

Coexistence of laryngeal squamous cell carcinoma and non-Hodgkin's lymphoma with nasopharyngeal involvement

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Abstract

Laryngeal squamous cell carcinoma (SCC) is one of the most frequent malignancies in the head and neck region. The risk of multiple malignancies is reported as 2–11 per cent and most of the second primaries are SCCs. Lymphogenic tumours as second primaries are extremely rare. In this paper, we report a case of laryngeal SCC with synchronous non-Hodgkin's lymphoma and review the literature on the clinical and histopathological aspects of these malignancies.

Key words: Larynx; Carcinoma; Nasopharynx; Non-Hodgkin; Neoplasms, Multiple Primary

Introduction

Squamous cell carcinoma (SCC) of the larynx is one of the most frequent carcinomas of the head and neck that otolaryngologists encounter.^{1–3} A synchronous malignancy of the upper aerodigestive tract is observed in only 2–11 per cent of head and neck malignancies.^{2,3} Usually, second primaries are also SCCs. A second primary tumour which is of lymphogenic origin is extremely rare.^{4–6}

In this paper, a case of laryngeal carcinoma with non-Hodgkin's lymphoma (NHL) is presented and the literature reviewed.

Case report

A 62-year-old man was admitted to the otorhinolaryngology clinic with complaints of throat pain and hoarseness. These symptoms had been present for about four weeks. The patient also had dysphagia and approximately 4 kg of weight loss during the previous six weeks. He had been smoking 20 cigarettes per day for 40 years and seldom drank alcohol.

A complete physical examination was performed. On indirect laryngoscopic examination, an ulcerovegetative mass involving the laryngeal side of the epiglottis and extending into the left aryepiglottic fold and the arytenoid was seen. The nasopharynx was evaluated as normal on mirror examination. During palpation of the neck, a 1 × 1 cm, nontender lymph node was evident in level two on the right side. On the left, two nodes 2 × 2 cm in diameter were palpated in level three.

Computerized tomography (CT) scans showed a mass in the lingual side of the epiglottis extending into the pre-epiglottic space, left vallecula, aryepiglottic fold, paraglottic space, anterior commissure and both ventricles

(Figure 1a). The neck strap muscles were invaded. The CT also showed two hypodense, 35 × 34 mm and 23 × 18 mm nodes on the left side of the neck. The chest X-ray revealed no evidence of lung infiltration or metastasis. Direct laryngoscopy and punch biopsy were performed under general anaesthesia. The pathological diagnosis was moderately differentiated SCC (Figure 1a). The tumour was staged as T₄N_{2c}M₀.

Subsequently, the patient underwent total laryngectomy and right functional and left radical neck dissections. The strap muscles were invaded and were included in the specimen. Peri- and post-operatively, no complications occurred. Surprisingly, in the left radical neck dissection material, three nodes in level three and 10 nodes in level four revealed B-cell, high-grade malignant lymphoma (Figure 2a). In the neck specimen, no SCC metastasis was present. The pathological report was confirmed immunohistochemically – cytokeratine, leucocyte common antigen (LCA) (Figure 2b) and CD20 positivity were detected – confirming the diagnosis. A nasopharyngeal CT showed a mass extending into the left nasopharyngeal cavity and left choana (Figure 1b). Nasopharyngeal endoscopy was performed, revealing a mass covered with oedematous mucosa in the left choana. A punch biopsy was taken and tissue diagnosis of the mass was reported as 'B-cell high-grade malignant lymphoma of the nasopharynx'. Abdominal CT did not show any mass in the abdominal structures. According to the Ann-Arbor staging system, the patient was evaluated as stage IIE.

After the operation, our patient was treated by the medical oncology clinic with four courses of CHOP protocol including cyclophosphamide (750 mg/m²), adriamycine (50 mg/m²), oncovine (2 mg/m²) and prednisolone (100 mg orally). He was referred for radiotherapy and a total dose of 3400 Gy (in 17 fractions of 200 Gy) was

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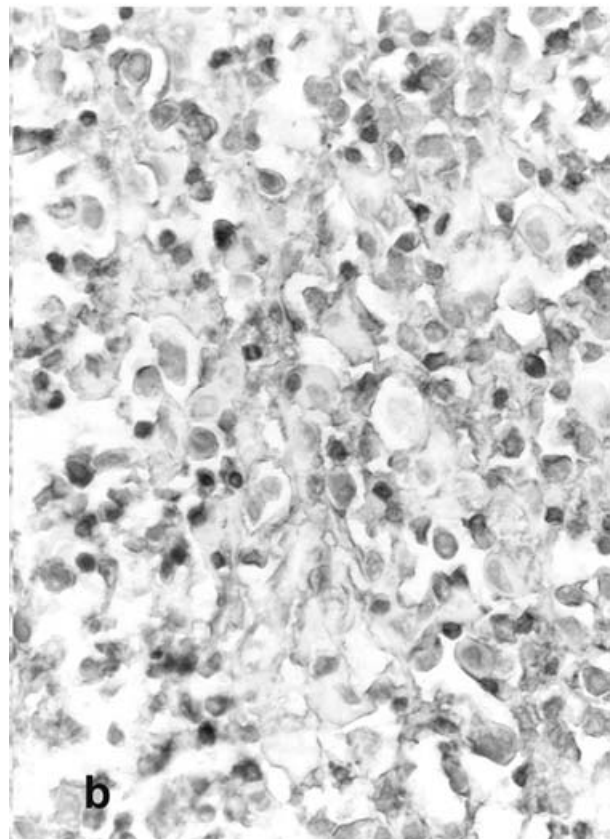
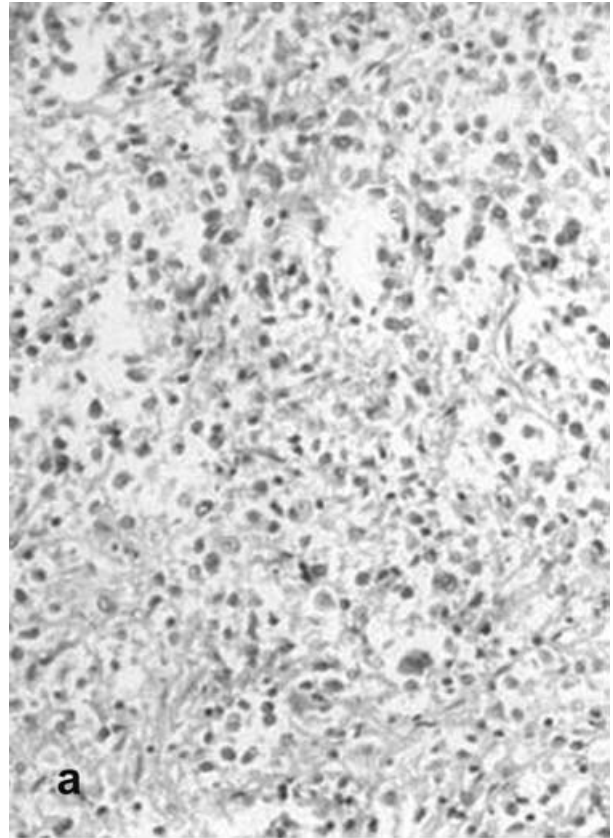
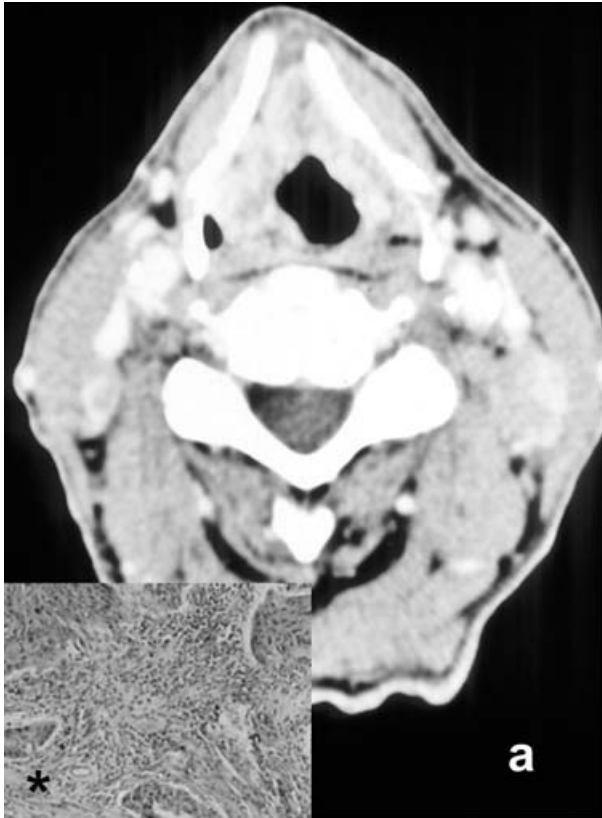


FIG. 1

(a) Axial computed tomography (CT) scan demonstrating a mass extending into the thyroid cartilage. Histopathology* shows invasive, irregular masses composed of atypical squamous cells, with several horn pearls present (H & E; $\times 100$). (b) Axial CT scan demonstrating a mass extending into the left nasopharyngeal cavity and left choana.

FIG. 2

Lymph node infiltrated by atypical lymphoid cells in diffuse patterns (H & E; $\times 100$). (b) leucocyte common antigen (LCA) positivity of the tumour cells in the lymph node (LCA; $\times 400$).

administered to the neck and to the nasopharynx. No recurrences were observed in the 12 months following treatment.

Discussion

Non-Hodgkin's lymphomas usually appear in the lymph nodes but approximately 25 per cent originate in extranodal sites, especially in the gastrointestinal system and in the head and neck. Non-Hodgkin's lymphomas are more commonly seen in late adulthood and in childhood. The male to female ratio in non-Hodgkin's lymphomas is about 1.5:1 and in the head and neck region most NHLs originate from B cells.^{7,8}

Squamous cell carcinoma of the larynx is one of the most commonly encountered laryngeal tumours.¹ In the head and neck, second primaries are frequently carcinomas.² Multiple malignancies represent 2–11 per cent (mean, 5 per cent) of all head and neck malignancies.³ The chance of occurrence of a second primary head and neck tumour within one year is 2.5–4.8 per cent.^{2,3} In the English literature, synchronous development of lymphoma and laryngeal cancer has been rarely reported.^{4–6} In a case reported by Nigri and Khasgiwala, a patient with laryngeal SCC underwent total laryngectomy and radical neck dissection. The histopathological report on the neck specimen diagnosed Hodgkin's lymphoma.⁴ A synchronous lymphoma with an in situ laryngeal carcinoma and a mucosa-associated lymphoid tissue (MALT)-type lymphoma with SCC of the larynx were also reported.^{5,6}

There have been reports of extralaryngeal carcinoma coexisting with lymphoma. For example, an 83-year-old man underwent right neck dissection; previously diagnosed SCC of the right pinna and metastatic carcinoma and B cell lymphocytic lymphoma were seen in the dissected nodes.⁹

Odette *et al.* reported two cases of lymphoma with other malignancies. In the first case, the patient had lymphoma with neck involvement; two years later, he developed SCC of the cervical oesophagus. Radiotherapy was chosen as the mode of treatment. In the second case, a metachronous lymphoma of the hypopharynx and a thyroid adenocarcinoma were present in the same patient. The patient died in the first year of follow up. However, in this report, the type of lymphoma and the reason for the patient's death were not made clear.¹⁰

The development of second malignancies in the presence of well differentiated lymphocytic lymphomas has been reported in as many as 20–25 per cent of patients.^{11–14} In the study by Perez-Reyes and Fahri, 18 of 76 (24 per cent) cases with well differentiated lymphocytic lymphoma had a second or third malignancy. Nine of these patients had SCC of the head and neck. In this study, two patients died due to SCC of the skin.¹¹ Thirty-seven per cent of the cases with SCC had metastases in the neck.¹¹ However, in our case, only lymphoma was found in the lymph nodes after neck dissection.

Non-Hodgkin's lymphoma is the second most common malignancy in human immunodeficiency virus (HIV)-infected patients.¹⁵ However, our patient was not infected with HIV.

Radiotherapy is the best initial treatment for isolated NHLs. In patients with intermediate- and high-grade lymphomas, the combination of chemotherapy and radiotherapy is the suggested treatment of choice.^{7,8} Our patient was treated with CHOP protocol in addition to radiotherapy, as suggested in the literature. Surgery alone can be the treatment of choice in SCC of the larynx.¹ However, in cases of metastases, radiotherapy and sometimes chemotherapy can be added to the treatment protocol.¹ Chemotherapy and radiotherapy were targeted at the lymphoma in our case.

In well differentiated lymphocytic lymphoma, predisposing factors for the development of SCC include chronic illness, HIV infection, smoking, chemotherapy and solar damage.^{11,15} In our case, two tumours developed synchronously and there was no history of chemotherapy or radiotherapy. It is reported that in cases with malignant lymphoma SCC demonstrates an aggressive nature.¹¹ For this reason, we followed up the patient monthly for one year post-operatively. No recurrence was observed.

Panendoscopy of the upper aerodigestive tract, including the nasopharynx, must be a routine part of pre-operative examination in a patient with a neck mass. As was the case for our patient, mirror examination of the nasopharynx may not be sufficient to detect a tumour in this region, although this may not affect the end result.

In conclusion, although extremely rare, NHL may accompany SCC of the larynx, and in these patients the treatment must be targeted at both tumours. It must be kept in mind that an enlarged cervical lymph node in a patient with known primary malignancy of the larynx may not always indicate metastasis of the primary tumour; coexistence of another malignancy, such as lymphoma, is always possible.

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