CASE REPORT

THYROID ABSCESS IN CHILDREN: AND THE WORLD GETS STRANGER

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The eminent feature of the thyroid gland in its resistance to infection by virtue of a rich blood supply and lymphatic drainage. Concomitantly, high iodine content is also bactericidal. Acute suppurative thyroiditis, which leads to primary thyroid abscess, is an unusual type of head and neck infection. And above all, if it is in a paediatric age; it is quite rare. We have the opportunity to present such a noticeable case which was treated successfully by oral antibiotic therapy.

Keywords: Thyroid abscess; Suppurative thyroiditis; Surgical management

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INTRODUCTION

Thyroid abscess is not a frequently encountered case in ENT or paediatric clinics.[1] Amongst thyroid disorders, thyroid abscess and acute suppurative thyroiditis constitute 0.7–1% of all cases. Acute suppurative thyroiditis is an overtly rare and uncommon clinical event.[2] The presentation of abscess in thyroid tissues and, top of it, in the age group of children, is quite rare. Routinely it manifests as tender neck swelling. The diagnostic tools are clinical examination and radiological features. However, the treatment comprises of: oral or parenteral antibiotics, percutaneous aspiration or a surgical incision and drainage.

The rarity of infection in the thyroid gland is attributed to it unique features: fibrous encapsulation of the gland, high local iodine and hydrogen peroxide concentrations, a secluded anatomical position, extensive blood supply and efficient lymphatic drainage.[3] This makes the gland remarkably resistant to bacterial infections. However, certain congenital malformations, such as pyriform sinus fistula or thyroglossal duct remnant, assist in the development of infection. In addition to it, haematogenous and lymphatic spread as well as direct invasion from surrounding infected tissues may result in acute suppurative thyroiditis.

The main offending agents of this are gram-positive streptococcus species.[4] The rupture of abscess into the trachea or oesophagus is also possible. In spite of outpatient parenteral antibiotic therapy, majority of cases require surgical drainage in combination with the removal of any contributing anatomical abnormality in order to minimise the recurrence of abscess formation.[5]

CASE REPORT

A young girl, 5 years of age, was brought to the ER when she was running fever continuously for the last four days. Fever was of high grade, i.e., 39 °C. The fever was not associated with chills or rigors and she used oral acetaminophens to get relief. Her past history was insignificant. As far as the general physical examination was concerned, a girl of normal height and built, febrile with no positive findings in chest and abdomen. She was suffering from mild cough and rhinorrhoea with mild erythematous pharyngitis. She developed neck swellings two days before arrival which leaded to painful neck movements. The thyroid gland was warm, tender and softly swollen more on the left side of the neck. Initial laboratory investigations showed WBC count of $11x10^3$/mcl with neutrophilia of 60.4%. CRP was 96 mg/l. Ultrsosnography of the thyroid gland showed collection measuring 20.5x19 mm at the left lobe. She was treated successfully by oral antibiotics. We prescribed Amoxicillin clavulanate (according to weight) for 10 days. On 4th day of antibiotics, she was improved 50% and on 7th day, she was absolutely symptoms free. We continued the treatment for 10 days as per recommendations.

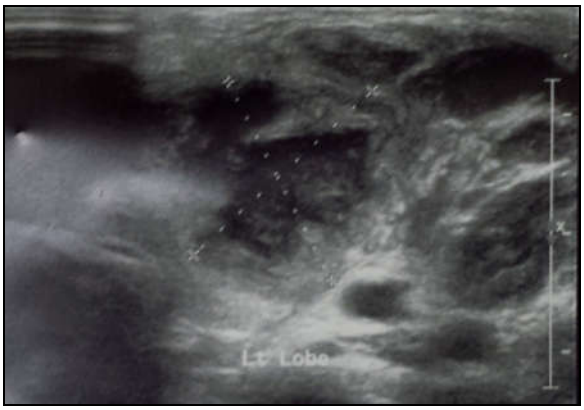

Figure-1: Abscess in thyroid gland

DISCUSSION

Thyroid abscess is an uncommon presentation and it is the rarest form of thyroiditis.[4,6] If it happens, the victims are immune-compromised.[6] Some cases have

been reported with vocal cord paralysis and others without any symptoms.[7] Thyrotoxicosis, nodular goitre, ectopic thyroid tissues, thyroglossal duct cyst, branchial cleft cyst, thyroiditis, cellulitis of neck, cat-scratch disease, laryngeal perichondritis, retropharyngeal abscess, sarcoidosis, laryngocele, thyroid carcinoma, parathyroid carcinoma, metastatic carcinoma of head and neck, vascular aneurysm should be considered as differential diagnosis.[8] Leucocytosis, increased ESR with normal thyroid function tests are common biochemical findings.[9–11] The left lobe was involved in my patient which deems to be a common effect.[1,2,12]

As far as diagnostic modalities are concerned, thyroid scans often exhibit hypofunctional areas with reduced tracer uptake.[4,13] However, plain neck roentgenogram may reveal oesophageal or tracheal deviation.[11] Ultrasnongraphy is the initial, foremost and non-invasive diagnostic tool. It provides the factual information of abscess and lacks ionizing radiations as well. It can also delineate the other important features of thyroid gland and surrounding structures. Our patient, in the same manner, was diagnosed by this inexpensive and widely accessible modality.[2,4,6,10,12]

On the other hand, a CT scan conceals its importance to investigate for anatomic defects or fistulous formation, particularly in the younger age group and those with recurrent events.[11,12,14,15] The usual pathogens are Gram+, such as Staphylococcus aureus and Streptococcus pneumoniae. Less common agents are Salmonella, Mycobacterium tuberculosis, *E. coli* and Haemophilus influenza. Mycotic abscesses have also been reported.[6–8] Either CT guided or ultrasound guided fine needle aspiration is a simple procedure to confirm the diagnosis.[4–6,8,11] The placement of percutaneous drainage catheter via CT or US guided can be considered as well.[4] The recommended duration of treatment by antibiotics in acute suppurative thyroiditis is 10–14 days.[3] Acute suppurative thyroiditis can lead to the destruction of the thyroid or parathyroid glands, internal jugular vein thrombophlebitis, rupture of abscess or fistula formation into the trachea or oesophagus and sepsis.[11,16]

CONCLUSION

Although thyroid abscess is a rare clinical condition, the diagnosis can be considered if the clinician has a high index of suspicion. Ultrasonography should be regarded early in the course of the imaging process by virtue of its lack of ionizing radiations and its ability to perform minimally-invasive percutaneous treatment.

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