CASE REPORT – OPEN ACCESS

International Journal of Surgery Case Reports 81 (2021) 105723

Contents lists available at ScienceDirect

International Journal of Surgery Case Reports

journal homepage: www.casereports.com

An unusual first presentation of hypopharyngeal carcinoma as thyroid abscess: Case report of a diagnostic challenge

Heng Yao Tan [a], Siti Hajar Sanudin [a], Sai Guan Lum [b], Eugene Hung Chih Wong [c,*]

[a] Department of Otorhinolaryngology, Queen Elizabeth Hospital, Kota Kinabalu, Sabah, Ministry of Health, Malaysia
[b] Department of Otorhinolaryngology - Head and Neck Surgery, Universiti Kebangsaan Malaysia Medical Centre, Faculty of Medicine, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia
[c] Department of Surgery, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Kota Kinabalu, Sabah, Malaysia

ARTICLE INFO

Article history:
Received 2 February 2021
Received in revised form 2 March 2021
Accepted 3 March 2021
Available online 5 March 2021

Keywords:
Hypopharyngeal
Carcinoma
Thyroid
Abscess

ABSTRACT

BACKGROUND: Hypopharyngeal carcinoma can involve thyroid gland due to their close proximity. However, an initial presentation as a thyroid abscess is rare in this malignancy. To our knowledge, this is the second reported case in the English literature.
CASE PRESENTATION: We described a 45-year-old female who presented with dysphagia, hoarseness and anterior neck swelling. The initial CT scan revealed a right thyroid abscess which was incised and drained with no malignancy found in the biopsy of the thyroid tissue. Patient presented one month later with worsening dysphagia, weight loss and a fungating anterior neck mass. Further investigation revealed a locally advanced hypopharyngeal squamous cell carcinoma extending to the right thyroid, upper oesophagus, prevertebral muscles and bilateral cervical lymph nodes (T4bN2cM0). Unfortunately, the patient passed away prior to initiation of treatment.
CONCLUSION: Clinicians should have raised index of suspicion of a possible underlying hypopharyngeal carcinoma in patients presenting with thyroid abscess and proceed to further investigations in order to ensure early diagnosis and treatment of the malignancy.

1. Introduction

The incidence of hypopharyngeal carcinoma in Malaysia is 0.2 and 0.1 per 100,000 population for male and female respectively [1]. The main risk factors for this malignancy are cigarette smoking and alcohol consumption. Patients frequently present in advanced stage because the initial symptoms tend to mimic other benign conditions such as laryngopharyngeal reflux or globus pharyngeus. Therefore, the prognosis is poor with a 5-year survival rate of 30–35% [2]. Hypopharyngeal carcinoma can involve the thyroid gland due to their close proximity. The incidence of thyroid gland involvement by hypopharyngeal carcinoma has been reported to range from 13% to 57% [3].

We report a case (in line with the SCARE criteria [4]) of a locally advanced hypopharyngeal carcinoma with an unusual first presentation as a thyroid abscess. To our best knowledge, this is only the second case reported in the English literature.

2. Case presentation

A 45-year-old female with no co-morbidities presented to the endocrine general surgeon with three months history of progressive dysphagia, hoarseness and fluctuant anterior neck swelling. An initial diagnosis of thyroid abscess was made following the findings on computed tomography (CT) scan of the neck that revealed a right sided thyroid abscess extending into anterior and lateral neck with associated supraglottic soft tissue swelling. An incision and drainage of the abscess yielded copious amount of pus which grew *Staphylococcus aureus* on culture. Biopsy of the thyroid tissue were also performed where the histopathological examination (HPE) of the thyroid tissue showed chronic inflammation with no malignancy seen. Unfortunately, the patient did not complete the post-operative antibiotic treatment to seek alternative medicine.

The patient presented one month later with worsening of dysphagia, fungating anterior neck mass, hoarseness, lethargy and significant weight loss. Examination revealed a fungating anterior neck mass measuring 4 × 4 cm, which was erythematous, hard on palpation and fixed to underlying structure (Fig. 1). There were multiple level II cervical lymph nodes palpable bilaterally. Flexible oesophagogastroduodenoscopy and biopsy by the endocrine general surgery team revealed multiple oesophageal strictures 3 cm

* Corresponding author.
E-mail address: eugene.wong.hc@gmail.com (E.H.C. Wong).

https://doi.org/10.1016/j.ijscr.2021.105723

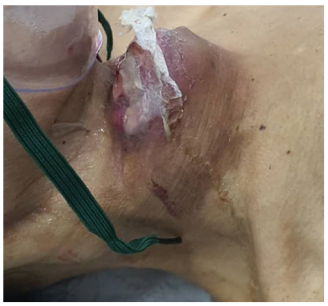

Fig. 1. Fungating anterior neck mass measuring 4 × 4 cm with surrounding erythema.

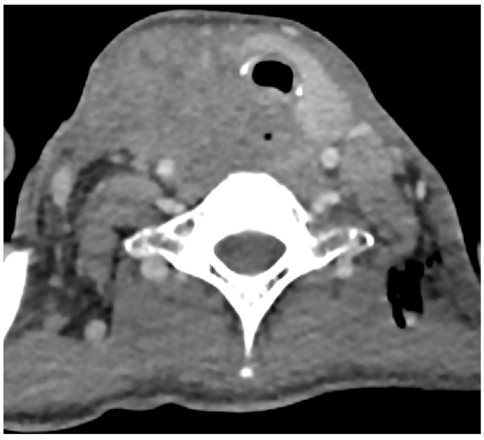

Fig. 2. Axial CT scan showing a hypopharyngeal mass extending to the right thyroid gland, oesophagus and prevertebral muscle with anterolateral displacement of the trachea and subcutaneous emphysema.

from the cricopharyngeal junction, preventing further advancement of the scope.

The patient was subsequently referred to the otorhinolaryngology team for assessment. Flexible nasendoscopy revealed bilateral erythematous arytenoids, an immobile right vocal fold at the paramedian position and inability to visualise bilateral pyriform fossa due to pooling of saliva. Direct laryngoscopy under general anaesthesia revealed a mass over the right pyriform fossa, right arytenoid and post cricoid area with fragile overlying mucosa. Rigid oesophagoscopy was unable to proceed beyond the post cricoid area. Multiple biopsies were taken from the right pyriform fossa and post cricoid area. Histopathological examination confirmed the diagnosis of squamous cell carcinoma.

A repeated contrast enhanced CT staging showed a right hypopharyngeal tumour extending to the right thyroid gland, upper oesophagus and prevertebral muscles. Patient's trachea was displaced anteriorly and laterally to the left with subcutaneous emphysema involving the right parapharyngeal, retropharyngeal and prevertebral spaces (Fig. 2). Multiple enlarged level II and III cervical lymph nodes were also noted bilaterally. No distant metastasis was found.

Due to the locally advanced hypopharyngeal carcinoma (T4bN2cM0) and the patient's poor general condition (ECOG 4), the patient was offered palliative chemoradiotherapy. Unfortunately, the patient passed away due to the advanced disease prior to initiation of the treatment.

3. Discussion

Hypopharyngeal carcinoma commonly presents with globus sensation, dysphagia, hoarseness or sore throat, depending on the subsite of hypopharynx involved [2,5]. Carcinomas originating from the post cricoid region can infiltrate posterior cricoarytenoid muscles which are situated immediately beneath the submucosal layer [6]. The resulting vocal cord palsy may cause airway compromise. Tumours from medial wall of pyriform sinus may also involve vocal cords or arytenoids via the paraglottic space, causing vocal cord immobility [6]. On the other hand, tumours arising from the lateral wall of pyriform sinuses can directly infiltrate the thyroid cartilage [6]. Tumours originating from the posterior pharyngeal wall can cause dysphagia and airway obstruction [6]. The commonest sub-sites involved in hypopharyngeal carcinoma are pyriform sinus (80%), followed by post cricoid (13.5%) and posterior pharyngeal wall (6.5%) [5].

Thyroid gland is inherently resistant to infection due to its capsule, rich blood supply, extensive lymphatic drainage and high iodine content [7]. Hence, acute suppurative thyroiditis with progression to thyroid abscess is uncommon and constitutes less than 1% of all thyroid diseases [8]. They are frequently associated with immunodeficiency or congenital conditions such as branchial cleft anomalies or thyroglossal duct cyst [8,9]. Adults presenting with thyroid abscess should be investigated for any underlying causes such as thyroglossal duct remnant, migratory foreign bodies or iatrogenic secondary to biopsy. Commoner causes of a tender thyroid swelling include de Quervain's thyroiditis, acute haemorrhage into thyroid cyst, anaplastic thyroid carcinoma or radiation-induced thyroiditis [8].

In our patient, the gross right thyroid lobe enlargement with central necrosis mimicked a thyroid abscess and masked the underlying primary hypopharyngeal tumour. Uhliarova et al. [8] reported a similar case in which the patient was initially diagnosed with recurrent thyroid abscess and subsequent nasendoscopy revealed an oedematous hypopharynx and reduced vocal cord mobility. The diagnosis of hypopharyngeal carcinoma was only established after further investigation spurred by persistence of abscess despite optimal therapy [8].

The risk factors for thyroid gland involvement in hypopharyngeal carcinoma include tumour at post cricoid region, subglottic extension, extralaryngeal spread and prior tracheostomy [3]. Hypopharyngeal carcinoma has a propensity for submucosal spread with a reported incidence up to 58% [2,10]. It can extend as far as 2 cm superiorly and 3 cm inferiorly [10]. This correlates to our patient where skip lesion is seen in the oesophagus 3 cm inferior to our patient's post cricoid tumour. Lymphatic spread is common in hypopharyngeal carcinoma due to its rich network of lymphatics drainage. 60–80% of patients have lymph node metastasis upon presentation [10], while systemic metastasis occurs in 6% of patients at presentation and increases to 60% throughout follow-up [2].

Examination using flexible nasendoscope to visualise the pyriform fossa and post cricoid area is challenging [2]. Hence, examination under general anaesthesia with direct laryngoscope and oesophagoscope is required for thorough examination of all the subsites, to look for skip lesions and to biopsy any visible lesions. This was especially relevant to our patient, where the tumour was obscured by pooling of saliva and surrounding oedema.

CT scan is used to evaluate locoregional extension of the tumour as well as nodal and distant metastasis. On the other hand, magnetic resonance imaging (MRI) is helpful to delineate soft tissue extension, which is important in surgical planning.

Treatment options for hypopharyngeal carcinoma include surgery, chemotherapy and radiotherapy [2]. Treatment selection depends on tumour staging and patient's performance status. In our patient, the extensive tumour with involvement of prevertebral muscle and poor performance status precludes the option of surgery, therefore chemoradiotherapy was the more appropriate treatment.

4. Conclusion

Thyroid abscess is a rare clinical entity and should prompt further investigation to look for a masked underlying cause. Clinicians should have raised index of suspicion of a possible underlying hypopharyngeal carcinoma in patients presenting with thyroid abscess and proceed to further investigations in order to ensure early diagnosis and treatment of the malignancy.

Declaration of Competing Interest

The authors report no declarations of interest.

Funding

None.

Ethical approval

Ethical approval was obtained from the National Medical Research Register of Malaysia under research ID 58308.

Consent

Written informed consent was obtained from the patient's relative for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

Heng Yao Tan – Methodology, Data Curation, Writing - Original Draft.
Siti Hajar Sanudin – Conceptualization, Data Curation.
Sai Guan Lum – Writing – Review & Editing.
Eugene Hung Chih Wong – Supervision, Data Curation, Writing – Review & Editing.

Registration of research studies

Not applicable.

Guarantor

This is a retrospective case report. The primary author (Dr Eugene Wong) takes full responsibility for the work.

Provenance and peer review

Not commissioned, externally peer-reviewed.

References

[1] A. Azizah, et al., Malaysia National Cancer Registry Report (MNCR) 2012-2016, Institut Kanser Negara, 2019.
[2] J.C. Garneau, R.L. Bakst, B.A. Miles, Hypopharyngeal cancer: a state of the art review, Oral Oncol. 86 (2018) 244–250.
[3] P. Joshi, et al., Thyroid gland involvement in carcinoma of the hypopharynx, J. Laryngol. Otol. 128 (1) (2014) 64–67.
[4] R.A. Agha, et al., The SCARE 2018 statement: updating consensus surgical CAse REport (SCARE) guidelines, Int. J. Surg. 60 (2018) 132–136.
[5] P.J. Bradley, Symptoms and signs, staging and co-morbidity of hypopharyngeal cancer, Adv. Otorhinolaryngol. 83 (2019) 15–26.
[6] C. Piazza, et al., Clinical and radiological evaluation of hypopharyngeal carcinoma, Adv. Otorhinolaryngol. 83 (2019) 35–46.
[7] L. Dai, et al., Acute suppurative thyroiditis with thyroid metastasis from oesophageal cancer, Endokrynol. Pol. 71 (1) (2020) 106–107.
[8] B. Uhliarova, A. Hajtman, Neck abscess as the initial manifestation of pharyngeal cancer, JMM Case Rep. 3 (2) (2016).
[9] S. Kalladi Puthanpurayil, et al., Papillary thyroid carcinoma presenting as acute suppurative thyroiditis: a case report and review of the literature, Int. J. Pediatr. Otorhinolaryngol. 105 (2018) 12–15.
[10] J.Y. Chan, W.I. Wei, Current management strategy of hypopharyngeal carcinoma, Auris Nasus Larynx 40 (1) (2013) 2–6.