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### Research Article

## Acute Suppurative Thyroiditis , really a forgotten entity? Cytodiagnosis of two uncommon cases

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### Abstract

#### Keywords

Acute Suppurative  
Thyroiditis;  
*Staphylococcal aureus*;  
Fine Needle  
Aspiration Cytology;  
Neutrophils.

Acute Suppurative Thyroiditis is an uncommon inflammation of the thyroid gland, commonly seen in females between 20 to 40 years of age. These are two uncommon cases; one is a 30 years male & the other 60 years female, both presented with neck swelling of short duration in the medical outpatient department of Subharti Medical College, Meerut. FNAC was attempted, wet and dry preparations made, stained with Leishman, giemsa, Pap and H & E stains and examined microscopically. In both cases, smears revealed viable and degenerated neutrophils, few macrophages and poorly preserved mononuclear inflammatory cells. Amidst this, few small monolayered sheets of follicular epithelial cells were found. In one of the cases background showed granular proteinaceous material and thin colloid. Diagnosis of Acute Suppurative Thyroiditis was made in both the cases with an advice for culture and sensitivity examination. Both the cases were positive for *Staphylococcal aureus*, the patients were treated with antibiotics and the swelling subsided. Conclusion: Our cases were diagnosed as having Acute Suppurative Thyroiditis, one was male of 30 years infected with *Staphylococcal aureus* and the other was female of 60 years. A simple, cost effective and quick procedure like FNAC proved to be of immense help in diagnosing Acute Suppurative Thyroiditis rather than more elaborate tests like thyroid profile and ultrasonography.

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### Introduction

Acute Suppurative Thyroiditis is an uncommon inflammation of the thyroid gland, occurring between 20 to 40 years of age, more in females.<sup>[1]</sup> It is characterized by abrupt onset of fever with local signs of inflammation in the neck region. Dysphagia and tenderness are common. Differentiation between acute and subacute thyroiditis is important because suppurative thyroiditis may get complicated leading to abscess formation, septicemia or septic thrombophlebitis.<sup>[2]</sup>

We hereby report two uncommon cases of Acute Suppurative Thyroiditis; one 30 years old male & the other 60 years old female patient, both presented as neck swelling(s) in the medical outpatient department of Subharti Medical College, Meerut.

### Case Report

**Case No 1:** A 30 years old male presented to the medical outpatient department with a sudden onset of painful midline neck swelling of ten days duration with an abrupt increase to 6 x 3 cms size within a week. The patient also complained of dysphagia. On examination, the swelling was tender, cystic to firm in consistency, moved with deglutition and occupied the right lobe of thyroid. There was no previous history of thyroid enlargement, neither did the patient had symptoms related to thyroid. All the routine blood investigations were within normal limits except raised ESR. Thyroid profile and ultrasonography were normal.

The patient was referred for fine needle aspiration cytology (FNAC) of the swelling which was performed from two

different sites. Both passes aspirated light brown translucent fluid (about 0.2 ml each time) and the smears were prepared.

**Case No 2:** A 60 year old female patient presented with right sided neck swelling which moved with deglutition. The patient had H/O off and on fever but she had no complaint of discomfort or dysphagia, there was no H/O loss of appetite or weight. All the routine investigations including CBC, GBP, ESR, blood sugar, urea, routine urine examination and thyroid profile were within normal limits and ultrasonography showed no abnormality. On examination the swelling was firm and non-tender. FNAC was attempted twice and both wet and dry preparations made.

**Staining:** Smears of both the cases were stained with Leishman, giemsa, Pap and H & E stains and examined microscopically.

**Microscopic examination and Microbiology findings of Case 1:** All the smears revealed numerous viable and degenerated neutrophils, few macrophages and poorly preserved mononuclear inflammatory cells. Amidst this were lying few small monolayered sheets of follicular epithelial cells (Figure 1). Patient was diagnosed as a case of Acute Suppurative Thyroiditis with an advice for Culture and Sensitivity.

The patient's culture & sensitivity was put on nutrient agar and the report was positive for *Staphylococcal aureus*. He was put on Ceftriaxone (according to the sensitivity report) 500mg twice a day for a month. The swelling subsided after treatment.

**Microscopic examination and Microbiology findings of Case 2:** Smears showed neutrophils, few lymphocyte and occasional eosinophil amidst which were lying some loosely cohesive clusters of follicular epithelial cells some of which showed degenerative changes (Figure 2). Background showed granular protienaceous material and thin colloid. Diagnosis of Acute Thyroiditis was made with an advice for Culture and Sensitivity examination.

The report was positive for *Staphylococcus aureus*. According to the sensitivity she took Ampicillin 500mg orally every 6hourly for a month and the swelling subsided after treatment.

## Discussion

Acute suppurative thyroiditis was first described by Bauchet in 1857.<sup>[3]</sup> Several early reviews indicate that the disease was more common in the preantimicrobial era. However, it is likely that some of these cases were subacute thyroiditis, a more common disorder. *Streptococcus pyogenes*, *Staphylococcus aureus* and the *Pneumococci* are the three organisms most commonly cultured from suppurative thyroiditis. Although less common, a wide variety of other bacteria have also been isolated including *Salmonella typhosa*,

*S. paratyphi* A and B, *Hemophilus influenzae*, *Escherichia coli*, *Klebsiella species*, *Streptococcus viridans*, *Actinomyces* and *Mycobacterium intracellulare*. Anaerobic bacteria isolated from thyroid abscesses included *Bacteroides*. The thyroid has also been involved in chronic infections as tuberculosis, syphilis and echinococcosis. In our case moderate growth of *Staphylococcal aureus* was seen on culture.

The infecting agent may reach the thyroid via the blood, lymphatics, spread from contiguous structures, direct penetration due to trauma or from a persistent thyroglossal duct. The thyroid is quite resistant to infection when bacteria are injected directly into the thyroid arteries, although underlying thyroid disease may enhance susceptibility. Acute Suppurative Thyroiditis leads to diffuse or localized swelling of thyroid with or without pain and compressive symptoms. Case I presented with a localized tender swelling in thyroid region and had dysphagia. Case II had a diffuse neck swelling with no compressive symptoms. Both the cases were euthyroid as has also been reported by DeGroot et al.<sup>[4]</sup>

Ultrasonographic features of Acute Suppurative Thyroiditis are very rarely described in literature, moreover the hypoechoic shadows described are very similar to those found in many other pathologic conditions like sub-acute thyroiditis, hemorrhagic cyst, thyroid lymphoma and anaplastic Carcinoma. So FNAC of Thyroid swelling remains a very useful diagnostic tool in such cases as is seen in both the present cases.<sup>[5]</sup>

In the pathogenesis of acute suppurative thyroiditis, contribution of fistulae between the piriform sinus and thyroid gland has been emphasized<sup>[6,7]</sup> and so this fistulae must be sought whenever the diagnosis of acute suppurative thyroiditis is made.<sup>[8]</sup> However there was no such finding elicited by ultrasonography in our cases.

It is important to differentiate Acute Suppurative Thyroiditis from Subacute Thyroiditis in which the patient will have increased T4 & PBI.<sup>[9]</sup> The thyroid enlargement is diffuse, disease is self limiting and microscopically lymphocytes, multi-nucleated giant cells and degenerating follicular cells are seen lying in a background of abundant colloid. Acute Suppurative Thyroiditis if not treated leads to the many complications like abscess, septicemia and thrombophlebitis.

## Conclusion

Our cases were diagnosed as having Acute Suppurative Thyroiditis, one was male of 30 years infected with *Staphylococcal aureus* and the other was female of 60 years. A simple, cost effective and quick procedure like FNAC proved to be of immense help in diagnosing Acute Suppurative Thyroiditis rather than more elaborate tests like thyroid profile and ultrasonography.

Figure 1: FNAC smear shows neutrophil (arrow) and clusters of thyroid follicular cells (arrow head) (H & E, x 400) (Case 1)

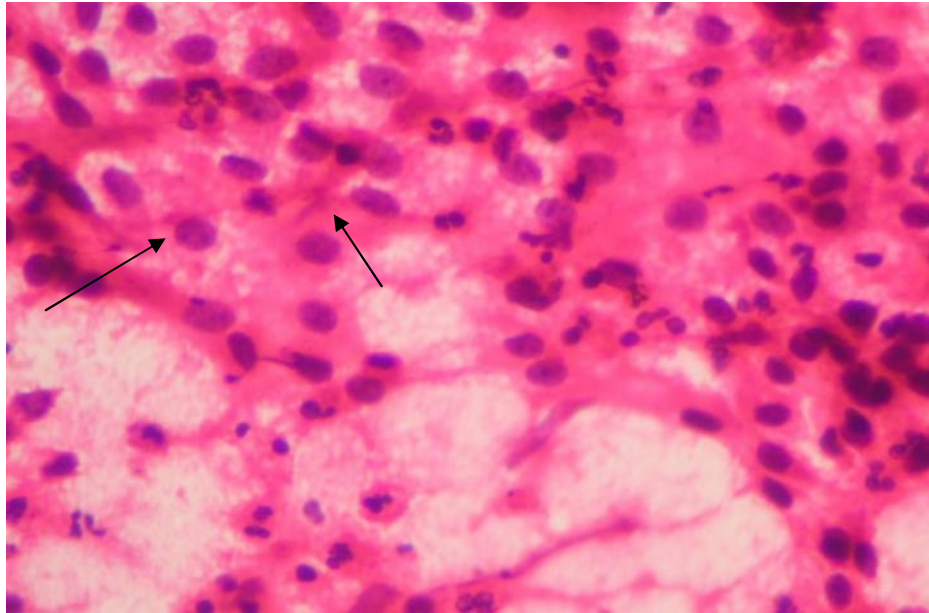
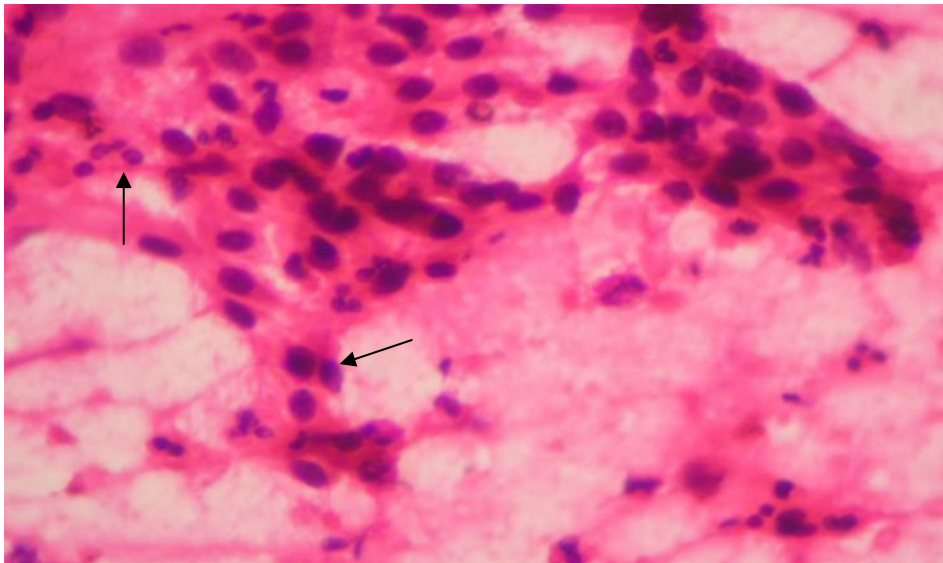


Figure 2: FNAC smear shows neutrophilic infiltrate (arrow) and thyroid follicle (arrow head) (H & E, x 200) (Case 2)



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