



Value of the Cervical Compartments in the Surgical Treatment of Papillary Thyroid Carcinoma

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Abstract. In the treatment of papillary thyroid carcinoma (PTC), supplementary lymph node dissection (LND) is not well standardized. The purpose of this study was to evaluate the significance of the cervical compartments in the lymphatic spread of PTC and the impact of modified radical neck dissection (MRND) as an additional surgical procedure to thyroid resection. From 1999 to 2002, LND of the central compartment (compartment A) was performed in 39 patients. Among this group, additional MRND of the ipsilateral compartment (compartment B) and the contralateral compartment (compartment C) was performed in 29 and 15 patients respectively, who met the selection criteria. The mean number of nodes resected was 11 (5–22) in compartment A, 23 (8–37) in compartment B, and 22 (10–31) in compartment C. Histopathologic findings revealed node invasion of compartment A in 25 patients (64.1%), of A and B in 20 patients (51.2%) and of A, B, and C in 13 patients (33.3%). From the 25 patients with metastases in compartment A, 80% (20 patients) already had metastases in compartment B and 52% (13 patients) had metastases in all three compartments. All patients free of metastasis (M0) in compartment A were also metastasis free in both lateral compartments. Postoperative whole-body scanning I^{131} in M0 patients showed no uptake at all. Mapping of the cervical anatomy in compartments seems to be a useful taxonomy for clarifying the lymphatic spread of PTC. Patients having PTC without metastasis in compartment A are almost certainly disease free at the time of operation. Lymph node metastasis in the central compartment appears to be a valuable indicator of lymphatic invasion of the lateral compartment and a strong indication for performance of a unilateral or bilateral MRND to complete the surgical removal of tumor.

Despite the overall excellent prognosis of papillary thyroid carcinoma (PTC), local and lymphatic recurrence is associated with poor prognosis as well as a high rate of morbidity and mortality, usually from invasion of the trachea or the great vessels [1–3]. For most institutions worldwide, total thyroidectomy has become the treatment of choice for PTC for all risk-group patients to avoid

local recurrence [4–8]. However, it remains controversial whether modified radical neck dissection (MRND) improves the prognosis [9]. Several authors report that thyroid cancer metastasis in non-palpable cervical nodes was proved to be present in up to 70% of MRND surgical specimens [10–14]. It is well known that prophylactic lymphadenectomy is not justified, except for medullary thyroid carcinoma, although there are indications that the incidence of local and cervical recurrence is reduced after lymph node dissection [15]. During the last two decades several efforts were concentrated on the ability to promptly recognize the presence of cervical lymph node metastasis prior to or during thyroidectomy for well-differentiated thyroid carcinoma, to justify an additional and more radical surgical procedure. Methods applied in the past were selective and systematic lymphadenectomy [16–18], lymph node sampling or node-picking from the jugular chain or supraclavicular groove [14, 19, 20], sentinel node detection using diverse methods such as preoperative lymphoscintigraphy and intraoperative radioguidance [21, 22], and—more recently—lymph node biopsy and lymphatic mapping using methylene blue [23, 24]. Those methods have been tested to suggest the route of lymphatic invasion and to indicate the need for supplemental modified radical neck dissection in well-differentiated thyroid carcinoma.

Until now, our policy in those patients with preoperative or intraoperative diagnosis of PTC was the sampling of enlarged lymph node from level VI (pretracheal and paratracheal) and in some cases from level IV (middle and inferior jugular chain). Our previous experience, as with other authors [14, 19] using this strategy, exhibited a high incidence of false-negative results when final histology was compared to the postoperative radioiodine evaluation. In the present study, we adopted the combined method of compartment-mediated dissection as described by Scheumann, Dralle, and colleagues with meticulous total lymphadenectomy [16, 17], to evaluate lymph node disease status and to understand the sequential lymphatic spread of the PTC. With this strategy, we attempted to recognize which patients could potentially benefit from an extended additional surgical procedure such as MRND.

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Patients and Methods

Patients

From 1999 to 2002, PTC was diagnosed in 116 cases (19.2%) from a total of 602 patients treated with thyroidectomy at the 2nd Department of General and Endocrine Surgery of the Papageorgiou General Hospital. Occult papillary carcinoma was detected postoperatively in 52 unsuspected patients with benign thyroid disease. From the remaining 64 patients with tumors larger than 10 mm, the diagnosis of papillary carcinoma was first established preoperatively by fine-needle aspiration biopsy (FNAB) in 54 patients (84%). Intraoperative diagnosis or confirmation by frozen section biopsy (FSB) was obtained for 18 patients and postoperatively by definitive pathologic evaluation for 5 patients.

For the purposes of this study, 39 patients with PTC were recruited, 15 men and 24 women, median age 41.3 years (range: 17–72 years), in whom lymphadenectomy from the central compartment of the neck was performed as a minimal supplementary procedure. Among these 39 patients, 34 underwent total thyroidectomy and lymphadenectomy during the same operation. The other 5 patients underwent subsequent lymphadenectomy, 3 of them after incomplete thyroidectomy elsewhere and 2 others after a definitive histopathologic report. In three of our 39 patients, distant metastases were already present at the time of operation.

Preoperative evaluation of the patients included meticulous physical examination of the neck, along with scintiscan and ultrasound exploration. In a few cases computed tomography (CT) or magnetic resonance imaging (MRI) of the neck and thorax was performed.

Follow-up data from all patients was available from 8 to 42 months. Postoperative whole-body scanning I-131 and thyroglobulin (Tg) levels were obtained within the first 6 months and then every year thereafter.

Surgical Strategy

For the purposes of definition, we adopted a single taxonomy for the mapping of the cervical topographic anatomy in three compartments based on the initial description of Scheumann, Dralle, and colleagues [16] (Fig. 1).

The central compartment, or compartment A, comprises the cervical region flanked by the carotid sheaths, from the hyoid bone and superior thyroid vessels of each side down to the brachiocephalic vein. This compartment includes the pretracheal, paratracheal, and recurrent laryngeal lymphatic chain (level VI). The upper fraction of the thymus gland was often removed for technical reasons.

The lateral compartments B (ipsilateral) and C (contralateral) comprise the triangular region flanked by the internal jugular vein in the midline (from the subclavian vein to the mastoid process), the trapezoid muscle and spinal accessory nerve lateral-posteriorly and the subclavian vein inferiorly, and include the lymph nodes of the jugular vein, those between the branches of the cervical plexus and those of the supraclavicular groove (levels II, III, IV, and V).

Compartment D, or the mediastinal compartment, represents the bilateral zone of the trachea from the brachiocephalic vein down to the tracheal bifurcation and includes the anterior and posterior lymphatic chains (level VII).

Lymphadenectomy of compartment A was carried out, usually

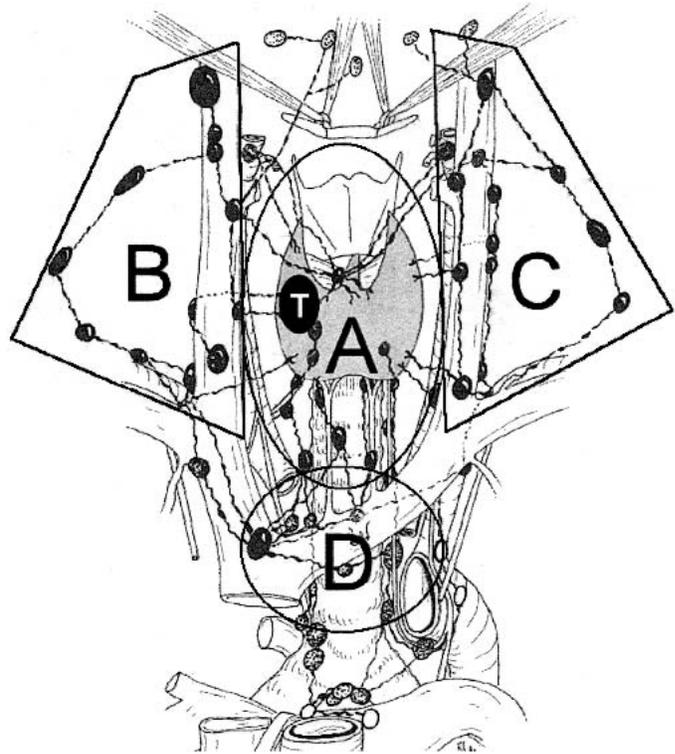


Fig. 1. Cervical compartments in papillary thyroid carcinoma. A: central, B: ipsilateral, C: contralateral, D: mediastinal, T: tumor.

en bloc with the thyroid gland. Meticulous removal of all lymph node-bearing fat across the entire superior mediastinum, following the course of the inferior laryngeal nerve, was included in the dissection. Special attention was paid to preserving at least two parathyroid glands far from the thyroid tumor. Modified radical neck dissection of the lateral compartments B or C was done with careful dissection and preservation of the minuscule vital structures and all muscles, main vessels, nerves, and thoracic ducts. Sacrifice of any of these structures was done only if it was strictly necessary. Median sternotomy and dissection of compartment D was performed once after obtaining postoperative scintigraphic evidence of PTC in mediastinum. The surgical specimens from each compartment were removed en bloc and sent for biopsy separately.

Criteria for the MRND Procedure

Selection criteria for the MRND procedure were these: (1) preoperative cytological PTC diagnosis in lateral lymph node (compartment B or C); (2) an intraoperative positive FSB in thyroid tumor and compartment A lymph node; (3) post-thyroidectomy histopathologic PTC diagnosed as T3–T4 or T2 multicentric tumor, capsule, and/or vessel invasion (Table 1); and (4) post-thyroidectomy scanning I-131 detecting foci in the cervical area or palpable lymph node in association with high levels of thyroglobulin (Tg).

Extent of Surgery

Total thyroidectomy in one or two sessions is a routine procedure for all patients with PTC diagnosis in our center. Total meticulous lymph node dissection of the central compartment (A) was per-

Table 1. TNM pathological classification of primary tumor (T), regional lymph nodes (N), and metastasis (M).

pT1	< 1 cm not extending beyond the thyroid capsule
pT2	1–4 cm not extending beyond the thyroid capsule
pT3	> 4 cm not extending beyond the thyroid capsule
pT4	Any size extending beyond the thyroid capsule
pN0	No regional lymph node metastasis
pN1	Presence of regional lymph node metastasis
pN1a	Metastasis in ipsilateral cervical nodes
pN1b	Metastasis in contralateral cervical or mediastinal nodes
pMX	Distant metastasis cannot be assessed
pM0	No distant metastasis
pM1	Distant metastasis

formed in 39 patients with: a) large PTC (T3/T4) ($n = 5$), b) any T with enlarged pretracheal or recurrent chain lymph nodes ($n = 13$) in T2, after histopathology (FSB or definitive) report of multicentric tumor, capsule, and/or vessel invasion ($n = 21$). Among this group of 39 patients, additional MRND of the ipsilateral compartment (B) was performed in 29 patients with the following criteria: (1) preoperative FNAB diagnosis of PTC in lateral lymph node ($n = 5$); (2) positive FSB of the removed A compartment lymph nodes ($n = 14$); or (3) suspicious enlargement of the ipsilateral jugular vein lymph nodes ($n = 10$). Contralateral MRND was added (compartment B and C) in 15 patients with these criteria: (1) detected multifocal PTC at the FSB or definitive histopathology ($n = 2$); (2) enlarged lymph nodes in contralateral compartments ($n = 3$); or (3) PTC cytological or histological diagnosis in a contralateral lymph node ($n = 10$). This procedure was performed by extending the usual Kocher’s incision laterocranially to a point just below the mastoid process. Mediastinal lymphadenectomy of compartment D was performed in one case after scintigraphic uptake in this area.

Histopathologic Examination

The same pathologist team reviewed all specimens. The report of the thyroid tumor included size; location; capsular, vascular, or lymphatic invasion; and multicentric status. The excised lymph-adipose tissue was carefully examined so that no small lymph node would be overlooked, and all removed lymph nodes were counted (those with and without metastasis). Tumor and lymph nodes were reported according to the pathological TNM staging scheme for cancer of the thyroid gland and also following the cervical compartment’s taxonomy as described above.

Postoperative Evaluation

All patients included in this study were evaluated postoperatively after 6 months and then yearly. The evaluation was comprised of whole-body scintiscan I-131, Tg levels, and a CT or MRI scan.

Results

Histological Findings: Lymph Node Status

Lymph node PTC metastases were found in 26 patients. In one case, only one micro-metastatic focus (1 mm) was observed, and the other 25 patients exhibited typical invasion in at least 2 nodes. The overall incidence of metastases in cervical lymph nodes in our pa-

tients with PTC ($n = 64$) at the time of operation was 40.6% (occult cancer excluded).

Among the 39 patients included in this study, invasion of lymph nodes of compartment A was observed in 25 patients (64.1%); of compartments A and B, in 20 patients (51.2%); and of compartments A, B, and C, in 13 patients (33.3%). Of the group of 25 patients with lymph node metastases (N+) in compartment A, 80% (20 patients) already had metastases in compartment B, and 52% (13 patients) had metastases in all three cervical compartments. From the 20 patients with lymph node metastases in compartment B, 13 patients (65%) were also found to have positive nodes in the contralateral compartment C. The distribution of the invaded lymph nodes in the MRND surgical specimen of compartments B and C did not demonstrate any obvious pattern of having affected the anatomic lymphatic levels. All operated patients free of lymph node metastasis in compartment A ($n = 14$) were also free of metastases in both lateral compartments (Table 2).

After the final surgical procedure, in all 3b MO patients, postoperative whole-body scanning I-131 showed an uptake close to the background or no uptake at all, and Tg levels were close to zero. From the 29 N+ patients, 3 M1 (10.3%) with lung metastases at the time of operation were detected. In one patient, scintiscan showed a high uptake in compartment D 6 months after radical lymphadenectomy of compartments A, B, and C.

Risk-factor Parameters

No statistically significant correlation was found between tumor size and the presence of lymph node invasion. Definitive histopathologic findings in the thyroid gland revealed the presence of papillary carcinoma in 31 cases, the papillary follicular variant in 7 cases, and the papillary sclerosing variant in one case. We observed that the follicular variant, as well as the sclerosing variant, was often accompanied with nodal metastases (6 of 8 cases; Table 3)

A significant correlation was observed between presence of multicentric tumor and lymph node metastases ($p < 0.001$). Multicentric tumor was found to be present in 15 of the 20 patients (75%) with metastases in compartments A and B and in 10 of the 13 patients (76.9%) with metastases in all three compartments. In patients without any node metastasis ($n = 13$) and in those with nodes positive only in compartment A ($n: 6$), multicentric tumor was observed in 1 case, representing 7.6% of the first group and 16% of the second.

In patients without lymph node metastases, capsular and vascular invasion was not detected. However, this parameter was reported in 65% of the cases ($n = 13$) with metastases in compartment B ($p < 0.001$).

Lymph node size (0.1–1.8 cm) did not differ between patients without any node invasion and those with positive nodes confined in compartment A. However, when metastases were present in compartment B lymph nodes, lymph node size was significantly larger (Table 3).

FNAB and FSB

As shown in Table 4, the sensitivity of the FNAB in the thyroid tumor and in the lymph nodes, in relation to the definitive histological examination, was 83%. Frozen section biopsy (FSB) examination of the thyroid tumor and compartment A lymph nodes, in

Table 2. Lymph node status in the cervical compartments and surgical procedure.

	Compartment A	Compartment B	Compartment C	Compartment D
Lymph node status	10 cases N0 (non-palpable) 4 cases N0 (palpable) → 25 cases N+ → {	4 cases N0 5 cases N0 20 cases N+ → {	2 cases N0 13 cases N+ →	1 case N+
Procedure <i>n</i>	LND-A 39 cases	LND-A + MRND-B 29 cases	LND-A + MRND-B & C 15 cases	LND-A + MRND-B & C + LND sternotomy 1 case

LND: lymph node dissection / MRND: modified radical neck dissection; A – B – C – D: cervical compartments.
N+: lymph node metastasis present; N0: lymph node metastasis absent

Table 3. Thyroid tumor characteristics, lymph node size, and lymph node status in cervical compartments.

Compartment (node metastases)	Tumor size (cm)				Node size (cm)	Multicentric (<i>n</i>)	Invasion capsular/vascular (<i>n</i>)		Histological type Pap/pap-foll (<i>n</i>)
	< 2	2–3	3–4	> 4					
A (N0) <i>n</i> = 4	8	4	1	–	0.1–1.8	0	0	1	13/1
A (N+) / B (N0) <i>n</i> = 5	1	2	1	1	0.2–1.8	1	0	0	4/1
A (N+) / B (N+) / C (N0) <i>n</i> = 7	–	–	5	2	0.1–4.0	5	4	5	4/3 ^a
A (N+) / B (N+) / C (N+) <i>n</i> = 13	5	5	1	2	0.2–3.8	10	5	4	10/3

A – B – C – D: cervical compartments; N+: lymph node metastasis present; N0: lymph node metastasis absent; Pap: papillary type; pap-foll: papillary type-follicular variant. ^aSclerosing variant papillary carcinoma.

Table 4. Fine-needle aspiration biopsy (FNAB) and frozen section biopsy (FSB) related to definitive histological examination.

	Results			Sensitivity (%)
	Cases	Positive/suspect	Negative	
FNAB				
Tumor	<i>n</i> = 35	29	6	83
Node B compartment	<i>n</i> = 6	5	1	83.3
FSB				
Tumor	<i>n</i> = 26	25	1 ^a	96.2
Node A compartment	<i>n</i> = 36	34	2 ^b	94.5

^aFollicular neoplasm.
^bMicro-metastases.

relation to the definitive histological report, showed a sensitivity of 96.2% and 94.5%, respectively. In one case where the definitive diagnosis was papillary carcinoma follicular variant, the FSB in the thyroid tumor reported follicular neoplasm. Frozen section biopsy in lymph nodes from compartment A failed in two cases; in one case, paraffin cuts found a papillary microcarcinoma < 1 mm among 7 almost normal-sized nodes, and in the other case, one spot metastasis was found among 9 nodes. Neither of these two patients showed any node metastasis in compartment B in 23 and 19 removed lymph nodes, respectively. The sensitivity of FSB in enlarged lymph nodes from compartments B and C was 100%.

Preoperative Evaluation

Clinical and echographic evidence of cervical lymphadenopathy, when correlated with the histopathologic findings, had very low accuracy, with error estimation in 20% of cases in compartment B and 60% in compartment C.

Other risk parameters such as age and sex did not show any sig-

nificant difference between the groups of patients with or without lymph node metastases (Table 5).

Surgical Complications

Major complications or intraoperative death did not occur in this series. Permanent hypoparathyroidism was not observed in any patient, and unilateral vocal cord palsy was demonstrated in one patient after sacrifice of unilateral recurrent laryngeal nerve due to local invasion of the tumor. After bilateral MRND, lymphatic fistula caused by injury to the left thoracic duct was treated by total parenteral nutrition in two patients for 2 weeks. Temporary hypoparathyroidism and vocal cord hypomotility were observed in 11 (28%) and 5 (12.8%) cases, respectively.

Discussion

Additional lymphadenectomy in papillary thyroid carcinoma has been a controversial subject over the years [14, 16, 19, 25]. Nevertheless, the proven high incidence of lymph node metastases at the time of diagnosis, as well as disease recurrence [10, 11, 13, 14, 16], has motivated many surgical teams to persist in operative detection of metastases to determine if additional procedures are indicated. Simon and colleagues reported a high incidence of regional lymph node recurrences after total thyroidectomy alone (45% in T2, 77% in T3, and 75% in T4) [26]. Supporting the argument that the presence of node metastases is associated with a higher recurrence rate in patients with PTC [16, 17], we concur that a radical approach to cervical nodes is justified when clear evidence of invasion exists. In the present study, we estimated the significance of the central zone of the neck (compartment A) in the route of PTC spread, as the basis for deciding whether to add MRND as supplementary therapy.

Previous investigators have reported that initial metastases are

Table 5. Age and sex related to lymph node metastases.

	Median age (years)	Range (years)	Sex (Female:Male)
N0	41.2	18–61	2.1:1
N+	41.3	17–72	1.2:1

most commonly observed in the pretracheal and paratracheal lymph nodes [16–18]. In fact, according to their surgical strategy, they proceeded to lateral MRND with clinical suggestions of the presence of lymph node metastases in the lateral neck.

According to our strategy, the decision of whether to proceed with unilateral or bilateral MRND is based on FSB findings from compartment A lymph nodes. The histopathologic results have justified this strategy, demonstrating that 80% of patients already had ipsilateral metastases and 52% had contralateral metastases at the time of operation. In a few cases with negative compartment A nodes on FSB ($n = 4$), we proceeded to MRND of ipsilateral compartment B, because these patients had T3 or T4 or enlarged nodes in the central compartment or the ipsilateral compartment. In these cases the histopathologic findings revealed nothing more than nonspecific lymphadenitis.

Mirallie and colleagues, in a retrospective review of bilateral lymph node dissection results, reported 15.3% non-involved paratracheal nodes in 72 node-positive patients [27]. In our series, all operated PTC patients with histopathologic evidence of absence lymphatic metastasis in compartment A were found to be disease-free at the time of operation. This condition was demonstrated by the histological reports of lymphadenectomy specimens and by postoperative radioiodine scanning and Tg levels. Direct lateral lymphatic spread to the jugular chain cannot be proved in our series. We did not observe any positive lymph nodes in compartments B or C if compartment A was not first invaded. These findings suggest that the first extension of extrathyroid papillary carcinoma should be the lymph node chains around the thyroid gland and down to the level of the superoanterior mediastinum. Otherwise, contralateral metastases in the neck, without bilateral multicentric thyroid tumor, suggest that the route of spread could be via the lymphatics of the inferior laryngeal chain. After these observations, we think that the cross spread points of PTC are the lymphatic nodes of the central cervical compartment. Presence of lymph node metastasis in this compartment, compartment A, appears to be a valuable landmark of lymphatic invasion of the lateral compartments. Therefore, surgical removal of the central compartment could control spread through this route.

Although it is not clear if more radical therapeutic approaches can significantly influence the course and eventual outcome of the disease in papillary thyroid carcinoma, we believe, as do many other investigators, that it is desirable to maximize the recurrence-free survival, and quality life expectancy in patients with PCT, especially of the central cervical region [9, 15–19, 26–28].

There is evidence that follow-up with Tg monitoring and scintigraphy with or without radioiodine treatment is optimized by the absence of thyroid tissue or metastatic foci. Consequently, in patients with PTC, systematic lymphadenectomy of compartment A and eventually compartments B and C, eradicates, or at least reduces, the amount of neoplastic thyroid tissue and therefore optimizes the conditions for radioiodine ablation.

According to our data, age, sex, or tumor grade had no effect on the presence and extent of cervical lymph nodes affected [17]. How-

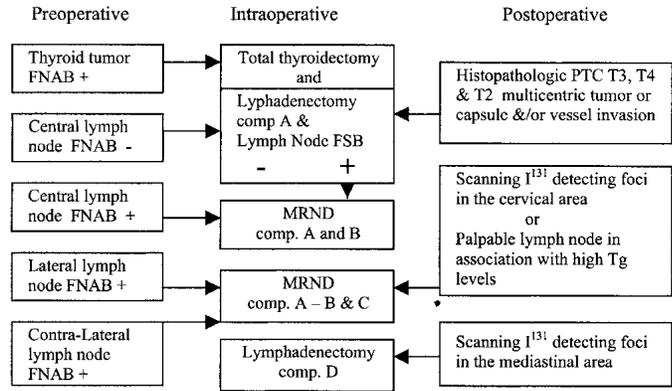


Fig. 2. Algorithm. Strategy in patients with papillary thyroid carcinoma.

ever, these data differ from other reports of large series where lymph-node metastases were observed more frequently in younger patients [15]. Relating to the histological type, we observed extended lymphatic spread more frequently in patients with the follicular variant than in patients with pure papillary thyroid cancer. The most significant difference was observed when multicentric tumor, capsule, and vascular invasion were present. In our series, the overall sensitivity of FSB in lymph nodes was very close to 100%. In many instances, positive nodes were found in compartment A lymphadenectomy specimens, without macroscopic evidence of metastasis. False-negative results were reported in only two cases with diminutive metastasis size. In many instances, the morphologic characteristics of invaded lymph nodes were almost normal, and in some other cases the morphology did not differ from that of lymph nodes with nonspecific lymphadenitis. Therefore, the nodal macroscopic evaluation alone does not guarantee the presence or absence of metastases.

In relation to the extension of the surgical treatment, we do not have a higher incidence of surgical complications in this group of patients compared to those undergoing total thyroidectomy only. When lymphadenectomy was confined to compartment A, the operative time was no more than half an hour longer than routine total thyroidectomy, but the hospital stay remained unchanged (2–3 days). In cases where MRND was performed, the mean additional operative time was 2 1/2 hours, and the overall postoperative stay was 4–6 days.

According to many reports, morbidity after reoperation in the central compartment of the neck is associated with a rate of recurrent nerve damage as high as 20% and of definitive hypoparathyroidism as high as 30% [4, 28]. To prevent recurrences in the peritracheal zone and to avoid the consequences of reoperation, a rational strategy consists in performing total thyroidectomy and meticulous total lymphadenectomy of compartment A for thyroid tumors larger than 1.5 cm with PTC diagnosis, especially those with capsular or vascular invasion or multicentric location. In cases when compartment A lymph node FSB were positive for metastasis, MRND of compartment B would be added. If FSB were negative but many metastases were found on definitive histopathology, MRND of ipsilateral compartment B could be performed without re-exploration of the central neck zone. Bilateral MRND, as well as lymphadenectomy of compartment D, is proposed in case of histological or scintigraphic evidence of metastatic disease (Fig. 2).

In this report, we attempted to focus on lymphatic spread rather than the influence on survival in PTC. The follow-up period in our

patients is short, and therefore further evaluation and long-term results are required; thus no real conclusions can be drawn about the influence of this strategy on recurrence or patient survival.

In conclusion, if the goal of this strategy is the complete resection of primary and metastatic tumor, then mapping of the cervical topographic anatomy in three compartments seems to be a useful taxonomy for elucidating the lymphatic spread of the PTC. Patients having PTC without metastasis in the central neck compartment (compartment A) are almost certainly disease free at the time of operation. Lymph node metastases in the central compartment appear to be a valuable landmark of lymphatic invasion of the lateral compartments and a strong indication for the performance of unilateral or bilateral MRND to avoid the consequences of reoperation for recurrent disease.

Résumé. Dans l'approche thérapeutique du cancer papillaire de la thyroïde (CPT), le curage ganglionnaire cervical (CGC) complémentaire est loin d'être largement pratiqué. Le but de cette étude est l'évaluation de la signification des compartiments cervicaux à la dissémination lymphatique du CPT et l'impact du curage ganglionnaire radical modifié (CGRM) comme geste chirurgical supplémentaire à la thyroïdectomie. Entre 1999 et 2002, CGC du compartiment central (Comp A) a été réalisée chez 39 patients. Dans ce groupe-ci, un CGRM complémentaire du compartiment homolatéral (Comp B) et du compartiment controlatéral (Comp C) a été réalisée chez 29 et 15 patients respectivement qui couvrent les critères de sélection. Le nombre moyen des ganglions enlevés dans chaque compartiment était de 11,38 (5–22) en Comp A, 23,65 (8–37) en Comp B et 22,33 (10–31) en Comp C. Les données anatomo-pathologiques ont montré un envahissement ganglionnaire du Comp A chez 25 patients (64,1%), des A et B chez 20 patients (51,2%) et des compartiments A, B et C chez 13 patients (33,3%). De ces 25 patients présentant des métastases (Mt) dans le Comp A, le 80% (20 patients) avaient également des Mt dans le Comp B et le 52% (13 patients) dans tous les trois compartiments. La totalité des patients qui ne présentaient pas de l'envahissement ganglionnaire dans le Comp A, ont été également libres des Mt dans les compartiments latéraux. La scintigraphie postopératoire à l'I¹³¹ de corps entier chez les patients M0, a révélé une absence de captation. La cartographie de l'anatomie topographique cervicale en compartiments pouvait être une taxinomie profitable pour aider à la compréhension de la dissémination lymphatique du CPT. Des patients avec un CPT qui ne présentent pas de Mt dans le Comp A, sont presque certainement libres de maladie au moment de l'opération. La présence de Mt ganglionnaire au niveau du compartiment cervical central semble être un indicateur valable d'envahissement ganglionnaire dans les compartiments latéraux et une forte indication pour procéder au CGRM uni ou bilatéral en assurant la résection total de mass tumoral.

Resumen. En el tratamiento del cancer papilar de la tiroide (CPT), la disección ganglionar (DG) suplementaria no se considera estandarizada. El proposito de este trabajo es valorar el significado de los compartimientos cervicales en relacion a la diseminacion limfatica del CPT y la importancia del vaciamiento ganglionar cervical radical modificado (VGCRM) como pracedimiento quirurgico adicional a la tiroidectomia. Entre 1999 y 2002, DG del compartimiento cervical anterior (CompA) fue realizada en 39 pacientes. En 29 de éstos que cubrian los criterios de seleccion, se procedió al VGCRM homolateral compartimiento (CompB) y en 15, adicionalmente del compartimiento contralateral (CompC). La media del recuento de ganglios resecados en cada compartimiento fueron 11 (5–22) en Comp A, 23 (8–37) en Comp B y 22 (10–31) en Comp C. Los hallazgos histopatológicos revelaron invasión del Comp A en 25 pacientes (64,1%), de los Comp A y B en 20 pacientes (51,2%) y de los Comp A, B y C en 13 pacientes (33,3%). De estos 25 pacientes con metastasis (Mt) en el CompA, el 80% (20 pacientes) tenian Mt en el Comp B y el 52% (13 pacientes) en los tres compartimientos. Todos los pacientes libres de Mt en el Comp A estaban igualmente libres de Mt en los compartimientos laterales. La escintigrafia I¹³¹ postoperatoria de cuerpo entero en los pacientes M0, reveló ausencia de captación. El trazado de la anatomía topográfica cervical en compartimientos parece ser una clasificación útil con el objeto de clarificar la diseminación linfática en el CPT. Pacientes con CPT sin Mt en el Comp A, están seguramente libres de

enfermedad para el momento de la operación. La presencia de Mt ganglionares en el compartimiento cervical central parece ser un valorable signo de invasión ganglionar de los compartimientos laterales y una fuerte indicación para proceder al VGCRM uni o bilateral con objeto de asegurar la resecion completa de masa tumoral.

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