

CASE REPORT

Unusual cases of carcinoma of palatine tonsil

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ABSTRACT

We present two unusual cases of carcinoma of palatine tonsil in elderly patients. Both the cases were initially diagnosed as squamous cell carcinoma of the tonsil, second case, in addition, showed lung metastasis. On subsequent follow-up, the first case developed cutaneous metastasis in the right frontoparietal region while second case showed granulocytosis as paraneoplastic manifestation. The association of cutaneous metastasis and paraneoplastic granulocytosis with carcinoma of tonsil is rare. Cutaneous metastasis has been described only once in the literature while paraneoplastic granulocytosis is being reported for the first time. Both the conditions need long-term follow-up as they manifest at the extreme edges of the neoplastic process.

Key words: Carcinoma tonsil, cutaneous metastasis, granulocytosis, paraneoplastic syndrome

INTRODUCTION

Carcinoma of palatine tonsil accounts for 10% of all head and neck cancers and are usually confined above the clavicle. Local spread and neck node involvement are the usual mode of metastasis. There are only few reports of distant metastasis with the lung being the common site. Cutaneous metastasis from carcinoma of tonsil is exceptional with only one reported case in the literature.^[1] As like the cutaneous metastasis even paraneoplastic syndrome associated with carcinoma tonsil is rare and granulocytosis as a paraneoplastic manifestation is being reported for the first time.^[2-4] Here, we report two unusual cases of carcinoma tonsil in elderly male patients; one with cutaneous metastasis and the other with granulocytosis as paraneoplastic manifestations.

CASE REPORTS

Case 1

A 70-year-old male patient presented to the Department of Otorhinolaryngology in November 2012, with complaints of throat pain and difficulty in swallowing since 2 months. He also complained of weight loss for 2 months. He is a smoker

since his adulthood, not a hypertensive or diabetic. On general physical examination, the patient was pale, emaciated and lymph nodes were not palpable. Examination of the oral cavity revealed a growth in the left tonsillar area measuring 3 cm × 3 cm × 2 cm, hard in consistency and bleeds on touch. With the above findings, a clinical diagnosis of carcinoma of the left tonsil was made and punch biopsy was done. Sections from the biopsy showed lesion lined by stratified squamous epithelium exhibiting dysplastic features, underlying sub epithelium showed malignant squamous cells arranged in groups and nest and at places in the form of pearl. The cells had large vesicular nuclei with prominent nucleoli and eosinophilic cytoplasm [Figure 1]. With the above features, a pathological diagnosis of moderately differentiated squamous cell carcinoma (SCC) of the tonsil stage II (T2N0M0) was made. The patient received curative radiotherapy and he was symptom-free.

In March 2014, he complained of swelling in the right frontoparietal region which was gradually progressive. Patient's general condition was poor, emaciated and wheelchair bound. On local examination, the swelling measured 4 cm × 3 cm ×

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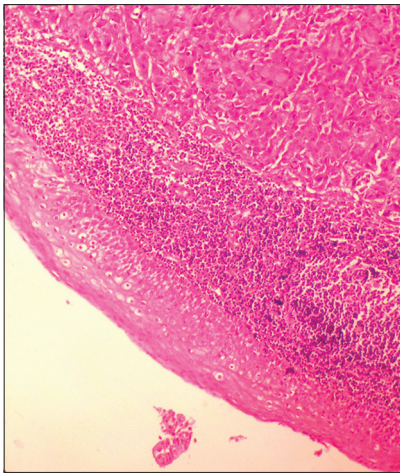


Figure 1: Photomicrograph of tonsil showing dysplastic squamous epithelial lining with underlying invasive squamous cell carcinoma (H&E stain, ×100)

2 cm, was soft in consistency and overlying skin was not pinchable [Figure 2a]. On fine needle aspiration, 6 ml of fluid was aspirated. On microscopic examination, tumor cells were squamoid in nature with vesicular, pleomorphic nuclei with scanty to moderate eosinophilic cytoplasm. Individual cell keratinization was seen [Figure 2b]. With the above features, a diagnosis of cutaneous metastasis from carcinoma of the tonsil was made. Since the general condition of the patient was poor, supportive treatment was offered and was planned for radiotherapy but patient deteriorated and expired after 2 days of the diagnosis.

Case 2

A 70-year-old male patient presented to the Otorhinolaryngology Department in May 2013, with a history of swelling in the right side of neck and throat pain since 1-month. Past and family histories were not significant. He was not a smoker nor an alcoholic. On general physical examination, a swelling was noted on the right side of the neck at the level II cervical lymphnode, measuring 2.5 cm × 2.5 cm and was hard in consistency. Oral cavity showed an irregular ulcerative lesion measuring 3 cm × 2 cm over right tonsil. Systemic examination was within normal limits. With the above findings, a clinical diagnosis of carcinoma of tonsil with metastasis in the level II right cervical lymphnode was made. Fine needle aspiration from the lymphnode yielded purulent material mixed with blood, stained smears showed tumor cells of squamoid nature with vesicular, pleomorphic nuclei and prominent nuclei with scanty eosinophilic cytoplasm. Individual cell keratinization was seen [Figure 3]. Biopsy from the ulcer of the tonsil showed features of moderately differentiated squamous cell carcinoma [Figure 4]. Positron emission tomography scan done confirmed the malignant nature of the tonsillar ulcer, in addition, revealed level II and III cervical lymphnode metastasis and soft tissue

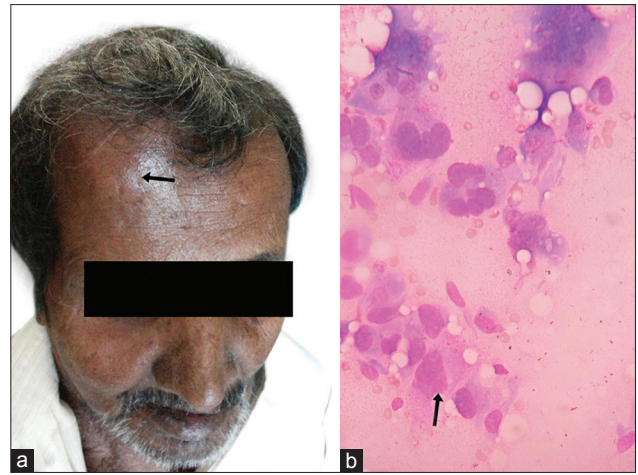


Figure 2: (a) Clinical photograph showing swelling in the right frontoparietal region (arrow), (b) Cytology smear from the skin lesion showing tumor cells having vesicular, pleomorphic nuclei with scant to moderate eosinophilic cytoplasm (MGG stain, ×100)

densities in bilateral lung parenchyma suggestive of metastasis [Figure 5a]. With the above findings, a diagnosis of carcinoma of tonsil with cervical lymphnode and lung metastasis was made with the stage IV (T2N1M1) disease. The patient was treated with chemotherapy for nine cycles. In July 2014, on routine follow-up, his total leukocyte count was found to be 93,000/μl, hemoglobin 9 g/dl, erythrocyte sedimentation rate (ESR) 10 mm at the end of 1st hour and other parameters were within normal limits. Peripheral smear examination revealed microcytic hypochromic red blood cells with increased white blood cell (WBC) counts. Differential counts showed 90% neutrophils, no blasts were seen [Figure 5b]. Absence of fever, normal ESR and no blast on peripheral smear suggested us to consider the granulocytosis due to paraneoplastic manifestation. Since the condition of the patient was poor, supportive treatment was offered but the patient expired after few days.

DISCUSSION

Skin metastasis occurs in 0.6–1.4% of all visceral malignancy and represents 2% of all skin tumors.^[5] Most common primary tumor to metastases to the skin varies with gender. Among males, malignant melanoma is most common followed by carcinomas of lung, large intestine, oral cavity, larynx and kidney. In case of females, carcinoma of the breast is most common followed by malignant melanoma and carcinomas of ovary, large intestine, lung and oral cavity.^[6] Clinically, these lesions present as nodules, papule, plaques and ulcers. These lesions are challenging to dermatologist and dermatopathologist as they may be the initial manifestation of an occult malignancy.^[5]

Visceral metastases are infrequently observed with carcinoma of palatine tonsil (as observed in our Case 2) with lung being the commonest site followed by liver and bone. Rarer sites such as central nervous system, mediastinum and breast are

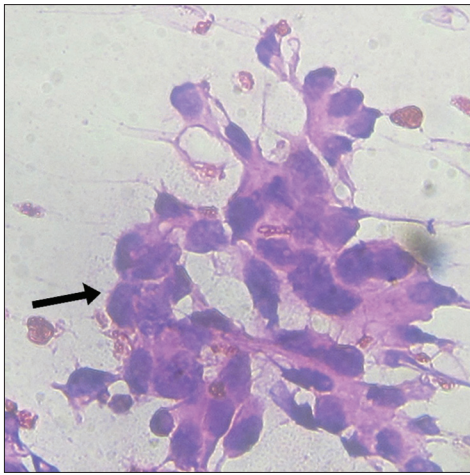


Figure 3: Cytology smear from lymphnode showing cluster of malignant squamoid cells with increased nuclear cytoplasmic ratio with vesicular, pleomorphic nuclei (arrow) (H&E stain, ×400)

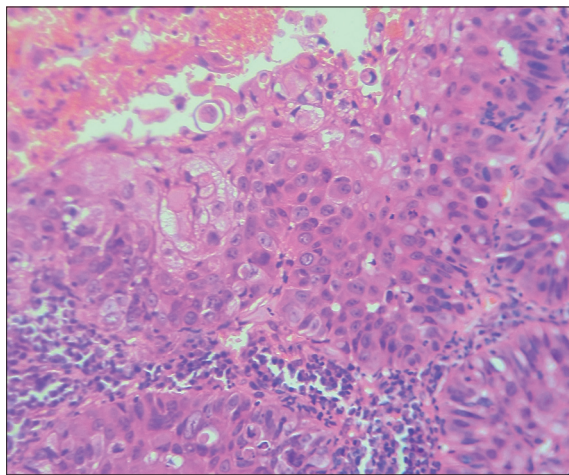


Figure 4: Photomicrograph of tonsil showing invasive cluster of tumor cells of squamoid nature (H&E stain, ×400)

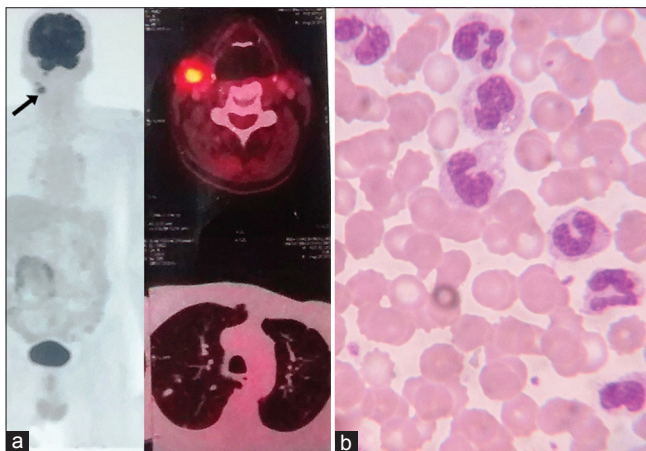


Figure 5: (a) Positron emission tomography scan showing increased metabolic activity in left tonsillar area, (b) Peripheral smear showing increased number of granulocytes (neutrophils), Note the absence of blasts (Leishman's stain, ×1000)

also been reported but cutaneous metastasis is extremely rare.^[1,7,8] Dasmajumdar *et al.*^[1] reported for the first time in the literature such a rare case in a 40-year-old male who was initially diagnosed as SCC of tonsil and received radiotherapy. On subsequent follow-up, 2-year later he developed swelling in the left periorbital region, which was diagnosed cytologically as SCC. No lesion was detected in the tonsil and lymphnodes, patient received palliative radiotherapy and swelling showed 50% regress and he was lost to followup. Our Case 1 also had similar clinical features and 1½ years later he developed cutaneous metastasis, necessitating the long-term follow-up of these cases. Cutaneous metastasis is a marker of poor prognosis (as observed in our Case 1).^[1]

Most common sites for cutaneous metastases are chest and abdomen, followed by head and neck. Extremities are rarely involved. Some of the tumors will have characteristic clinical appearance. Metastatic neuroblastomas are described as blueberry muffins which are multiple, firm, nontender, mobile and bluish subcutaneous nodules. Umbilical nodules called “Sister Mary Joseph’s nodule” represent the underlying intra-abdominal carcinoma such as adenocarcinomas of stomach, pancreas, colon and ovary. Breast carcinomas mimic cellulitis. Cutaneous metastasis occurs either by hematogenous or lymphatic route. If the tumors spread by lymphatics then the skin metastasis will be close to the primary tumor (as observed in our Case 1).^[6]

Paraneoplastic syndromes include variety of disorders due to the neoplastic disease affecting the neurological, endocrine, mucocutaneous and other systems. Some of these disorders occurs due to cross reactivity of the antibodies directed against the tumor antigen and few occurs due to ectopic hormone production by tumor cells.^[3] Hematological manifestations are either due to release of certain cytokines/chemokines by the tumor cells and also due to the bone marrow infiltration.^[9]

An array of paraneoplastic syndromes have been described with tonsillar carcinoma, neurological manifestations being the commonest. The paraneoplastic syndromes associated with tonsillar carcinoma reported in the literature is as shown in Table 1.^[2-4,10-20] Paraneoplastic granulocytosis is observed in 15% of solid tumors. The common tumors associated with paraneoplastic granulocytosis include gastrointestinal, lung, breast, gynecological, brain, Hodgkin’s lymphomas, genitourinary carcinomas and sarcomas.^[9]

In paraneoplastic granulocytosis, WBC count usually range from 12 to 30 × 10⁹/l. But, in some cases, it exceeds 50 × 10⁹/l (as described in our Case 2). The common causes of granulocytosis in a patient with underlying neoplasia are therapeutic use of hematopoietic growth factors (69%), infection (15%) and paraneoplastic syndrome (10%). Rarer cause includes drugs and newly detected chronic myeloid leukemia (CML). A careful peripheral smear examination and normal leukocyte alkaline phosphatase rules out CML.

Table 1: Paraneoplastic syndrome associated with tonsillar carcinoma (as reported in the literature)

Author	Year	Age/sex years	Histological type of tonsillar carcinoma	Paraneoplastic syndrome
Endo <i>et al.</i> ^[10]	1983	60/male	SCC	Ectopic ACTH, beta-LPH and beta-endorphin
Greulich <i>et al.</i> ^[11]	1992	-	SCC	Garcin syndrome
Pericot <i>et al.</i> ^[12]	2001	-	SCC	Sensory neuropathy
Mineta <i>et al.</i> ^[13]	2001	-	SCC	SIDAH
Wright and Gudelis ^[14]	2002	62/male	SCC	Digital necrosis
Botsios <i>et al.</i> ^[15]	2003	67/male	SCC	Dermatomyositis
Ali <i>et al.</i> ^[16]	2004	-	Adenocarcinoma	Flexural Bazex syndrome
McKeon <i>et al.</i> ^[17]	2010	69/male	SCC	Myelopathy
Kim <i>et al.</i> ^[18] (2 cases)	2010	61/female and 64/male	SCC	Dermatomyositis
Adams <i>et al.</i> ^[19]	2011	55/male	SCC	Narcolepsy, REM sleep behavior disorder and supranuclear gaze palsy
Janus <i>et al.</i> ^[3]	2013	69/male	SCC	Tractopathy
Henke <i>et al.</i> ^[4]	2013	38/male	Lymphoepithelial carcinoma	Cerebellar degeneration
Scholz <i>et al.</i> ^[20]	2014	56/male	SCC	Dermatomyositis
Adi <i>et al.</i> ^[2]	2015	63/male	SCC	Dermatomyositis
Present case	2015	70/male	SCC	Granulocytosis

SCC: Squamous cell carcinoma, ACTH: Adrenocorticotropic hormone, SIDAH: Syndrome of inappropriate secretion of antidiuretic hormone, REM: Rapid eye movement, LPH: Lipotropic hormone

Presence of fever, increased C-reactive protein and ESR favors infection.^[9]

Cutaneous metastasis and paraneoplastic syndromes (PNS) are rarely associated with neoplastic processes and are still rarer with carcinoma of palatine tonsil. Both the conditions may be the initial manifestation of an occult malignancy or manifest at advance disease condition (as described in our cases).^[6,9] Cutaneous metastasis is a bad prognostic marker and requires adjuvant chemotherapy/radiotherapy. Median survival recorded in the literature is 3 months (same also been noted in our Case 1).^[1] PNS is an asymptomatic condition that does not require treatment and usually disappears when the underlying disease is treated.^[9]

CONCLUSION

Cutaneous metastasis and paraneoplastic syndrome are uncommon associations with carcinoma of tonsil. It is evident from the observation of our case and also from review of literature that cutaneous metastasis develops 1–2 years after the diagnosis of primary lesion, necessitating the long-term follow-up of these cases and it is a marker of poor prognosis. Even though handful cases of paraneoplastic syndrome were described with carcinoma of tonsil, granulocytosis as a paraneoplastic manifestation is being reported for the first time.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published

and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

REFERENCES

- Dasmajumdar SK, Gairola M, Sharma DN, Mohanti BK. Cutaneous metastasis from carcinoma of tonsil. *J Postgrad Med* 2002;48:32-3.
- Adi AH, Alturkmani H, Spock T, Williams Yohannes P, Wargo S, Szabo E, *et al.* Dermatomyositis paraneoplastic syndrome before symptomatic tonsillar squamous cell carcinoma: A case report. *Head Neck* 2015;37:E1-3.
- Janus JR, Chinnadurai S, Moore EJ. Case report: Paraneoplastic neurologic syndrome associated with squamous cell carcinoma of the tonsil. *Ear Nose Throat J* 2013;92:E13.
- Henke C, Rieger J, Hartmann S, Middendorp M, Steinmetz H, Ziemann U. Paraneoplastic cerebellar degeneration associated with lymphoepithelial carcinoma of the tonsil. *BMC Neurol* 2013;13:147.
- Alcaraz I, Cerroni L, Rütten A, Kutzner H, Requena L. Cutaneous metastases from internal malignancies: A clinicopathologic and immunohistochemical review. *Am J Dermatopathol* 2012;34:347-93.
- Gandotra G, Gupta B, Kapoor R, Gupta A. Cutaneous metastasis: A rare clinical entity. *JK Sci* 1999;1:179-81.
- Dobelbower MC, Nabell L, Markert J, Carroll W, Said-Al-Naief N, Meredith R. Cancer of the tonsil presenting as central nervous system metastasis: A case report. *Head Neck*

- 2009;31:127-30.
8. Munshi A, Sharma R, Iyer VK, Chander B, Rath GK. Carcinoma of the tonsil with bilateral breast metastasis: A rare presentation. *Australas Radiol* 2005;49:519-21.
 9. Pelosof LC, Gerber DE. Paraneoplastic syndromes: An approach to diagnosis and treatment. *Mayo Clin Proc* 2010;85:838-54.
 10. Endo Y, Miura A, Suda T. Ectopic ACTH-, beta-LPH- and beta-endorphin-producing metastatic carcinoma of the lung from the tonsil. *Jpn J Med* 1983;22:122-4.
 11. Greulich W, Sackmann A, Schlichting P. Garcin syndrome. Clinical aspects and diagnosis of a rare cranial nerve syndrome with special reference to computerized tomography and nuclear magnetic resonance image findings. *Nervenarzt* 1992;63:228-33.
 12. Pericot I, Río J, Jaén A, Crespo F, Codina A. Paraneoplastic sensory neuropathy due to pharynx and tonsil squamous cell carcinoma. *Neurologia* 2001;16:237-9.
 13. Mineta H, Miura K, Takebayashi S, Araki K, Ueda Y, Harada H, *et al.* Immunohistochemical analysis of small cell carcinoma of the head and neck: A report of four patients and a review of sixteen patients in the literature with ectopic hormone production. *Ann Otol Rhinol Laryngol* 2001;110:76-82.
 14. Wright JR, Gudelis S. Digital necrosis associated with squamous cell carcinoma of the tonsil. *Head Neck* 2002;24:1019-21.
 15. Botsios C, Ostuni P, Boscolo-Rizzo P, Da Mosto MC, Punzi L, Marchiori C. Dermatomyositis and malignancy of the pharynx in Caucasian patients: Report of two observations. *Rheumatol Int* 2003;23:309-11.
 16. Ali M, Keir M, Dodd H, Cerio R. Flexural Bazex syndrome associated with tonsillar adenocarcinoma. *J Drugs Dermatol* 2004;3:557-9.
 17. McKeon A, Apiwattanakul M, Lachance DH, Lennon VA, Mandrekar JN, Boeve BF, *et al.* Positron emission tomography-computed tomography in paraneoplastic neurologic disorders: Systematic analysis and review. *Arch Neurol* 2010;67:322-9.
 18. Kim SW, Shim JS, Eun YG, Kwon KH. Tonsillar squamous cell carcinoma associated with dermatomyositis: The first 2 cases in Korea. *Yonsei Med J* 2010;51:605-8.
 19. Adams C, McKeon A, Silber MH, Kumar R. Narcolepsy, REM sleep behavior disorder, and supranuclear gaze palsy associated with Ma1 and Ma2 antibodies and tonsillar carcinoma. *Arch Neurol* 2011;68:521-4.
 20. Scholz E, Trebing D, Knipping S. Dermatomyositis with tonsillar carcinoma. Rare presentation as paraneoplastic syndrome. *HNO* 2014;62:282-5.