

A Rare Case of Thyroid Abscess with Colloid Goitre

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Date of Submission: 24-12-2019

Date of Acceptance: 07-01-2020

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 fixation 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

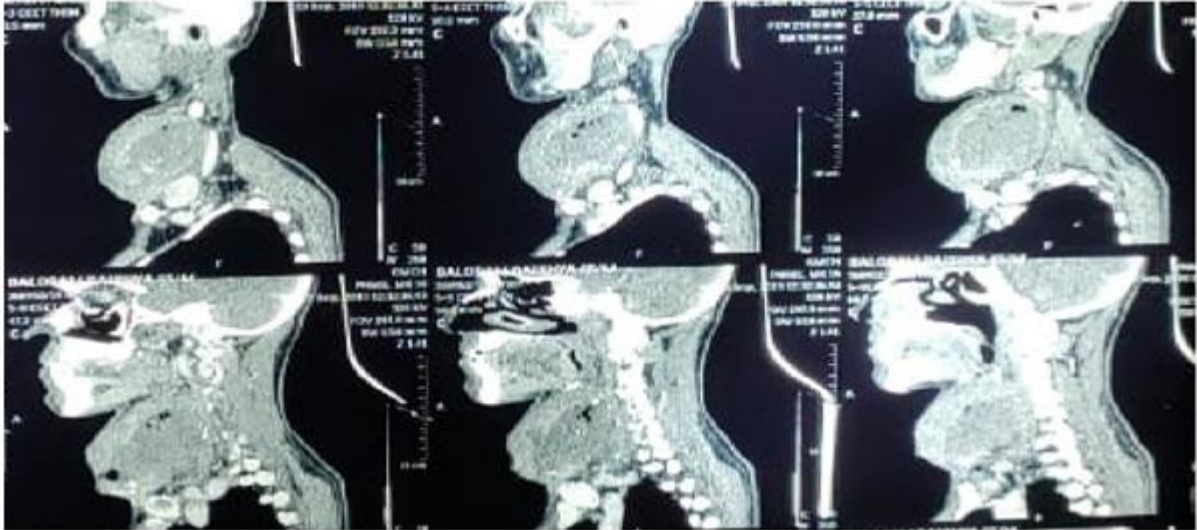


FIG 1 - CT Scan showing thyroid swelling



FIG 2- Preoperative photograph

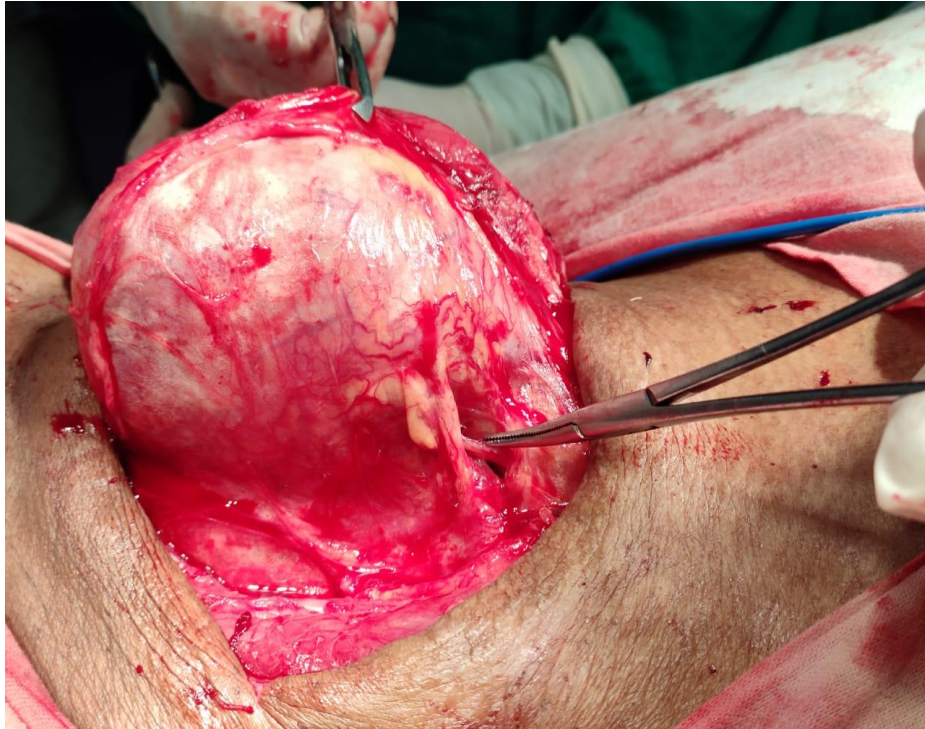


FIG 3- Intraoperative photograph

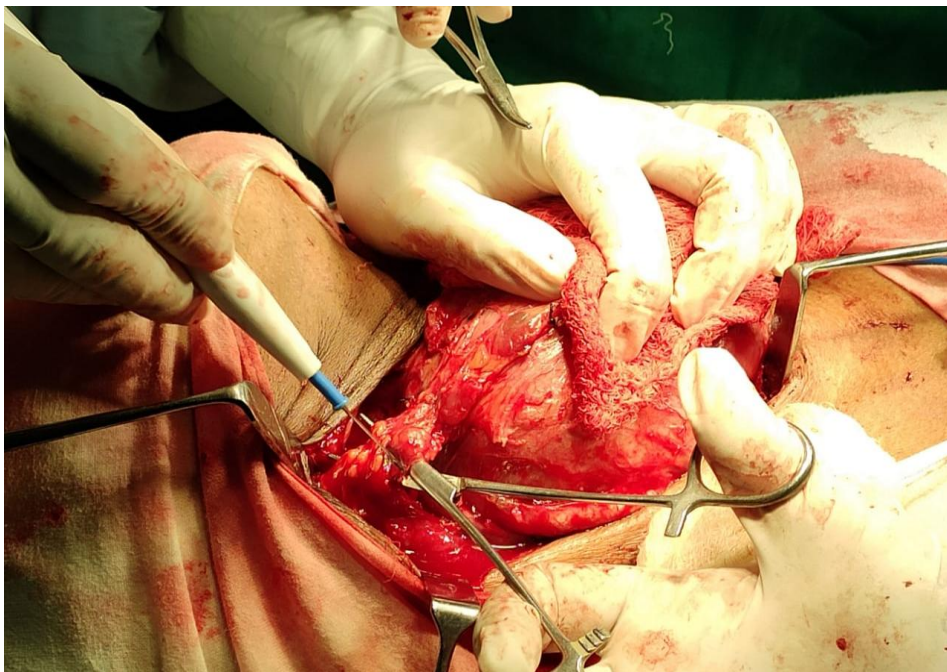


FIG 4- Intraoperative photograph



FIG 5- Postoperative thyroid specimen



FIG 6- Follow up after 1 month

III. Discussion

Acute thyroid abscess is a rare entity these days¹, 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^{2,3,4}. 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.^{5,6}

Thyroid abscess is most commonly seen in children and young adults of 20-40 years⁷ 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 skin⁸. Pain is usually more during swallowing. In a review of literature, left lobe was found to be more commonly involved³ whereas in our case right lobe is involved. Vocal cord paralysis is very rare.^{18,19} In some cases patient also complain of dyspnoea.²⁰ A history of respiratory tract infection may be present.⁹

Thyroid function tests (TSH, T3 and T4) are usually normal with leucocytosis and elevated erythrocyte sedimentation rate.¹⁰ In one study, 12% were reported to have thyrotoxicosis and 17% to have hypothyroidism.¹¹ Destruction of thyroid gland may release thyroid hormones leading to thyrotoxicosis.¹² Ultrasound is the preferred imaging technique as it can adequately demonstrate intra or extra thyroid abscess.¹⁴ CT or MRI is not needed in most cases.¹⁵ Ba swallow can be used to detect pyriform sinus fistula.¹⁶ FNAC helps to identify involved micro organisms.¹⁷ 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%.^{23,24} Mycobacterium tuberculosis has also been rarely reported.²⁵

Management of a thyroid abscess consists of incision and drainage followed by culture and appropriate antibiotic therapy.^{26,27} CT guided percutaneous drainage is an alternative to surgical drainage²⁸. 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.^{29,30}

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.³¹ Potential complications also include thyroid storm, airway obstruction, internal jugular vein thrombosis, and sepsis.³²

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 a 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

- [1]. Ogale SB, Tuteja VG, Chakravarty N. Acute suppurative thyroiditis with thyroid abscess. *Indian Pediatr*. 2002;39(12):1156-8.
- [2]. Menegaux F, Biro G, Sehatz C, Chigot J.P. Thyroid abscess. Appropos of 5 cases. *Ann Med Interne Paris*. 1991; 142(2):99-102.
- [3]. Herndon MD, Christie DB, Ayoub MM, Duggan AD. Thyroid abscess: case report and review of the literature. *Am Surg*. 2007;73(7):725-8.
- [4]. Szego PL, Levy RP. Recurrent acute suppurative thyroiditis. *Can Med Assoc J*. 1970;103:631-633.
- [5]. Rohondia OS, Koti RS, Majumdar PP, Vajaykumar T, Bapat RD. Thyroid abscess. *J Postgrad Med*. 1995;41(2):52-4.
- [6]. Nicoucar K, Giger R, Pope HG Jr, Jaecklin T, Dulguerov P. Management of congenital fourth branchial arch anomalies: a review and analysis of published cases. *J. Pediatr. Surg*. 2009;44(7)
- [7]. Pearce E, Farewell P, Braverman LE. Thyroiditis. *The new England journal of medicine*. 2003;348:2646-55.
- [8]. Brent GA, Larsen PR, Davis TF. Hypothyroidism and thyroiditis. In: Kronenberg HM, Melmed S, Polonsky KS, Larsen PR, editors. *Williams text book of endocrinology*. 11th ed. Philadelphia: Saunders Elsevier; 2008. pp. 377-410.
- [9]. Schweitzer VG, Olson NR. Thyroid abscess. *Otolaryngol Head Neck Surg*. 1981;89:226-229.
- [10]. Rohn RD, Rubio T. Neck pain due to acute suppurative thyroiditis and thyroglossal duct abscess. *J Adolesc Health Care*. 1980; 1:155-158
- [11]. Yu EH, Ko WC, Chuang YC, Wu TJ. Suppurative *Acinetobacter baumannii* thyroiditis with bacteremic pneumonia: case report and review. *Clin Infect Dis*.
- [12]. McLaughlin SA, Smith SL, Meek SE. Acute suppurative thyroiditis caused by *Pasteurella multocida* and associated with thyrotoxicosis. *Thyroid*. 2006;16(3):307-10.
- [13]. Miyauchi A. Thyroid gland: A new management algorithm for acute suppurative thyroiditis? *Nat Rev Endocrinol*. 2010;6(8):424-6.
- [14]. Clair MR, Mandelblatt S, Roger S, Bains EP, Goodman K. Sonographic features of acute suppurative thyroiditis. *J Clin Ultrasound*. 1983;11(4):222-4.
- [15]. Naik KS, Bury RF. Imaging the thyroid. *Clin Radiol*. 1998;53:630-639.
- [16]. Masuoka H, Miyauchi A, Tomoda C, Inoue H, Takamura Y, Ito Y, et al. Imaging studies in sixty patients with acute suppurative thyroiditis. *Thyroid*. 2011;21(10):1075-80.

- [17]. Singh SK, Agrawal JK, Kumar M, Shukla HS. Fine needle aspiration cytology in the management of acute suppurative thyroiditis. *Ear Nose Throat J* 1994;73:415-7.
- [18]. Duraker N, Agac E, Ozpacaci T. Thyroid abscess caused by salmonella typhi leading to Voca cord paralysis. *Eur J Surg* . 2000;166(12):971-3.
- [19]. Myssirorek D, Lee J, Shikowitz M, Sarnataro R. Immobile vocal fold secondary to thyroid abscess: a case report. *Ear Nose Throat J* . 2000;79(6):453-5.
- [20]. Ducable G, Gaillet J, Wattelet J, Testart J, Wincklar C. Acute dyspnea by acute thyroid abscess. *Anesth analg (Paris)* . 1979;36(7-8):347-9.
- [21]. Shah SS, Baum SG. Diagnosis and Management of Infectious Thyroiditis. *Curr Infect Dis Rep* . 2000;2:147-153.
- [22]. Cabizuca CA, Bulzico DA, de Almeida MH, Conceição FL, Vaisman M. Acute thyroiditis due to septic emboli derived from infective endocarditis. *Postgrad Med J*. 2008;84:445-446.
- [23]. Majid U, Islam N. Thyroid tuberculosis: a case series and a review of the literature. *J Thyroid Res*. 2011; 2011: 359864.
- [24]. Lucaya J, Berdon WE, Enriquez G, Ragaz J, Carremo JC. Congenital pyriform sinus fistula: a cause of acute left sided suppurative thyroiditis and abscess in children. *Pediatr Radiol* . 1990;21:27-9.
- [25]. Lough DR, Ramadan HH, Aronoff SC. Acute suppurative thyroiditis in children. *Otolaryngol Head Neck surg*. 1996;114:462-5.
- [26]. Klose KC, Andreopoulos D. Percutaneous catheter drainage of a thyroid abscess under CT Control. *Radiologe* . 1992;32(2):73-4.
- [27]. Kim KH, Sung MW, Koh TY, Oh SH, Kim IS. Pyriform sinus fistula: management with chemocauterization of the internal opening. *Ann Otol Rhinol Laryngol* . 2000;109(5):452-6.
- [28]. Pereira KD, Smith SL. Endoscopic chemical cautery of pyriform sinus tracts: a safe new technique. *Int J Pediatr Otorhinolaryngol*. 2008;72(2):185-8.
- [29]. Jacobs A, Gros DC, Gradon JD. Thyroid abscess due to *Acinetobacter calcoaceticus*: Case report and review of the causes of and current management strategies of thyroid abscesses. *South Med J* . 2003;96(3):300-7.
- [30]. Berger SA, Zonszein J, Villamena P, et al. Infectious diseases of the thyroid gland. *Rev Infect Dis*. 1983 Jan-Feb;5(1):108-122

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.