A simple chest X-ray could support the diagnosis of tuberculosis infection. In the absence of pulmonary tuberculosis, cervical tuberculous lymphadenopathy may still be possible, as in our case,

where a preoperative X-ray was done and showed no lesions suspicious of tuberculosis.

In the diagnostic approach of tuberculous lymphadenopathy, a study showed that preoperative ultrasound-guided fine-needle aspiration cytology (FNAC = Ultrasound-guided fine-needle aspiration cytology) had a sensitivity of 88 % and a specificity of 96 %. [4]

A few other studies have reported the sensitivity of FNAC to be 46-90 %, noting that results vary widely. [13,14,15,6]

In addition, current recommendations do not opt for preoperative FNAC of metastatic PTC lymphadenopathy that is clinically and radiologically present.

Thus, without a high index of suspicion, the diagnosis of tuberculous lymphadenitis can be easily missed.

Histopathological examination remains the most accurate test for diagnosis, but preoperative ultrasound-guided fine-needle aspiration biopsy may also be inconclusive. In addition, the diagnosis cannot be made on the simple observation of granulomas on FNAC. [14,16]

Other tests are indicated to confirm the diagnosis of tuberculosis, and they include M. tuberculosis culture, acid-fast bacillus smear, and polymerase chain reaction (PCR).

Culture takes a long time, while smear is less accurate. [17,18]

In contrast, PCR gives accurate and fast results. Additionally, polymerase chain reaction (PCR) puncture can be used to increase sensitivity and specificity. [19]

Thus, Choi et al state that PCR for M. tuberculosis of material aspirated from the FNAC of enlarged adenopathies should be done to exclude tuberculous cervical lymphadenitis.

In our patient, aspiration-aspiration and preoperative PCR for M. tuberculosis in the lymph nodes was not done because the coexistence of tuberculous lymphadenitis and CPT was not part of routine investigations nor part of clinical suspicion.

Retrospectively, PCR as a preoperative diagnostic modality to distinguish cervical tuberculous lymphadenitis from PTC lymph node metastasis can be considered [20]

Extemporaneous examination of lymphadenopathy suspected of metastasis has proven useful [10]

This is also reflected in our case where an intraoperative frozen section examination actually raised suspicion of tuberculous lymphadenitis, rather than malignancy.

That said, a well-performed and well-systematized preoperative assessment in our patient could have identified tuberculous adenitis, led to earlier initiation of anti-bacillary treatment, and spared the patient unnecessary neck dissection.

Indeed, cervical lymph node dissection is a rather invasive procedure with risks involved.

In contrast, cervical tuberculous lymphadenitis is treated non-invasively with medical anti-tuberculosis therapy. The surgical act in the management of this entity retains a limited role.

Therefore, there is a role of preoperative needle aspiration (FNAC) with PCR to detect *M. tuberculosis* to deal with the diagnostic dilemma, especially in endemic regions.

In patients who test positive for *M. tuberculosis*, cervical lymph node dissection may not be necessary.

Surgeons would then be able to minimize the various complications associated with neck dissection.

While acknowledging that some surgeons may still have little reservations about leaving a metastatic residue even if the patient is

positive for tuberculous lymphadenitis, we recommend an anti-tuberculosis medical treatment option, assess whether the lymphadenopathy responds well to treatment, and delay before determining the surgical procedure.

If the hypertrophied adenopathies decrease in size and collapse, it may not be necessary to perform cervical dissection.

Nevertheless, further large-scale studies need to be conducted so that further conclusions can be drawn for a better approach to the diagnostic dilemma.

4. Conclusion

In conclusion, patients with CPT and presenting with cervical lymphadenopathy should benefit from a well-established preoperative assessment in order to differentiate between lymphadenopathy that could be attributed to tuberculosis and those considered to be regional metastases, and this is particularly the case. cases in areas where TB infection is endemic.

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