I. Introduction

A thyroid abscess is a rarely presenting pathology. This is because of high resistance of thyroid to infection due to high iodine content, capsular encasement and rich vascularity. Also availability of potent antibiotics has reduced the occurrence of these disease. Thyroid abscess is rare even in immunocompromised patients, with less than 1% incidence. Staphylococcus aureus is the most common organism implicated. Thyroid abscess usually presents with fever, neck swelling, pain and systemic illness. Thyroid hormones may or may not be elevated. Imaging using Ultrasonography is usually sufficient. Traditional treatment of thyroid abscess included drainage of abscess and antibiotics.

II. Case

A 65 year old man presented with neck swelling for last 30 years, which was initially small in size and then gradually increasing in nature. There was no history of any difficulty in swallowing or respiration or change of voice. It was associated with discharge from the swelling which was initially foul smelling and pain from last 20 days with no history of fever. There was no history of trauma to the neck. There was no history of any associated major illness or any history of tuberculosis or diabetes mellitus. Patient had a history of tobacco chewing from last 50 years. Sleep, appetite, bowel and micturition habits are normal.

On examination we found a single swelling of size about 12x10x8 cm anterior aspect of neck with a discharging sinus in the centre of size about 2x1x1 cm, which moves with deglutition. There is mild rise of temperature, tenderness is positive and soft in consistency. Skin fixity is positive with no attachment to underlying structures.

On CT neck suggest well defined mass 75x71x70 mm with multiple air foci, cystic change and calcification arising from right lobe of thyroid nodule, suggestive of infected colloid nodule with sinus tract formation upto the anterior skin. Adjacent cervical lymphadenopathy also noted. On FNAC, it was suggestive of colloid goitre. However on repeat FNAC after admission, it indicated a granulomatous lesion. On CBNAAT of thyroid tissue after incision and drainage, it was negative to mycobacterium tuberculosis. On culture sensitivity of drained pus, Staphylococcus aureus was identified which was sensitive to amoxicillin, clavulanic acid, erythromycin.

Regular dressing of patient was done in the ward along with proper intravenous antibiotics for a period of 3 weeks, after which the discharge subsided, wound is well healed and pain is reduced.

After that, elective right sided hemithyroidectomy with selective neck dissection of right level II, III, IV and VI cervical neck nodes was done.

HPE report identified damaged thyroid follicles, with dense inflammation with presence of giant cells and histiocytes enclosing colloid fragments. All lymph nodes were found to show reactive changes.

CBNAAT of postoperative hemithyroidectomy specimen was negative to mycobacterium tuberculosis.
CLINICAL PHOTOGRAPHS

**FIG 1** - CT Scan showing thyroid swelling

**FIG 2** - Preoperative photograph
A Rare Case of Thyroid Abscess with Colloid Goitre

FIG 3- Intraoperative photograph

FIG 4- Intraoperative photograph
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FIG 5- Postoperative thyroid specimen

FIG 6- Follow up after 1 month
III. Discussion

Acute thyroid abscess is a rare entity these days, due to anatomic and physiologic characteristics of the gland, bactericidal properties of colloid material, capsular protection, presence of iodine in the gland and high vascularity of the gland. Haematogenous spread from a distal site is a common route of infection, though source of infection may remain unknown in many cases. Extension from other neck infections or direct inoculation through trauma are other causes. Presence of a history of previous thyroid disease or immunocompromised status may predispose to thyroid abscess formation. Presence of embryologic remnant of third or fourth pharyngeal pouch may also be a predisposing factor.

Thyroid abscess is most commonly seen in children and young adults of 20-40 years whereas in our case the patient was 65 years of age. There is no gender predilection for this condition. Most cases present with anterior neck swelling. Other clinical features include fever, throat pain and redness of overlying skin. Pain is usually more during swallowing. In a review of literature, left lobe was found to be more commonly involved whereas in our case right lobe is involved. Vocal cord paralysis is very rare. In some cases patient also complain of dyspnoea. A history of respiratory tract infection may be present.

Thyroid function tests (TSH, T3 and T4) are usually normal with leucocytosis and elevated erythrocyte sedimentation rate. In one study, 12% were reported to have thyrotoxicosis and 17% to have hypothyroidism. Destruction of thyroid gland may release thyroid hormones leading to thyrotoxicosis. Ultrasound is the preferred imaging technique as it can adequately demonstrate intra or extra thyroid abscess. CT or MRI is not needed in most cases. Ba swallow can be used to detect pyriform sinus fistula. FNAC helps to identify involved micro organisms. Radioiodine scan can be done, where abscess areas will appear cold.

Most commonly involved pathogens include Staphylococcus and Streptococcus in about 35 to 40% of the cases, with gram negative organisms detected in 25% cases and anaerobes in 9 to 12%. Mycobacterium tuberculosis has also been rarely reported.

Management of a thyroid abscess consists of incision and drainage followed by culture and appropriate antibiotic therapy. CT guided percutaneous drainage is an alternative to surgical drainage. Though surgery with antibiotic therapy has been the mainstay of treatment, good results have also been seen with less invasive procedures. Application of chemocauterising agents has also shown good results.

It is possible that if abscess is not drained, it may eventually dissect into the neck or extend to chest. It may rupture into trachea or oesophagus. Potential complications also include thyroid storm, airway obstruction, internal jugular vein thrombosis, and sepsis.

IV. Conclusion

This was a case of long standing goitre complicated by formation of a thyroid abscess, from which pus was drained and culture showed growth of Staphylococcus aureus. Abscess was successfully treated with surgical drainage and intravenous antibiotics for period of 3 weeks. This was followed by right hemithyroidectomy for colloid goitre. On follow up after 1 month, patient was stable without any fresh complaints.

References

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Hironya Borah et al. “A Rare Case of Thyroid Abscess with Colloid Goitre.” IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), 19(1), 2020, pp. 40–45.