Case Report

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Delayed Suture Granuloma Imitating Tumour Recurrence following Hemithyroidectomy: A Case Report

Ear, Nose and Throat Section

DIKSHA BHIMRAO SANGALE[1], NAREDDY AKARSH REDDY[2], MANU SURESH BABU[3], RASHMI PRASHANT RAJASHEKAR[4]

ABSTRACT

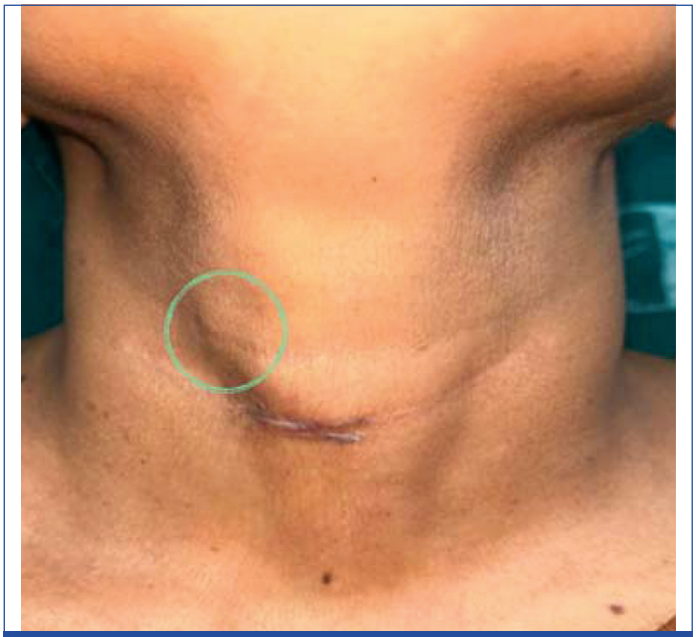
Suture granulomas are rare benign inflammatory reactions to retained non absorbable suture materials that may clinically and radiologically mimic neoplastic recurrence. Present case is of a 48-year-old female who developed multiple anterior neck swellings 18 months after undergoing hemithyroidectomy for a biopsy-proven follicular adenoma. Imaging and cytology raised suspicion of recurrence. However, histopathological examination of excised tissue confirmed the diagnosis of a suture granuloma. This case highlights the diagnostic challenge posed by this entity and underscores the importance of considering benign postoperative complications in the differential diagnosis of new neck masses in previously operated patients.

Keywords: Follicular adenoma, Neck swelling, Thyroid surgery complications

CASE REPORT

A 48-year-old female presented with gradually enlarging, painless swellings over the anterior aspect of her neck. The swellings had been noticeable for the past two months and were not associated with fever, weight loss, voice change, dysphagia, or systemic symptoms. The patient had undergone a right hemithyroidectomy 18 months earlier, and the swellings appeared approximately 16 months after surgery. Operative notes indicated the use of non absorbable black silk sutures for strap muscle approximation and ligation of vessels.

On clinical examination, three firm, non tender, mobile nodules were palpable over the right anterior cervical region, superficial to the strap muscles. The largest lesion measured approximately 1.3×1×0.5 cm. The overlying skin was normal, the previous surgical scar was well-healed, and there were no signs of inflammation or lymphadenopathy [Table/Fig-1].

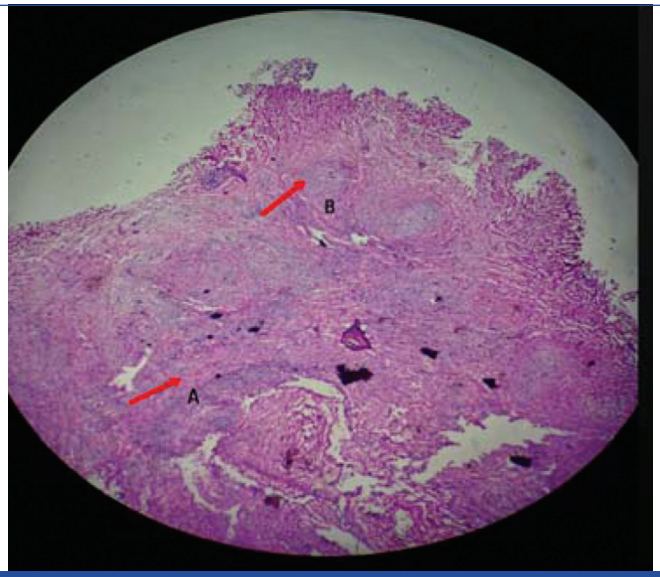


[Table/Fig-1]: Clinical picture showing postoperative scar of right hemithyroidectomy and a nodular swelling in the right cervical region (green circle).

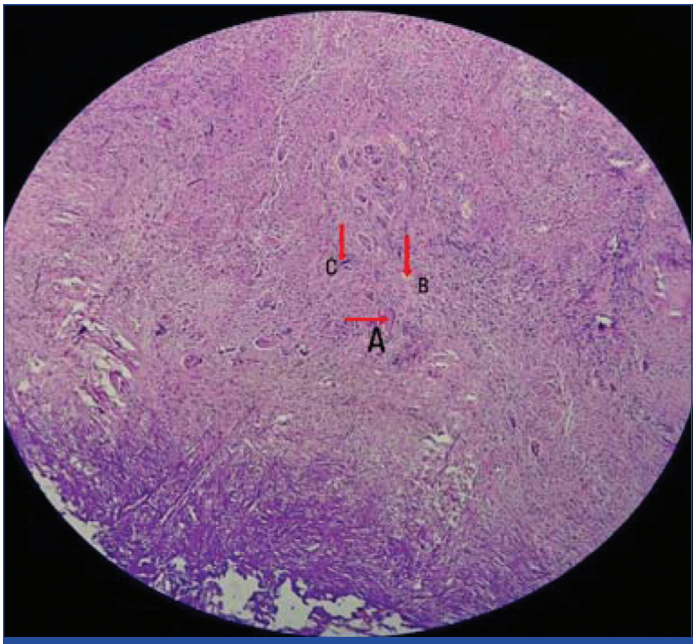
Ultrasonography of the neck revealed two well-defined, heterogeneously hypoechoic lesions with internal echogenic foci, located superficially in the strap muscle layer. The lesions showed minimal vascularity and were situated anterior to the thyroid bed. These findings raised suspicion for granulomatous lesions, likely secondary to foreign body reaction.

Fine-Needle Aspiration Cytology (FNAC) from the largest lesion revealed granulomatous inflammation composed of foreign body-type giant cells, histiocytes, neutrophils, and lymphocytes. Refractile suture material was observed within a proteinaceous background. No malignant cells were identified, and a diagnosis of suture granuloma was considered.

To confirm the diagnosis and for symptomatic relief, the largest lesion was excised under local anaesthesia. Histopathological examination of the excised specimen showed fibrocollagenous and skeletal muscle tissue infiltrated by a dense mixed inflammatory infiltrate, including neutrophils, lymphocytes, and foreign body-type giant cells. Multiple congested blood vessels were seen, and fragments of suture material were identified. No thyroid tissue or malignancy was present. The findings confirmed the diagnosis of suture granuloma [Table/Fig-2,3].



[Table/Fig-2]: A (arrow)- Multiple irregular fragments composed of fibrocollagenous tissue along with muscle tissue; B (arrow)- Dense mixed inflammatory infiltrate composed of neutrophils, lymphocytes, (H&E,10x).



[Table/Fig-3]: A- multinucleated giant cells; B- Dilated and congested blood vessels; C- Foreign body/suture material, (H&E,10x).

The postoperative recovery was uneventful. The smaller lesions were asymptomatic, firm, and not increasing in size. Given their clinical stability and the absence of suspicious features on ultrasonography, they were managed conservatively. The patient was reassured, and a watchful-waiting approach was adopted. She was advised to have periodic follow-up with clinical examination and serial neck ultrasonography at three-month intervals. At six-month follow-up, the nodules remained stable in size, and no new lesions developed, indicating a self-limiting benign course.

DISCUSSION

Suture granuloma is a benign chronic inflammatory response arising from retained suture material following surgical intervention [1,2]. Although relatively rare, it represents a diagnostic pitfall in postoperative patients, especially when it presents months to years after surgery, mimicking neoplastic recurrence both clinically and radiologically [3,4]. In thyroid surgery, where postoperative surveillance is rigorous due to the potential for malignancy recurrence, the appearance of new neck lesions can generate considerable clinical concern [5,6].

Suture granulomas typically develop in response to non absorbable suture materials such as silk or nylon, which are commonly used for vessel ligation and muscle re-approximation during thyroid surgery [2,7]. These foreign materials persist in tissue and may act as antigens, triggering a granulomatous inflammatory response characterised by multinucleated foreign body-type giant cells, histiocytes, and lymphocytes [8]. In contrast, absorbable sutures like polyglactin (Vicryl) degrade over time, significantly reducing the risk of granuloma formation [7]. In the present case, black silk sutures were used for ligation, a material well-documented in literature as a potential nidus for delayed granulomatous inflammation [7].

The interval between surgery and the onset of granuloma may vary widely, from weeks to several years. Lim-Dunham JE et al., and Langer JE et al., reported suture granulomas developing between six and 56 months postoperatively [1,2]. Ultrasound is the first-line modality for evaluating new postoperative neck masses. Suture granulomas often appear as superficial, well-defined, or heterogeneous hypoechoic lesions with internal echogenic foci representing retained suture fragments [3,9]. They typically demonstrate minimal or no vascularity on colour Doppler, in contrast to recurrent thyroid malignancies, which are often irregular in shape, hypoechoic, taller-than-wide, located deep to strap muscles, and show internal vascularity [3,5]. In present case, both lesions demonstrated characteristic echogenic foci and superficial location with minimal vascularity, increasing suspicion for a benign aetiology.

Agaimy A et al., found that 64% of post-thyroidectomy suture granulomas demonstrated linear internal echoes aligned parallel to the tissue plane, while recurrent carcinomas tended to be irregular and deeply seated [8]. The sonographic appearance, in conjunction with clinical history, can provide important clues to avoid over-investigation or unnecessary intervention.

FNAC plays a vital role in confirming the diagnosis. Cytologic features of suture granulomas include multinucleated foreign-body-type giant cells, lymphocytes, and histiocytes, often accompanied by visible refractile suture material in a proteinaceous background [5]. In some cases, FNAC may be non diagnostic because the inflammatory response is sparse or non specific. In present case, the cytology revealed classical granulomatous inflammation, and suture fragments were identified.

Differential diagnosis include recurrent thyroid carcinoma, tuberculous lymphadenitis, suture abscess, metastatic lymph nodes, and other inflammatory lesions [4,5]. In tuberculosis-endemic regions, granulomas may be misdiagnosed as tuberculosis, leading to inappropriate antitubercular therapy. Unlike tuberculous granulomas, suture granulomas typically lack caseation necrosis and demonstrate foreign material under polarised light [4].

Management depends on symptomatology and diagnostic clarity. In present case, the largest lesion was excised under local anaesthesia for both therapeutic and diagnostic purposes. The remaining smaller nodules were asymptomatic and managed conservatively. Conservative management is appropriate in such cases, as supported by other reports in the literature [6,10].

With growing awareness and increased use of absorbable suture materials in thyroid surgery, the incidence of suture granulomas is expected to decline. However, in institutions where non absorbable sutures like silk are still routinely used, clinicians must be alert to this benign but potentially confusing postoperative complication [7]. A multidisciplinary approach involving clinical history, imaging, cytology, and histopathology ensures accurate diagnosis, minimises unnecessary treatment, and reassures the patient.

CONCLUSION(S)

This case highlights a rare yet important postoperative complication-a delayed suture granuloma. Its novelty lies in the combination of multiple superficial lesions and a significant latency period, which could easily mislead clinicians toward a malignant diagnosis, especially in a patient with prior thyroid neoplasm. The identification of retained non absorbable silk sutures as the aetiological factor emphasises the critical role of surgical material choice. This case reinforces the value of integrating clinical examination, imaging, FNAC, and histopathology to differentiate benign postoperative changes from true recurrence, ultimately preventing unnecessary interventions and patient anxiety.

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PARTICULARS OF CONTRIBUTORS:
1. Resident, Department of Otorhinolaryngology, Dr. D. Y. Patil Medical College, Hospital and Research Centre, Pune, Maharashtra, India.
2. Resident, Department of Otorhinolaryngology, Dr. D. Y. Patil Medical College, Hospital and Research Centre, Pune, Maharashtra, India.
3. Assistant Professor, Department of Otorhinolaryngology, Dr. D. Y. Patil Medical College, Hospital and Research Centre, Pune, Maharashtra, India.
4. Professor, Department of Otorhinolaryngology, Dr. D. Y. Patil Medical College, Hospital and Research Centre, Pune, Maharashtra, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Nareddy Akarsh Reddy,
Resident, Department of Otorhinolaryngology, Dr. D. Y. Patil Medical College, Hospital and Research Centre, Pune-411018, Maharashtra, India.
E-mail: dikshu.sangale@gmail.com

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