

# Thyroid Abscess in Children: A Case Report

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**Abstract**— Thyroid abscess is a rare disease entity. It is an unusual situation because of the anatomical and physiological characteristics of the gland which gives it a capacity to resist infection. We reported the case of a patient 4 years old, who was consulted following ;We report the case of a 4 year old patient who presented with a left cervical inflammatory mass that had been evolving for 5 days. The initial biological work-up showed a positive infectious syndrome, and a cervical CT scan confirmed a collection in the left lobe of the thyroid. A thyroid work-up was normal. The therapeutic attitude consisted in the administration of probabilistic antibiotics. The clinico-biological and radiological evolution was favorable. The etiological investigation came back negative. This is why further medical research is necessary, especially as the results of the etiological investigation remain limited in the case of paediatric thyroid abscess.

**Index Terms**— Thyroid abscess, cervical CT scan.

## I. INTRODUCTION

Thyroid abscess is a rare disease entity. It is an unusual situation because of the anatomical and physiological characteristics of the gland that give it a capacity to resist infection. It is even rarer in children [1].

## II. OBJECTIVE

To report the medical observation of a paediatric case of thyroid abscess while analysing the clinical, paraclinical, therapeutic and evolutionary data.

## III. MEDICAL OBSERVATION

We report the medical observation of a patient admitted to the paediatric emergency department for thyroid abscess.

The patient was a 4-year-old boy with no previous history of illness. The clinical examination revealed a swelling that was painful to palpation, inflammatory, mobile when swallowed, and had been evolving for 5 days, associated with left cervical adenopathies and a fever of 39°C. The initial biological work-up showed an infectious syndrome with a CRP of 96 and a hyperleukocytosis of 15280. A cervical CT scan confirmed a collection of the left lobe of the thyroid measuring 47/27 mm. A thyroid work-up was normal (TSH =1.63 T4= 19.6). The therapeutic attitude consisted in the administration of probabilistic antibiotics based on amoxicillin and clavulanic acid for 10 days, 5 days of which

were administered intravenously. The clinico-biological and radiological evolution was favourable, in fact the abscess regressed in size clinically and radiologically with a control CRP of 15. The etiological investigation, which included an immunological assessment, tuberculosis assessment and radiological investigations of congenital thyroid malformations, was negative.

## IV. DISCUSSION

Generally the symptomatology is non-specific, consisting of fever, pain, basal-cervical mass, and respiratory signs that can be seen in the newborn, therefore the doctor is faced with a delay in diagnosis. [1]

In most studies, the biology shows an inflammatory syndrome with neutrophilic hyperleukocytosis, usually with a normal thyroid work-up [2], which was the case in our medical observation. In contrast, M, Sanalkumarn and Persaudr published a rare case of thyroid abscess associated with hyperthyroidism [2]. In a review of the literature for thyroid abscesses in children, 11.3% of cases had hypothyroidism while 17% of cases had hyperthyroidism [3].

Cervical ultrasound and CT are essential examinations to study the structure of the abscess, its size, and its relationship with adjacent anatomical structures, particularly with the vascular-nervous bundle of the neck and the upper airways, not forgetting their importance in monitoring the evolution [3,16]. In addition, cervical CT and MRI are of interest in the etiological diagnosis in search of congenital malformations [4].

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Figure 1 and 2: Scans showing a left cervical-ischemic thyroid area (abscess in the process of collection)

In children, thyroid abscess occurs in most cases as a complication of hypopharyngeal fistula [1]. However, other causes of suppuration should be suspected, including trauma, foreign body, immunodeficiency, haematogenous dissemination during sepsis, or tuberculosis [5]. Reviews of the literature also suggest the possibility that the immune system is negatively influenced by infections such as mononucleosis a few months prior to the abscess, and according to several case reports, many thyroid abscesses have occurred after upper respiratory tract infections [6,7].

However, the aetiologies remain poorly elucidated which is consistent with the results of the aetiological investigation of our case which came back negative.

In the literature, the management consisted of the administration of broad-spectrum parenteral antibiotics to ensure an antibiotic therapy that could cover typical microorganisms such as staphylococci, pneumococci, streptococci and anaerobes, with a recommended duration of treatment between 10-14 days [4]. Surgery is reserved in case of failure of drug treatment and for surgical excision of cysts, tracts and or fistulas [1].

The evolution of our case was favourable with treatment, but untreated thyroid abscess can have untoward consequences on the surrounding organs [8]. Destruction of the thyroid glandular parenchyma and parathyroids, thrombophlebitis of the jugular vein may result. Fistulisation of the abscess into the oesophagus or tracheal lumen, external fistulisation to the skin or sepsis and blood dissemination to distant organs [9].

## V. CONCLUSION

Thyroid abscess is certainly a rare pathology in children, and radiological investigations have played a major role in the positive diagnosis of this pathological entity. However, further medical research is needed, especially as the results of the etiological investigation remain limited in the subject of paediatric thyroid abscess.

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