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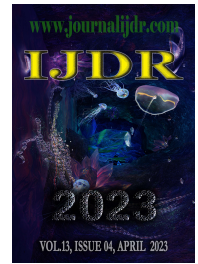
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RESEARCH ARTICLE

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A RARE CASE REPORT OF A LARGE MULTI NODULAR GOITRE PRESENTING AS THYROID ABSCESS AFTER FINE NEEDLE ASPIRATION CYTOLOGY

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ABSTRACT

Introduction: Thyroid abscess is a rarely encountered clinical entity since thyroid gland is generally thought to be resistant to most infections. Fine Needle Aspiration Cytology (FNAC) can be an iatrogenic route for infection. **Case report:** A 47 year old immunocompetent female with large multinodular goiter since 20 years who developed sudden increase in swelling size associated with pain and swallowing difficulty. History revealed that acute symptoms started after FNAC. This case report emphasizes on the fact of adopting aseptic precautions even for minimally invasive procedures. The large thyroid swelling with sudden increase in size can give a suspicion of thyroid malignancy. Hence, this report highlights Thyroid Abscess as another possible differential diagnosis, which can be diagnosed and managed accordingly. **Conclusion:** This was a case of long standing thyroid swelling which was complicated by the formation of thyroid abscess. The abscess occurred after and at the site of FNAC. Adherence to strict aseptic methods is essential for any surgery and procedure. This is essential to prevent iatrogenic transmission of infection and also antibiotic resistance. Rapid increase in size of swelling usually gives suspicion of malignancy. This case report shows how thyroid abscess can mimic malignancy on presentation. Thus, detailed history and proper clinical examination is essential for providing appropriate management to such patients.

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INTRODUCTION

Thyroid abscess is not a frequently encountered clinical presentation in patients with Thyroid swelling or Goitre. Encasement of the thyroid gland, along with the presence of rich vascularity, lymphatic supply and high iodine content makes the thyroid gland relatively resistant to most infections [1, 2]. Thyroid abscess can occur in acute suppurative thyroiditis especially in immunocompromised patients and immunosuppressed state. These infections occur due to haematogenous spread of microorganisms usually aerobic pathogens and gram positive cocci [3]. The condition is potentially life threatening and needs to be managed as early as possible. Complications like lateral oedema, tracheal compression, tracheal rupture, oesophageal involvement and mediastinal spread have to be intervened on urgent basis [4]. Iatrogenic cause of thyroid abscess is rare and not usually seen. This occurs after Fine Needle Aspiration Cytology (FNAC) done without aseptic precautions [4]. Hence, the need of adopting aseptic precautions for any procedure is very important to prevent iatrogenic infections [5]. Early identification and intervention is essential. Modalities for diagnosis include fine needle aspiration cytology (FNAC) and ultrasonography (USG). Drainage and antibiotics are essential for uneventful recovery of the patient [3, 4].

CASE REPORT

A 47 year old female presented to the OPD with chief complaints of anterior neck swelling present since the last 20 years. The swelling was insidious in onset and gradually progressive. It was initially small and round in size and shape when first noticed and has gradually progressed to current size. The size of swelling has increased rapidly in the last 3 weeks, more on the left side after undergoing Fine Needle Aspiration Cytology (FNAC). Scanty purulent discharge was also noticed from the FNAC site. It was associated with severe dull aching continuous pain which was partially relieved with analgesics. It was also associated with fever which was intermittent, low to moderate grade which relieves with antipyretics. The patient also complained of difficulty in swallowing (dysphagia) and pain while swallowing (odynophagia). She also complained of occasional breathlessness which was more in supine position and during strenuous activity. There were no complaints of change of voice, cough, vomiting or trauma. There were no associated symptoms of Hyperthyroidism or Hypothyroidism. There was no history of any associated chronic illness, past history of tuberculosis or any major surgeries. Sleep, appetite, bowel/bladder habits, menstrual history is normal. Patient denies addictions. On General Examination, patient was conscious, cooperative, well oriented to time, place, person and vitally stable. There was no pallor, icterus, cyanosis, clubbing, lymphadenopathy

and oedema. On Neck examination, there was anterior neck swelling of size about 15x10x9 cm which was firm, nodular, extending from posterior border of left sternocleidomastoid muscle to anterior border of right sternocleidomastoid muscle and from thyroid notch above to sternal notch below with retrosternal extension. The swelling moves with deglutition and does not move with tongue protrusion. There was another swelling 4x3x3 cm swelling anteriorly adjacent to left anterior border of sternocleidomastoid muscle at level of thyroid notch which was fluctuant, tender with local rise of temperature and minimal subcutaneous emphysema present. The skin over swelling had blackish discoloration with 2 discharging sinuses. No pulsations were palpable and no audible bruit was heard over the swelling. Bilateral Vocal cords were mobile on Indirect Laryngoscopy. Rest Ear Nose Throat (ENT) examination were normal. There was no cervical lymphadenopathy. Computed Tomography (CT) of neck with contrast suggested well defined heterogenous enhancing mass of 7.9 x 5.7 x 9.7 cm in left lobe of thyroid with thick enhancing walled collection of 3.5 x 3.9 x 4.8 cm. This has multiple air foci with an enhancing tract of 1.8 cm. Right lobe of thyroid has well defined heterogenous enhancing lesions of 2.8 x 3.6 x 5.9 cm. There were foci of calcification seen. The trachea was compressed and displaced to right by the swelling.

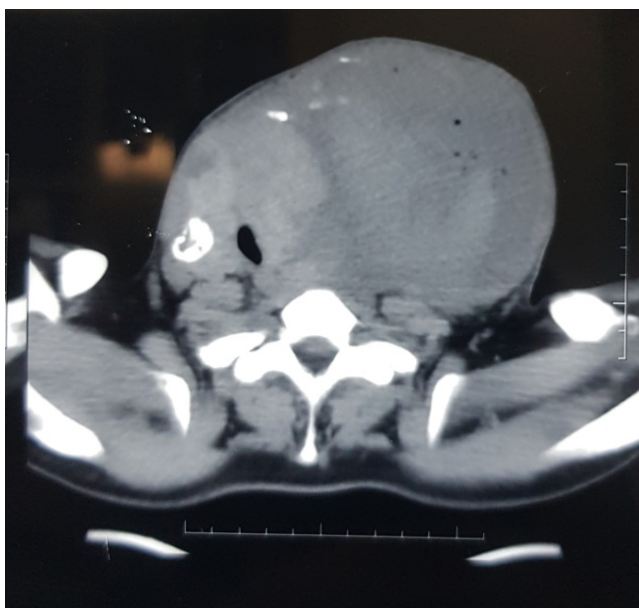
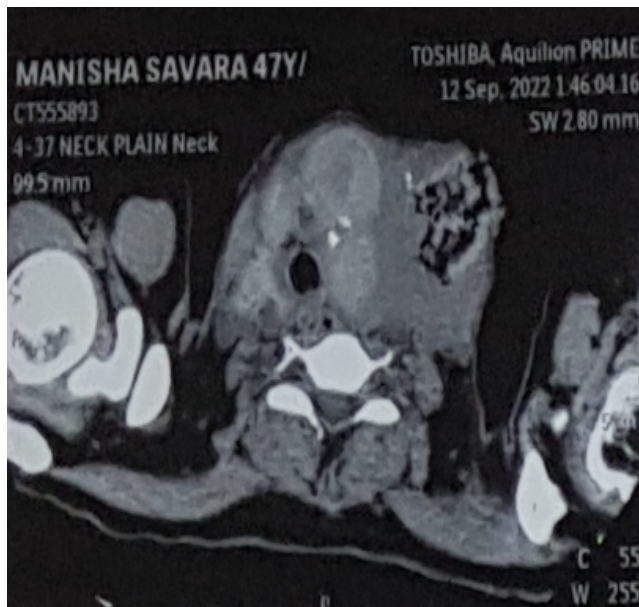


Figure 1. CT Neck showing a) Collection in left lobe of thyroid indicative of Abscess. b) Large thyroid swelling pushing trachea to right side and also compressing it

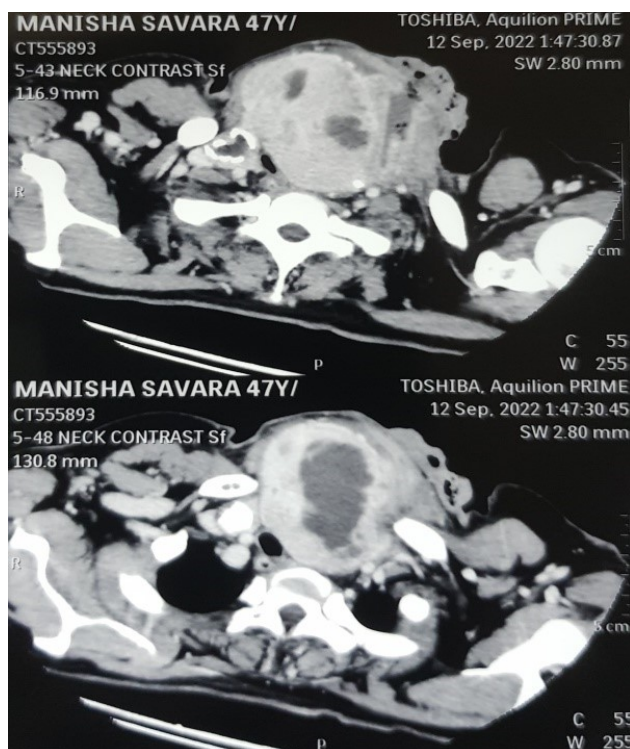
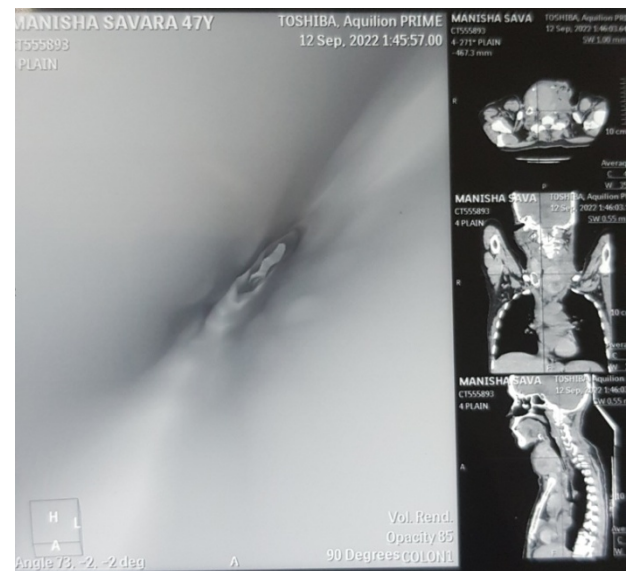


Figure 2. CT Virtual Bronchoscopy showing a) Narrowing of Tracheal lumen due to compression. b) Axial cuts showing homogenous collection within thyroid gland

FNAC was suggestive of colloid goiter (Bethesda category II). Ultrasonography (USG) of Neck was suggestive of bulky thyroid gland with multiple solid cystic nodules in both lobes of thyroid. The patient was taken for Incision and Drainage of Thyroid abscess. 30 ml of pus was drained and necrotic tissue was removed from the cavity. The thyroid gland was visible through the cavity. The pus was sent for culture and sensitivity which positive for Escherichia coli (E.coli) and was negative for mycobacterium tuberculosis. Regular dressing of wound along with intravenous antibiotics was given in the ward for 3 weeks. The purulent discharge reduced with healthy granulation tissue seen in the abscess cavity. However, there was minimal wound gaping present. Patient improved symptomatically and complaints of pain reduced. Culture and sensitivity reports suggested presence of Escherichia coli (E. coli) which was resistant to most of the commonly used antibiotics and was moderately sensitive to few of the higher antibiotics. Intravenous (IV) antibiotics were given according to the Pus culture and sensitivity reports. The patient was then worked up for elective Total Thyroidectomy under General Anaesthesia after obtaining necessary preanaesthetic fitness. Intraoperative findings

revealed large multinodular thyroid swelling adherent to the trachea was causing tracheomalacia. The parathyroid glands were identified and preserved. The Recurrent laryngeal nerves and external branch of Superior laryngeal nerves were preserved on both sides. The swelling was extending laterally and carefully dissected from the major vessels.

symptomatically and was discharged on oral medications with regular follow up. The Histopathology report of thyroid specimen revealed multinodular colloid goiter with healing abscess seen in upper pole of left lobe of thyroid. The specimen showed presence of cystic areas on the surface with calcifications within.

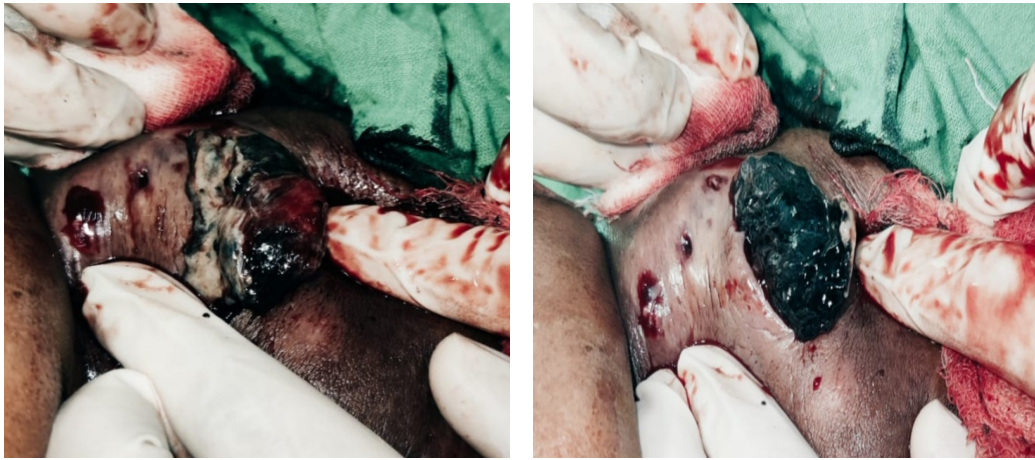


Figure 3. Incision and Drainage (I&D) done- 30ml of pus drained with necrotic thyroid tissue seen in the upper pole of left lobe of thyroid

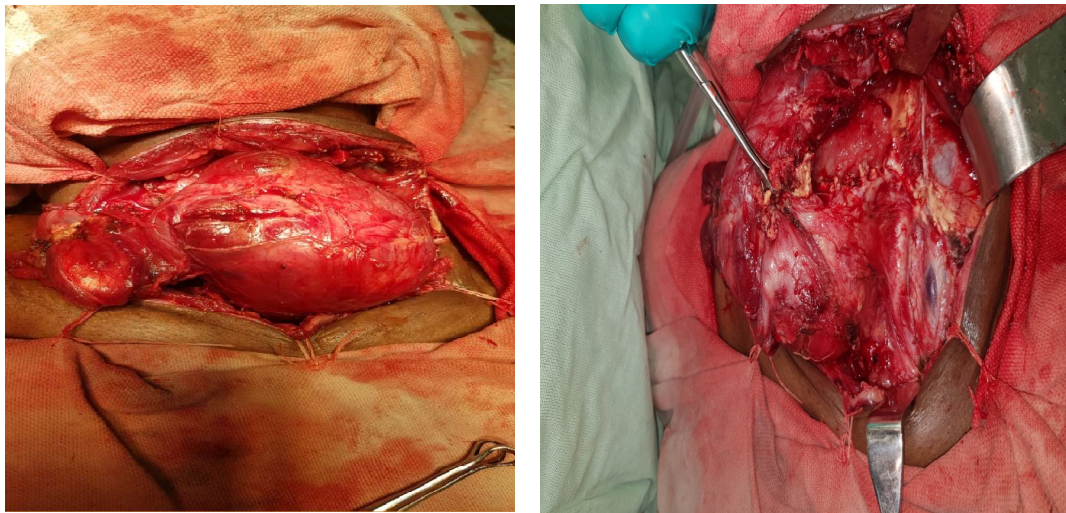


Figure 4. Intraoperative pictures showing a) Thyroid gland completely exposed with enlarged lobes (left>Right). b) Thyroid gland dissected from over major blood vessels. Thrombus can be seen in Internal Jugular Vein (IJV)

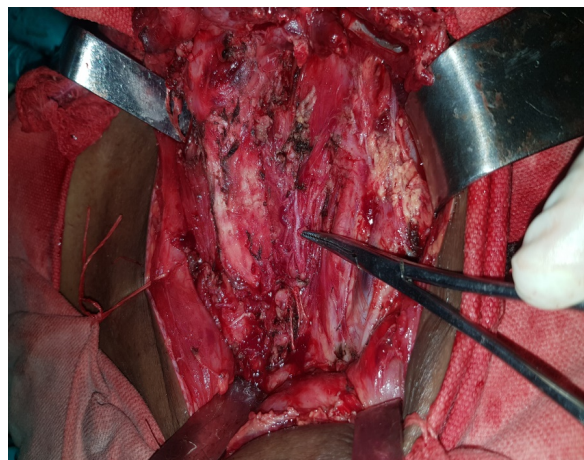


Figure 5. Intraoperative picture showing thyroid bed (gland removed) with preservation of Recurrent Laryngeal Nerve (RLN)

In the immediate postoperative period, there was paresis of bilateral vocal cords with minimal laryngeal oedema. The patient developed stridor and hence Tracheostomy was done. Postoperative care included wound dressing, intravenous antibiotics and tracheostomy care. Serum Calcium levels were monitored. The patient improved

The thyroid follicles were lined with cuboidal epithelium and filled with colloid along with clefts of fibrosis and cholesterol within. The follicles were damaged with dense inflammation seen along with granulation tissue. There was no evidence of malignancy in the specimen. The tissue was also negative for Mycobacterium tuberculosis.

DISCUSSION

The rich blood and lymphatic supply of thyroid gland, its fibrous capsule and bactericidal action of iodine make suppurative infections rare in thyroid gland [3, 6]. Haematogenous spread is the most common route of infection while direct extension from local region and iatrogenic spread are other lesser known route of infection [7]. Previous thyroid disease, immunocompromised, presence of embryologic remnant of third or fourth pharyngeal pouch can also predispose to thyroid abscess formation [8, 9]. In our case report, the patient had long standing anterior neck swelling with development of abscess after FNAC. Thyroid abscess is seen more in frequently in children without preexisting thyroid disease or congenitally due to persistent thyroglossal duct. However, in our case the patient was 46 year old female with thyroid swelling since 20 years. Gender predilection is not usually seen [4,10]. In our case, the patient had sudden increase in size of swelling associated with pain, fever and respiratory distress after undergoing FNAC with discharging sinus at 2 points on left side. There was no change in voice and bilateral vocal were mobile. In the study by Meier DA, it was observed that thyroid abscess presented with an acute pain and sudden increase in swelling size and usually associated with dyspnoea, change in voice, dysphagia, odynophagia and fever [11]. Vocal cord palsy is rarely seen on presentation [12].

Tender thyroid is also noticed in neoplasms, drug induced thyrotoxicosis, amyloidosis, intralesional haemorrhage, Grave's disease and infarction of a thyroid nodule [11]. In a review of literature, it was noted that thyroid abscess was more commonly seen in left lobe of thyroid which similarly seen in our case also [13]. Thyroid function tests (TSH, T3 and T4) are generally within normal limits with leucocytosis and elevated erythrocyte sedimentation rate. 12% cases have thyrotoxicosis while 17% to have hypothyroidism [7]. Our patient had elevated White blood cell counts (WBC) counts on admission. The WBC count reduced with I&D and on administering intravenous antibiotics. E. coli was the organism isolated in this case which showed resistance to most antibiotics. Most commonly involved pathogens reported were Staphylococcus and Streptococcus in almost half of the cases, with gram negative organisms and anaerobes less commonly detected. Mycobacterium tuberculosis has also been rarely reported [7, 14]. The clinical picture can resemble malignancy. The patient had developed IJV thrombosis and also needed tracheostomy for respiratory distress. Potential complications which are possible are thyroid storm, airway obstruction, internal jugular vein thrombosis and sepsis. Surgery combined with use of appropriate antibiotics is the preferred intervention for such cases in order to prevent impending complications [3].

CONCLUSION

This was a case of long standing thyroid swelling which was complicated by the formation of thyroid abscess. The abscess occurred after and at the site of FNAC due to which there was sudden increase in size of swelling along with two discharging sinuses, pain and distress.

Incision and drainage was done with Escherichia coli isolated. Appropriate intravenous antibiotics were given to control sepsis. This was followed by Total thyroidectomy. The specimen was reported as Multinodular goiter with healing abscess on left lobe of thyroid. Adherence to strict aseptic methods is essential for any surgery and procedure. This includes minimally invasive procedures like FNAC also. This is essential to prevent iatrogenic transmission of infection and also antibiotic resistance. Rapid increase in size of swelling usually gives suspicion of malignancy. This case report shows how thyroid abscess can mimic malignancy on presentation. Thus, detailed history and proper clinical examination is essential for providing appropriate management to such patients.

REFERENCES

- Borah H, Kakati A, Atreya S. A Rare Case of Thyroid Abscess with Colloid Goitre. *Radiologe*. 1992; 32(2):73-4.
- Duraker N, Agac E, Ozpacaci T. Thyroid abscess caused by salmonella typhi leading to Vocal cord paralysis. *Eur J Surg*, 2000, 166(12): 971-3.
- Falhammar H, Wallin G, Calissendorff J. Acute suppurative thyroiditis with thyroid abscess in adults: clinical presentation, treatment and outcomes; *BMC Endocrine Disorders*. 2019 Dec; 19(1): 1-7.
- Halenka M, Skodova I, Horak D, Kucerova L, Karasek D, Frysak Z. Thyroid abscess as a complication of fine-needle aspiration biopsy; *The Endocrinologist*. 2008 Nov 1;18(6):263-5.
- Har-el G, Sasaki CT, Prager D, Krespi YP. Acute suppurative thyroiditis and the branchial apparatus; *Am J Otolaryngol*. 1991; 12(1): 6-11
- Herndon MD, Christie DB, Ayoub MM, Duggan AD. Thyroid abscess: case report and review of the literature. *Am Surg*; 2007, 73(7): 725-8.
- Lough DR, Ramadan HH, Aronoff SC. Acute suppurative thyroiditis in children. *Otolaryngol Head Neck surg*. 1996; 114: 462-5.
- Meier DA, Nagle CE. Differential diagnosis of a tender goitre. *J Nucl Med*. 1996; 37: 1745-7.
- Murali GS, Bhandary S. Salmonella thyroid abscess in a pre-existing multinodular goitre: rare clinical entity with review of literature. *International Surgery Journal*. 2016 Dec 13; 4(1): 443-5.
- Myssirek 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.
- 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).
- Rohondia OS, Koti RS, Majumdar PP, Vajaykumar T, Bapat RD. Thyroid abscess. *J Postgrad Med*. 1995; 41(2):52-4.
- Son JK, Lee EY. Acute suppurative thyroiditis. *Pediatr Radiol*. 2007; 37:105.
- Sun JH, Chang HY, Chen KW, Lin KD, Lin JD, Hsueh C. Anaerobic thyroid abscess from a thyroid cyst after fine-needle aspiration; *Head & neck*. 2002 Jan; 24 (1): 84-6.
