

Ganglionic Invasion in the Thyroid Cancers

Lassikri Omar*, Sefrioui Taha, Nekro Chaimae, Nitassi Sophia, Elayoubi Ali, Bencheikh Razika, Benbouzid Mohamed Anas, Oujilal Abdelilah, Essakalli Leila

Department of Otorhinolaryngology and Head and Neck Surgery, Specialities Hospital, Faculty of medicine, Mohammed V University, Rabat, Morocco

*Corresponding author: Lassikri Omar

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Abstract

Original Research Article

Introduction: The incidence of thyroid cancer is rising sharply. The boundaries and key points of neck dissection corresponding to the lymphatic drainage channels of the thyroid are described but remain controversial. The purpose of our work is to discuss the type of lymphadenectomy done in thyroid cancer. **Materials and methods:** This is a retrospective study of 81 patients operated for thyroid cancer in the ENT and CCF departments of the Rabat specialty hospital, over a period of three years, between 2015 and 2017. **Results:** 76 patients underwent total thyroidectomy. Sixty patients underwent bilateral central dissection, associated with ipsilateral functional dissection in 18 patients, bilateral in three patients and ipsilateral radical in three patients. Five patients had anaplastic carcinoma, 6 patients had medullary carcinoma, 4 had follicular carcinoma, and 66 had papillary carcinoma. The presence of metastatic lymphadenopathy in central compartment was noted in 39 patients, associated with ipsilateral J-C metastasis in 18 patients and contralateral in three patients. **Discussion and conclusion:** In the literature, we have found that there is still no consensus regarding functional dissection in thyroid cancer. We note that cervical lymph node dissection may be limited to the central compartment or associated with ipsilateral or bilateral functional dissection depending on the lymph node status of the patient.

Keywords: lymph node dissection, lymphadenopathy, thyroid cancer.

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INTRODUCTION

The incidence of thyroid cancer is clearly increasing. Lymph node involvement appears to have little influence on overall survival, but increases the risk of locoregional recurrence and distant metastases. The boundaries and key points of neck dissection corresponding to the lymphatic drainage channels of the thyroid are described but remain controversial. The purpose of our work is to discuss the type of lymphadenectomy done in thyroid cancer.

MATERIALS AND METHODS

This is a retrospective study of 81 patients who underwent surgery for thyroid cancer in the ENT and CCF departments of the specialty hospital in Rabat, over a period of three years between 2015 and 2017.

RESULTS

In three years, 81 patients were treated for thyroid cancer, with a sex ratio of 0.35 (21/60). The average age of our patients is 47.44. Nine patients had a familial ATCD of thyroid cancer. The average consultation time was 50 months, with extremes

between 1 and 3 years. The reason for consultation was a mean left jugulo-carotid adenopathy (J-C ADP) in three patients, a high right J-C ADP in three patients, a mean left J-C ADP associated with anterior cervical swelling in nine patients, an associated high right J-C ADP, anterior cervical swelling in three patients, and anterior cervical swelling in 60 patients. Thyroid was not palpable in 11% of patients. At the nasofibroscope, six patients had fixation of the left hemilarynx. The cervical ultrasound performed for all our patients showed bilateral J-C ADP in 15 patients, left J-C ADP in 12 patients, right spinal and J-C ADP in 6 patients, and left spinal and J-C ADP in 3 patients. 18 patients had a tirads 4a, 51 patient's tirads 4b and 12 had a tirads 4c. Six patients had distant metastases. 76 patients underwent total thyroidectomy. Bilateral central lymphadenectomy was performed in 60 patients. Ipsilateral functional lymphadenectomy was performed in 18 patients (9 rights and 9 left), three patients underwent bilateral functional lymphadenectomy and three patients received ipsilateral radical dissection. Histologically, five patients had anaplastic carcinoma, six patients had a medullary carcinoma, four patients had follicular carcinoma and sixty six patients had

papillary carcinoma. The presence of metastatic lymphadenopathy in central compartment (groups VI et VII) was noted in 39 patients, associated with ipsilateral

J-C metastasis (groups II, III, IV) in 18 patients and contralateral in three patients.

Table-1: Descriptive results

Data	%
Reason for consultation	
J-C ADP middle left	3,7
J-C ADP high right	3,7
J-C ADP middle left + Anterior cervical swelling	11,1
J-C ADP high Dt + anterior cervical swelling	3,7
Anterior cervical swelling	74
adventitious	3,7
Cervical ultrasound	
J-C ADP bilateral	18,5
J-C ADP left	14,8
Left J-C ADPJ+ Left Spinal	3,7
J-C ADP Right + Spinal Right	7,4
Tirads	
4a	22,2
4b	62,9
4c	14,8
Surgical gesture	
Total thyroidectomy	93,8
Central lymphadenectomy	74
Ipsilateral functional lymphadenectomy	22,2
Bilateral functional lymphadenectomy	3,7
Radical lymphadenectomy	3,7
Histological type	
Papillary carcinoma	81,4
Follicular carcinoma	4,9
medullary carcinoma	7,4
Anaplastic carcinoma	6,1
N + lymph node metastasis	
Group VI VII	48,1
Group II III IV ipsilateral	22,2
Group II III IV contralateral	3,7

DISCUSSION

Papillary and vesicular cancers of the thyroid are the most common endocrine cancers. Lymph node invasion appears to have little influence on overall survival, but increases the risk of locoregional recurrence and distant metastases [1]. At present, the

diagnosis of thyroid cancer is made preoperatively on biopsy punctures or during thyroidectomy. The choice of the type of lymph node dissection to be performed is based on prognostic scores. Of all the proposed scores, three seem more appropriate for follicular cancers. These are the TNM, AMES and AGES scores.

Table-2: Comparison of classification systems for thyroid carcinoma of follicular origin [2]

TNM	AMES	AGES
Age < or > 45 years	Age M> 40, F> 50	Age> 40 years
Size of the primary tumor	Remote metastasis	Degree of cellular differentiation
T1 ≤ 1 cm;	Extra thyroid invasion	Extra thyroid invasion
T2 1-4 cm;	Size of the primary tumor	distant metastasis
T3> 4 cm		Size of the primary tumor
T4 extra thyroid invasion		
distant metastasis		

The extent of lymphadenectomy depends on factors that increase the risk of lymph node metastasis.

To appreciate the extent of lymphadenectomy to be performed, four elements must be taken into account:

The primary thyroid tumor: lymphatic invasion is more common in papillary carcinomas. By multivariate analysis, Mirallié also showed that the absence of peritumoral capsule and perithyroid invasion were two factors independently increasing the risk of lymphatic invasion [3, 4].

Adenopathys: In preoperative, ganglionic invasion can be suspected on several ultrasound criteria. The sensitivity of the cervical ultrasound reaches 97% while its specificity increases from 32% to 93% if an echo-guided biopsy puncture of the suspected lymphadenopathy is performed at the same time [6]. On the other hand, intraoperatively enlarged, indurated, confluent lymphadenopathy and the presence of a sentinel lymph node is suspect. But the macroscopic aspect alone does not guide a lymphadenectomy. Thus, it has been shown that 6% of "suspect" lymphadenopathys are free from microscopic invasion [7], whereas 17% of "normal" lymphadenopathys are histologically invaded [5].

The patient: ganglionic invasion is more frequent in the youngest subjects. It is also influenced by sex, with men being significantly more likely to be exposed [3].

The risks of the lymphadenctomy: the extent of the lymphadenctomy also depends on the morbidity that can result. Ganglionic picking is a technique to avoid. After picking, Tisell pointed out that the cervical lymph node recurrence rate is 23% and occurs within a median time of 7.3 years, whereas it is, after lymphadenectomy set, only 6% and occurs within a median age of 15.6 years [8]. Prophylactic lymphadenectomy would seem useless. While 14% of the cases reveal undetectable invasiveness in the pre- or intraoperative macroscopic or cytological aspect, it does not modify the patient's survival, which is with or without curage of 98% at 20 years, and the rate of lymph node recurrence estimated at 2% even in patients who had no ganglionic gesture [5].

For medullary carcinomas, the lymphadenectomy is necessary. Its modalities can vary according to the teams, but the principle is admitted considering its particular lymphophily: 55 to 75% of ganglion metastases at the time of the diagnosis [9, 10]. The invasion of ipsilateral cervical ganglionic chains is as frequent as the involvement of the central compartment and contralateral invasion can be found in nearly 20% of cases, including for infracentimetric medullary carcinomas [11].

CONCLUSION

In the literature, we have found that there is still no consensus regarding functional dissection in thyroid cancer. We note that cervical lymphadenectomy may be limited to the central compartment or associated

with ipsilateral or bilateral functional dissection depending on the lymph node status of the patient.

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