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RESEARCH ARTICLE

INDICATIONS FOR THYROID SURGERYEXPERIENCE OF THE ENT DEPARTMENTOF MOULAY ISMAÏL MILITARY HOSPITAL IN MEKNES (ABOUT 103 CASES)

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Abstract

Introduction: The indications for thyroid surgery are currently well defined and specified in the consensus recommendations for the management of thyroid nodules, which would allow on the one hand to reduce the excessive number of thyroidectomies, and on the other hand would not allow a malignant lesion to evolve.

Objectives: Our study aims to evaluate the epidemiological, clinical and paraclinical characteristics of patients who have undergone thyroidectomy and to discuss the different surgical indications.

Patients and methods: This is a retrospective study spread over one year, from January to December 2019, involving 103 patients hospitalized for thyroid surgery, in the ENT (ear nose throat) department of Moulay Ismail military hospital in Meknes.

Results: The average age of our population was 50.68 years and the sex ratio W/M was 5.86. The time to consultation was more than 2 years in half of the patients. The reason for consultation was cervical swelling in 88 cases, signs of hyperthyroidism in 27 cases and compression in 15 cases**.** All our patients have benefited preoperatively from a TSH assay and a cervical ultrasound. A cervico-thoracic scan was performed in all patients with plunging and/or compressive goiter. Cytopuncture could only be performed in 10 cases.Surgical indications were retained in case of suspected malignancy (56.31%); hyperthyroidism (26.22%), compressive goiter (14.56%), aesthetic discomfort (1.94%) and recurrent thyroid cyst (0.97%)The surgical procedure consisted of a total thyroidectomy in 81.5% of cases, a lobo isthmectomy in 8.7% of cases and secondary totalization in 9.7% of cases. The pathological study revealed thyroid cancer in 11.65% of cases. Postoperative follow-up was marked by the occurrence of a compressive hematoma in one patient, transient unilateral recurrent paralysis in 2 patients, transient hypoparathyroidism in 6 patients, and tumor recurrence in one case

Discussion: Surgical indications have been proposed, primarily in case of suspected thyroid neoplasia, mainly based on clinical and ultrasound criteria. The cancer/benign tumor ratio was 13.2%. It was therefore important to develop the cytopuncture.Autonomous goiters/nodules and compressive and/or plunging goiters were the main other indications for surgery with low morbidity, but at the cost of permanent hypothyroidism.

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Conclusion: Surgery is the gold standard treatment for symptomatic thyroid goiters/nodules. However, its contribution must be constantly reassessed according to the evolution of new diagnostic procedures and alternative techniques.

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Introduction:-

Goiters and thyroid nodules are a common reason for ENT consultation. With evolution, these swellings can be complicated by empowerment, with the appearance of thyrotoxicosis, neoplastic transplantation, become compressive and / or plunging, finally cause aesthetic discomfort for the patient. Surgical indications by thyroidectomy can then be proposed.

The objective of our work is to evaluate the epidemiological, clinical and paraclinical characteristics of patients who have benefited from a thyroidectomy (partial or total) within our department, to discuss the different surgical indications of these thyroid pathologies and the contribution of explorations (imaging, cytopuncture with cytological study), for a better selection of patients to be operated.

Patients And Methods:-

This is a retrospective study spread over 1 year, from January 2019 to December 2019, involving 103 patients hospitalized in the ENT department of Moulay Ismail military hospital in Meknes, for thyroid surgery (thyroidectomy or Lobo-isthmectomy), we included in this study all male or female patients of all ages, thyroid surgery, we excluded incomplete and unusable files from this study.

For the realization of our work, we have developed an operating sheet including the various epidemiological, clinical, paraclinical, therapeutic, evolutionary, and anatomopathological data. With regard to ethical considerations, data collection was carried out with respect for anonymity.

The processing and analysis of the data collected, was carried out on Excel software, with electronic bibliographic search using Google Scholar, Pub Med search engines.

Results:-

103 patients benefited from a thyroidectomy out of a total of 784 surgical operations performed in the ENT department of the military hospital of Meknes, a relative frequency of 13.13%.

The sample consisted of 15 men and 88 women, giving anW/M sex ratio of 5.86. The average age of patients was 50.68 years, with extremes of 28 years and 83 years, moreover, the average age of patients with thyroid cancer was 52.58 years

23 patients came from mountainous regions representing 22.33% of the patients in our series.

The time to consultation was more than 2 years for half of our patients. The reason for consultation was mainly represented by cervical swelling 88 patients (84.43%), it is isolated in 56.31% of cases, 27 patients presented a thyrotoxicosis picture (26.21%), related to a hot nodule in 5 cases, toxic GMN in 18 cases and Graves' disease in 4 cases, 15 patients showed signs of cervical compression (14.56%).

All our patients have benefited preoperatively from a TSH assay and a T4L assay in 83% of cases. It should be noted that out of the 27 patients with hyperthyroidism antecedent, 23 patients benefited from medical treatment by synthetic antithyroidbefore surgery, 5 patients were under treatment by b blockers, which made it possible to control hyperthyroidism.

One patient with familial medullary thyroid carcinomaantecedent had a negative thyrocalcitonin test.

All our patients have benefited from a cervical ultrasound. In the majority of cases (90.3%), it was a nodular pathology.14 patients had EU TIRADS 2 nodulesrepresenting 13.59%, 59 had EU TIRADS 3 nodules which is

57.28%, 49 had EU TIRADS 4 nodules (47.54%), 13 patients had EU TIRADS 5 nodules (12.62%). Out of 86 patients with ≥ 2 nodules, 38 patients had thyroid nodules with different EUTIRADS classification.

Only 10 patients received thyroidcytopuncture: 8 patients were classified Bethesda III, while 2 patients were classified Bethesda IV.

A cervicothoracic scan was performed for 17 patients. All patients with toxic nodular goiter have benifited from a scintigraphy.

Surgical indications were represented by (Fig 1):
- Suspicion of malignancy in 58 patients (56.31%).
- Plunged compressive goiter in 15 patients, (14.56%). (Dyspnea was the main objectified compressive symptom in 7 cases. The surgery lifted the compression in all cases. 4 patients developed dysphagia, and 4 other patients had dysphonia)
- The hot nodule or toxic nodular goiter in 23 cases(22.33%).
- Graves' disease in 4 cases(3.88%). The surgical indication was retained in the context of Graves' disease because of: Recurrence of Graves' disease after discontinuation of medical treatment in 3 cases, intolerance to synthetic antithyroid drugs in 1 case.
- A recurrent thyroid cyst in 1 case (0.97%).
- Aesthetic reasons in 2 cases(1.94%).

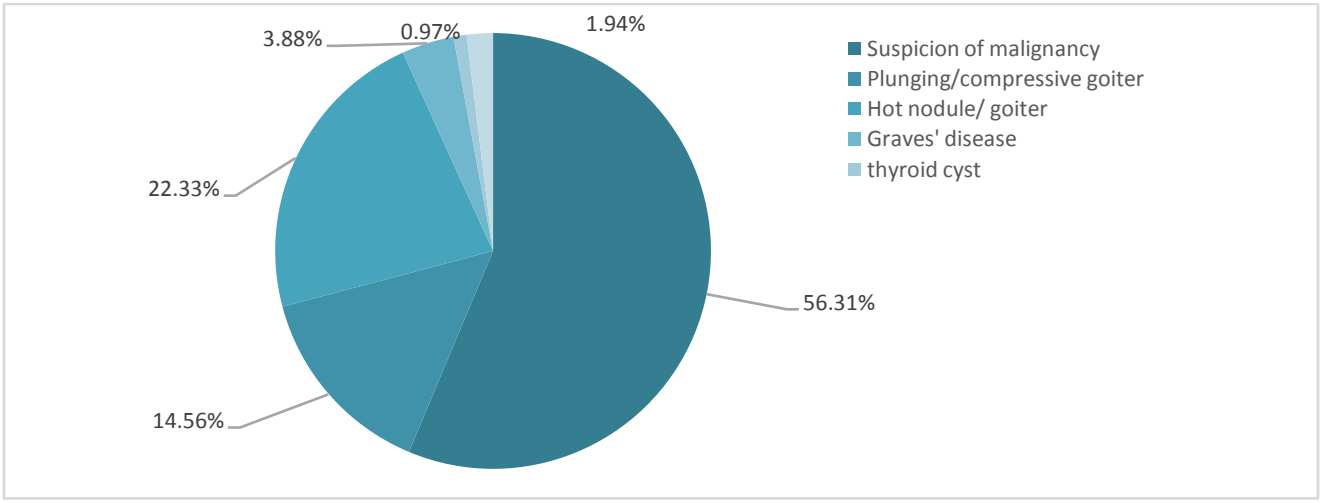

Fig 1:- Distribution of patients by surgical indications.

Thyroid surgery consisted of: Total thyroidectomy for 84 patients, lobo-isthmectomy including 6 right and 3 left for single nodule, secondary totalization for 10 patients with ATCD thyroid surgery, 6 patients with PDAs underwent central lymph node dissection, associated in one case with lateral dissection.

Regarding histopathological results, of the 103 patients: 84 had adenomatous hyperplasia of the thyroid gland, 4 had a histological appearance in favor of Graves' disease, 2 had Hashimoto-type thyroiditis, 1 had a necrotic thyroid cyst, only 12 patients had thyroid carcinoma (1 vesicular carcinoma and 11 papillary carcinomas with as subtypes: 5 papillary microcarcinomas, 3 classical variant papillary carcinomas, 3 follicular variant papillary carcinomas). (Fig 2)

The lymph node curage was in favor of: lymph node metastases from papillary carcinoma in 2 cases and vesicular carcinoma in 1 case, inflammatory adenitis in 2 cases and tuberculous adenitis in 1 case.

The postoperative period was marked by the occurrence of a compressive hematoma in one case, transient unilateral recurrent paralysis in 2 patients, and transient hypoparathyroidism in 6 cases. We found one case of recurrence of papillary carcinoma with local, regional and distant extension (cerebral), 4 years after surgery the patient died. We did not find a recurrence of goiter.

All patients who received total thyroidectomy received hormone replacement with levothyroxine. Out of the 9 patients who received a lobo-isthmectomy only 4 patients were put under hormone replacement.

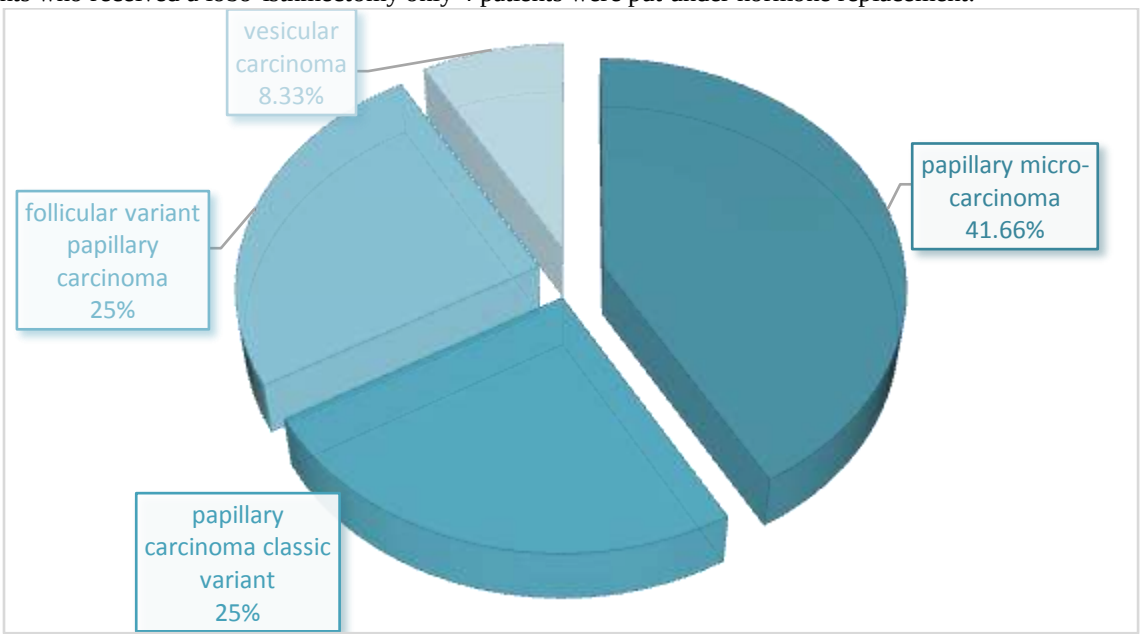

Fig 2:- Types of thyroid carcinomas.

Discussion:-

The frequency of thyroidectomy 13.13% is close to the results foundin the literature, Vigniki [1] reported a frequency of 14.96% thyroidectomies on 3523 surgical procedures performed, and F Poumale reported a frequency of 3.7% on 3662 cases [2]. This strong surgical activity can be explained by the iodine deficiency that plagues our region.

The average age of our patients was 50.68 years and the sex ratio W/M was 5.86 which agrees with the Castellnoua study [3] in 2020 where the average age was 50.5 years, with a sex ratio W/M of 3.55, this sex ratio testifies to the role played by the presence of sex steroid receptors in thyroid follicular cells.

The consultation time is variable in our study, half of the patients consulted during the first 2 years. This delay diagnosis is largely explained by the indolent nature of this pathology, which becomes symptomatic only in case of compressive signs or signs of dysthyroidism.

All our patients have received a TSH test before surgery and a T4L assay in 83% of cases. It is indeed recommended to systematically perform a TSH assay in front of any simple or nodular goiter, if the TSH concentration is below the reference values, it must be controlled and the T4L assay must be carried out. T3 testing can be performed if T4 is normal. In our study, T4L testing was widely prescribed even when TSH was normal. This can be explained by the concomitant prescription of these two tests, for the sake of saving time.

In our series, all patients had a cervical ultrasound pre-operatively. Ultrasound characterization of thyroid nodules has made it possible to find a predominance of nodules classified EUTIRADS 4 and 5. ETA [4], found more than 2/3 of the thyroid nodules of benign appearance on ultrasound (EUTIRADS 2 and 3) and only 5% of the nodules had a strongly suspicious appearance (EUTIRADS 5). This difference in the results compared to our series, can be explained by the surgical activity of our service; recruiting more suspicious nodules or benign-looking nodules of size > 2 cm.

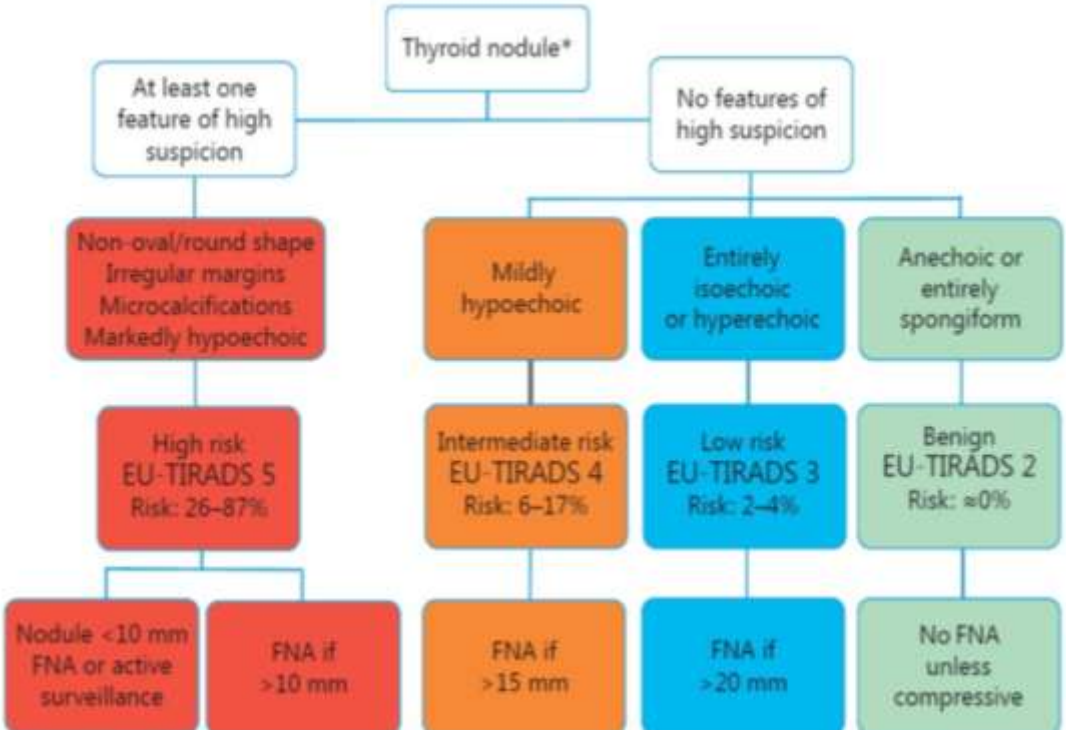

Fig 3:- EU-TIRADS algorithm.

In our study only 10 patients underwent cytopuncture. Due to the unavailability of ultrasound in the endocrinology and ENT departments of the HMMI in 2019, currently the availability of ultrasound in hospital departments, with ultrasound-guided cytopunctures, makes it possible to better select patients for surgical procedures. These indications were mainly represented by the suspicion of malignancy 56.31%, on clinical and / or ultrasound and / or cytological criteria. The ratio of cancer to thyroidectomy was 11.65%. In the study conducted in France by the CNAM [6], the cancer/thyroidectomy ratio was 17% [7]. The proportion of thyroidectomy for benign nodule therefore seems high, moreover this gesture is not trivial (risk of damage to the vocal cords, parathyroid glands, hematoma, permanent hypothyroidism ...). It was therefore important to develop cytopuncture with cytological study within our training.

12 patients presented with thyroid carcinoma including vesicular carcinoma and 11 papillary carcinomas with as subtypes: 5 papillary micro-carcinomas, 3 papillary carcinomas classical variant, 3 follicular variant papillary carcinomas.

Our results are consistent with those of the literature. Since papillary cancers represent more than 84% of thyroid cancers, with essentially as histological variants the papillary micro carcinoma and the classic variant.

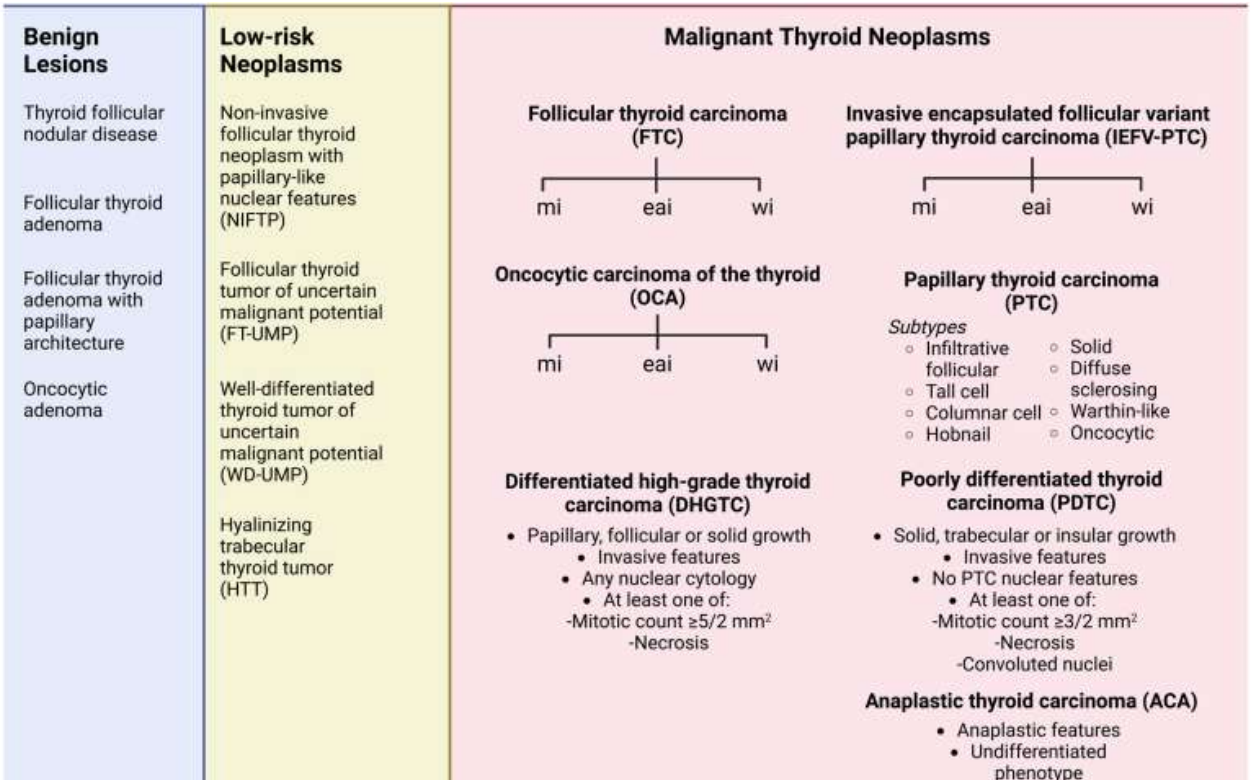

Fig 4: Main diagnostic groups of the 2022 WHO Classification of Thyroid Neoplasms [8].

In our series, 17 patients presented with plunging, compressive goiter in 15 cases, dyspnea was the main objectified compressive symptom in 7 patients, dysphonia in 4 patients, and dysphagia in 7 patients, no cases of vascular compression were found. The surgery lifted the compression in all cases. It is recommended [9] to perform before any surgery in the presence of compressive signs a gastroenterological and ENT assessment to exclude differential diagnoses. The realization of the scan, made it possible to establish, the site and the level of compression. According to the latest recommendations of the SFE [10]: a symptomatic positional or orthopnea dyspnea, most often corresponds to a tracheal diameter less than 8mm, and it is recommended surgical management, for an elderly and symptomatic patient with comorbidities against indicating goiter surgery, rigid bronchoscopy will be proposed with placement of a stent.

It is also not recommended to puncture a nodule within a plunging goiter because of the risk of pneumothorax or deep hematoma, which can be compressive in case of intrathoracic nodular bleeding.

27 patients were operated on for hyperthyroidism, or 26.21% of our population. The surgical indication was preferred in toxic adenomas and multinodular goiters, especially since the patients were young, large goiter, concomitant presence of a suspicious nodule or iodine fixation not sufficient on scintigraphy.

The gesture consisted in our series of a unilateral lobectomy in all 5 cases.

For toxic multinodular goiters, we used a total thyroidectomy that cured hyperthyroidism in 18 cases.

The 4 cases of Graves' disease, underwent a total thyroidectomy, after recurrence of the disease following medical treatment in 3 cases, and intolerance to synthetic antithyroid drugs in 1 case.

What is consistent with the data in the literature indeed, subtotal lobectomy is indicated in the single and well limited toxic adenoma, total thyroidectomy is indicated for toxic GMNH and recurrent Graves' disease or resistance to ATS.

Finally, the surgical indication can be proposed or requested by the patient himself because of aesthetic discomfort, which was the case for 2 patients in our series.

The main complications during our study were represented by the occurrence of a compressive hematoma in one case, transient unilateral recurrent paralysis in 2 cases, transient hypoparathyroidism in 6 cases, and tumor recurrence in one case. According to the data from the literature, the rate of postoperative hematoma should be less than 1%, the rate of definitive hypocalcemia should be less than 2% the rate of permanent recurrent paralysis should be less than 2%. [10,11]

The risks, in particular the recurrent and parathyroid risk, must have been explained to the patient, as well as the consequences of the gesture with the need for lifelong hormonal replacement (systematic in case of total thyroidectomy, possible after lobectomy), substitution dose or braking dose in case of cancer to avoid recurrence.

Surgical complications	**Our series**
Compressive hematoma	1
Infection of the wall	0
Transient unilateral recurrent paralysis	2
Bilateral recurrent paralysis	0
Transient hypoparathyroidism	6
Permanent hypoparathyroidism	0
Tumor recurrence	1
Recurrence of goiter	0
Permanent hypothyroidism	103

Table 1:- Surgical complications in our series.

While surgery is the gold standard treatment for symptomatic benign thyroid nodules, its benefit-risk ratio needs to be re-evaluated due to the improved reliability of diagnostic procedures.

The challenge of the coming years is also the development of therapeutic alternatives such as thermoablation, percutaneous alcoholization. These can take an important place for patients who wish to avoid a risk of post-operative hypothyroidism, reduce the risk of complications inherent in surgery and benefit from simpler post-operative follow-ups. [12-13-14]

Conclusion:-

Thyroid surgery in the ENT department of the HMMI of Meknes is widely indicated in case of suspected thyroid neoplasia, signs of compression or hyperthyroidism. The results are good, with low morbidity, at the cost of hypothyroidism often permanent.

The development of cytopuncture, over the last 3 years, will make it possible to better select patients who are candidates for thyroid surgery, in order to limit the number of unnecessary surgeries performed for benign tumors that do not require, for the most part, any specific therapy, and to get closer to international recommendations.

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