

Thyroid Carcinoma in Children and Adolescents: About a Series of 26 Cases and Systematic Review of the Literature

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Summary: It is a retrospective study involving 26 patients with thyroid differentiated cancers whose age is less than 20 years collected in our service between 1982 and 2015. The sex ratio is 22 girls per 4 boys with a Average age of 15.3 years (4 -20). In all cases, it was papillary carcinoma. The association with a vesicular component was found in 30%. The extension report found ganglion metastases (15.8%) of the pulmonary metastases (15.8%), bone metastases And adrenal adenomas each in 7.7% .The capsular fracture was noted in 80, 8%. After a mean follow-up of 8.9 ± 1.2 years, no mortality was observed. 8 (30.8%) are in complete remission, the other patients are always evolutionary and benefit from iterative treatment by I131

Keywords: Thyroid papillary carcinoma, metastasis, I131, TNM classification

I. Introduction

The thyroid carcinomas of the young subject represent 0.3-3% of pediatric cancers and 5 -10% of thyroid cancers. Such as the adults, the differentiated thyroid carcinoma is the most commonly found, especially the papillary carcinoma. The tumor volume tends to be larger. They have a higher probability of cervical lymph node metastasis(1) (2)

Compared to adults, they are characterized by their more aggressive character with secondary sites frequently found at the time of diagnosis. The prognosis of these tumors in childhood is a very interesting issue. Despite having a greater recurrence rate when compared to adults, survival seems to be better (3). The aim of our work is to analyze the clinical, histological and evolutionary characteristics of thyroid cancers in children and adolescents.

II. Materials And Methods

It is a retrospective study of children and adolescents with thyroid cancer followed between 1982 and 2015. The age at diagnosis was less than or equal to 20 years. All patients underwent clinical examination and specific thyroid exploration (cervical ultrasound, fine needle aspiration thyroid, thyroid assessment, téléthorax, abdominal ultrasound). The staging was completed by patient context. After the exploration, patients underwent surgery (thyroidectomy \pm laterocervical lymphadenectomy and récurrentiel) Histopathological study of surgical specimens were routinely performed.

After surgery, patients received a course of irathérapie and were put under suppressive therapy with levothyroxine. Patients were monitored regularly with clinical, biological (Determination of TG in braking and defreination) and radiological reevaluations (post-I131 totocorporeal scintigraphy)

III. Results

26 children and adolescents with thyroid cancer were followed in 33 years 22 of them are girls either a sex -ratio F / G of 5.4. The mean age at diagnosis is 15.46 years (4-20 years). Given the advanced tumor stage and the presence of latrocervical metastasis, the majority of patients (80.8%) underwent total thyroidectomy with lymph node dissection.

The histological study of the thyroidectomy pieces was in favor of differentiated carcinomas in all cases. The papillary form was constant. The association with a vesicular component was noted in 8 cases (in 30, 8% of cases). Nearly half of the cases of ganglion metastases were found (12/26, 46. 1%). Capsular involvement was observed in 21 cases (80.8%). Treatment was systematically completed with a I131 cure. Scintigraphy totocorporel therapeutic post revealed lung metastasis in 4 cases (15.38%), bone metastasis noted in 2 cases (7.7%) and adrenal metastasis (2 cases or 7.7%).

Tous les patients étaient à un stade tumoral avancé (TableauI) Tableau I: Répartition des patients en fonction du stade tumoral

Stade Tnm	Number	%
T1	-	
T2	5	19,2
T3	19	73,03

N1M0	7	26,9
N1M1	6	23,07
T4	2	7,7
N1M1	2	7,7

TG levels in braking and defreination were high . Mean of TG respectively at 64 ± 5.6 ng / ml and 98 ± 6.8 ng / ml requiring further I131 cures and therapeutic complement: Bone and Adrenal Surgery n: 6 (23.07%), radiotherapy n: 4 (15.4%)

After a mean follow-up of 8.9 ± 1.2 years, no mortality was observed. 8 (30.8%) are in complete remission, the other patients are always evolutionary and benefit from iterative treatment by I131

IV. Discussion

Thyroid cancer is the third most common solid tumor malignancy and the most common endocrine malignancy in children. It occurs four times more often in females than males and has similar characteristics as adult thyroid cancer. The differentiated thyroid carcinoma is the most commonly found, especially the papillary carcinoma (1)

Furthermore, the incidence of thyroid cancer seems to increase with age. In a series with 235 children and adolescents who followed Maria Skłodowska Memorial Cancer Center and Institute of Oncology for thyroid cancer, 5% were diagnosed under 6 years old, 10% with 7–9 years, increasing substantially after 10 years old. The difference between boys and girls was seen more clearly after 13-14 years old (4).

As in adults, a thyroid nodule (localized lump or mass) is a common symptom of thyroid cancer. Thyroid nodules that develop in children and adolescents are even more likely to be cancerous than thyroid masses in adults. In adults with thyroid nodules, only about 5% turn out to be cancer. In children and teens, that that percentage increases to over 26%. All children or teens who develop a lump in the thyroid or neck should be evaluated by a physician in order to ensure early diagnosis and treatment if cancer is indeed present (5).

Most childhood thyroid nodules are asymptomatic and are detected by parents or by physicians during routine examination. Only about 50% of children with thyroid carcinoma present with nodular thyroid enlargement as the presenting symptom. Follicular adenoma is the most common cause of solitary thyroid nodules in the pediatric population; however, solitary nodules in children reportedly have a 20-73% incidence of malignancy (6)(7) . A painless noninflammatory metastatic cervical mass is the presenting symptom in 40-80% of patients (1)(2). Malignant lesions are usually papillary and follicular carcinomas. Radiation exposure, which is still used either as therapy prior to bone marrow transplantation or as a treatment of Hodgkin disease, remains a major risk factor (8)(9).

When compared to adults, children have four times greater risk of malignancy when a thyroid nodule is diagnosed (10). The histological subtype follows a distribution similar to adults: 90–95% papillary carcinomas and 5% follicular . Poorly differentiated tumors as insular and anaplastic are extremely rare (11).

Despite the fact that pediatric thyroid cancer usually presents at an advanced stage, it carries an excellent prognosis, with long-term survival rates greater than 95%. An image depicting thyroid cancer can be seen below (2). Surgery is the preferred treatment for this cancer. Although the procedure is often uncomplicated, risks of thyroid surgery include vocal cord paralysis and hypocalcemia. Consequently, an otolaryngologist—head and neck surgeon, one experienced with head and neck issues, should be consulted (10) .

In children with papillary or follicular thyroid cancer, total thyroidectomy is currently the standard of practice, as children typically have more extensive disease at presentation, have higher rates of spread, and it reduces the risk of recurrence. In children, there is an increased need for repeat surgery when less than a total thyroidectomy is performed. Lymph nodes in the neck may need to be removed as part of the treatment for thyroid cancer if there is suspicion of spread of cancer to the lymph nodes (12) (13).

Surgery may be followed by radioactive iodine therapy, to destroy cancer cells that are left after surgery. Thyroid hormone therapy may need to be administered throughout your child’ s life to replace normal hormones and slow the growth of any residual cancer cells (14).

In most cases, one dose of radioiodine treatment is capable of achieving complete ablation; however, the procedure may have to be repeated usually 6–12 months after the first (15)(16). If cancer has spread to other parts of the body, chirurgy and radiation treatment may also be required for treatment of some forms of thyroid cancer.

In general, treatment outcomes for this type of cancer in children tend to be excellent. The best outcomes are seen in teenage girls, papillary type cancer, and tumors localized to the thyroid gland (17).

V. Conclusion

Although children with DTC typically present with locoregional metastases and a high rate of distant metastatic disease, overall survival is very good. Treatment should be based on their increased risk for

recurrence instead of overall mortality, and lifelong followup is required because recurrence and death may not occur for decades after diagnosis.

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