Nasal tip metastasis: an unusual site and mode of spread in anaplastic thyroid carcinoma

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Abstract Anaplastic thyroid carcinoma (ATC) is the most aggressive and lethal form of thyroid malignancy which is difficult to treat. At the time of diagnosis, majority of patients have distant metastases most commonly in lung, bone, and liver. However nasal tip metastasis is not reported in literature. Implantation of malignant cells on nasal tip is also unknown. We hereby report an interesting and unusual mechanism for nasal tip metastasis in a patient with ATC.

Keywords Thyroid carcinoma · Nasal metastasis · Implantation metastasis

Introduction

Anaplastic thyroid carcinoma (ATC) is known for its poor prognosis because of local and distant spread at the time of diagnosis. The distant metastases are usually to lungs, liver and bone. Nasal tip metastasis from ATC is hitherto unknown in English literature. Few isolated case reports of malignancy of breast, esophagus, larynx and lung spreading to nasal tip are known [1–3]. There are various mechanisms reported in the literature for spread to nasal tip.

Here we are reporting an unusual case of nasal tip metastasis in ATC with a very interesting mode of spread. The mechanism involved local self implantation of the malignant cells which has not been reported in literature before.

Case report

A 54-year-old male presented with complaints of painless swelling in the lower neck (one year duration) and nasal tip swelling (two months duration). In past two months, neck swelling had rapidly increased in size causing mild dysphagia and change in voice. There was no respiratory distress.

Patient narrated an interesting history about the development of nasal tip swelling. He pinpricked the neck swelling and applied the same pin to the nasal tip for at least one month as suggested by a quack for the treatment. Approximately one month after that he noticed a small nodular painless swelling over the nasal tip which gradually increased in size.

On examination, there was a globular, nontender, firm nasal tip swelling two cm in diameter which was not obstructing the nasal vestibules (Fig.1). Rest of the nasal examination was normal. There was an ill defined, hard, nontender swelling in the lower centre part of the neck extending to left side and fixed to the trachea. Trachea was pushed to the right side but there was no stridor. Overlying skin showed multiple pinprick marks with discoloration (Fig. 1). Indirect laryngoscopic examination revealed left vocal cord palsy.

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Fig. 1 Photograph of the patient showing neck swelling with overlying skin discoloration (marked with arrow head) and globular nasal tip lesion (marked with arrow)

He was subjected to the fine needle aspiration cytology of both the swellings after routine investigations. Cytology revealed anaplastic thyroid malignancy from the neck and metastatic anaplastic thyroid malignancy from the nasal tip. Multiple cannon ball like opacities were present in both the lung fields in x-ray chest suggestive of metastases. Abdominal ultrasound detected multiple liver metastases. He was labeled as advanced case of carcinoma thyroid therefore only palliative chemo-radiation was advised. Unfortunately, he died after 2 months.

Discussion

ATC is the most aggressive and lethal form of thyroid malignancy which is difficult to treat. At the time of diagnosis, majority of patients have distant metastases most commonly in lung, bone and liver. However obstructive symptoms caused by loco-regional spread, which lead to hemoptysis, dysphagia and hoarseness are often present.

Overall incidence of cutaneous metastasis has been reported to be 0.7% to 9% of all the malignancies [4]. Nasal

tip is an unusual site of cutaneous metastatic spread. So far few isolated cases of malignancies of the esophagus, larynx, lung, breast and kidney have been reported [1–3]. ATC metastasizing to the nasal tip has not been reported in the English literature. These lesions can produce clinical diagnostic dilemma more commonly with the rhinophyma, rhinoscleroma and keratoacanthoma. Therefore cytological and/or histopathological confirmation is always required to achieve definitive diagnosis.

The probable mechanisms for the metastasis to the nasal tip described in the literature are retrograde lymphatic spread of the tumor cells (after blockade of the lymphatic drainage by locally advanced tumor with adenopathy), iatrogenic direct tumor seeding of the nasal mucosa during endoscopic management of the primary tumour and hematogenous spread from valve less vertebral venous plexus to the venous sinuses of the skull and from there to the venous communications like pterygoid plexus which could transport the tumor cells to the nose [1–3]. The unknown and, of course, very interesting mechanism for the metastasis to the nasal tip in our case was local self implantation of the cancer cells.

The treatment options for solitary cutaneous metastasis are local excision and/or radiation often combined with chemotherapy for systemic disease [5]. However because of presence of coexistent distant organ metastases, surgical treatment was deferred in our patient and palliative chemotherapy was advised.

Outcome for the lesions with cutaneous metastasis is exceptionally poor. The mean survival from the time of diagnosis of the skin metastasis from lung lesions was 4.9 months in a review by Terashima [6]. In our case, patient died 4 months after appearance of the skin metastasis.

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