

Case Report

An unusual site of metastasis from carcinoma of tongue – metastasis to lumbar vertebrae: A case report and review of literature

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Abstract

Background: Carcinoma of tongue is a common site of oral cancer. It usually occurs at mean age of 61.1 years and is more common in males when compared with females. It commonly spreads directly and through lymphatics to the surrounding structures. It has a low incidence of hematogenous metastasis. Lung is the usual distant metastasis site for carcinoma of tongue and other head and neck cancers. Metastases to vertebrae are rare and very few cases have been reported.

Case Description: We report a rare case of carcinoma of tongue spreading to lumbar vertebrae causing destruction of the body and thecal sac compression. A patient underwent posterior transpedicular approach, tumor decompression, and titanium cage placement. The patient had good relief of symptoms and could be mobilized on first postoperative day.

Conclusion: Hematogenous spread to the spine is a rare phenomenon but should be kept in mind particularly in advanced stage of oral cancers.

Key Words: Carcinoma of tongue, lumbar, metastasis, vertebrae

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INTRODUCTION

One of the common site of oral cancer is tongue and accounts for 2% of all cancer deaths.^[5] Patients usually present at a mean age of 61.1 years and there is a 1.5:1 male-to-female ratio. Approximately half of the cancers were diagnosed at an advanced stage and most of them involve base of the tongue.^[5] Squamous cell carcinoma (SCC) is usual histopathological variant.^[12] The local spread to cervical lymph nodes is an adverse prognostic factor in patients with SCC, and extracapsular spread from cervical lymph nodes to regional and distant sites is a reliable predictor of recurrence and death from disease.^[13]

Approximately 5%–10% of all cancer patients develop spinal metastasis;^[1] however, vertebral metastases are rare

form of distant metastasis from SCC of the oral cavity. Persistent back or neck pain should alert the surgeon which warrants a detailed radiological examination in such patients.^[2]

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CASE REPORT

A 50-year-old patient, chronic smoker, presented to us with a non-healing ulcer on tongue with restricted mouth opening (around 2 fingerbreadth) for 3 months. Examination of oral cavity revealed non-healing ulcer on right lateral border of tongue with palpable neck nodes [Figure 1]. He was evaluated elsewhere before with tongue tissue biopsy and computed tomography (CT) contrast neck and was diagnosed to have a poorly differentiated SCC with secondaries in neck (stage IV B) [Figure 2]. He was started on chemoradiotherapy. During treatment, he had a trivial fall at his workplace and developed severe back pain and was unable to walk. He was referred to our center for further evaluation.

On examination, patient was bed-bound and unable to move out of bed due to severe pain which localized to lumbar region, with tenderness and restriction of movements. Tone, bulk, and power were normal in both lower limbs; however, he had sensory loss of 60%–70%, in L2 and L3 dermatomes in bilateral lower limbs.

He was evaluated with magnetic resonance imaging (MRI) and CT of lumbar spine with whole-spine screening. On MRI imaging, there was destruction of L2 vertebral body with hypointense signal on T1WI and heterogeneous signal on T2WI. There was relative preservation of disc space, but vertebral body was collapsed causing a focal kyphosis with compression of thecal sac, predominantly on the right side [Figure 3a and b]. CT imaging [Figures 3-5] showed destruction of L2 vertebral body, pedicle, transverse process, and laminae on the right side. The patient underwent posterior transpedicular approach and tumor decompression, titanium cage placement, and L1, L3 transpedicular screws and rod fixation. Postoperatively, the patient had significant relief of pain and could walk on his own on first postoperative day. Postoperative imaging showed correction of kyphotic deformity and restoration of normal lordosis with good placement of screws and cage [Figure 6]. Histology of the excised tissue confirmed SCC deposits [Figure 7].



Figure 1: Ulcerative lesion at right lateral border of tongue (4 cm × 2 cm)

The patient was discharged from the hospital on postoperative day 5 and sent for continuation radiotherapy again. At 5 months of follow-up, the patient had completed adjuvant therapy and was ambulatory.

DISCUSSION

Carcinoma of tongue is one of the most common carcinoma of all oral cavity, and about half of them involve the base of the tongue.^[5] It usually presents with difficulty in swallowing. Common etiology of oral cancer is smoking followed by alcohol consumption.^[5] Most common carcinoma of tongue spreads directly to the surrounding tissues, hematogenous spread is rare, and lung is the usual site of metastasis for spread by this route.^[9] Spread to vertebral body is very rare but reported in the literature as few case reports. Lee *et al.*^[10] reported two cases of lumbar vertebral metastasis from SCC of tongue. One case of delayed metastasis to C3 vertebral body from primary adenoid cystic carcinoma of tongue was reported by Feng *et al.*^[3] Metastasis to cervical vertebrae from oral SCC has also been reported by Carlson *et al.* in 4 patients (0.7%) out of 597 patients in their series.^[2] Although metastasis to spine is usually extradural, intramedullary metastasis has also been reported by Tornwall *et al.* in one case.^[15]

The treatment offered in advanced cases of head and neck malignancy is often palliative. As our patient was in stage IV B, he was started on chemoradiotherapy by oncologist. During treatment, he developed severe back pain after a trivial fall.

We evaluated him with MRI lumbosacral spine, which showed destructive lesion in the L2 vertebral body. As tuberculosis is more common in our country, we considered tuberculosis spine as the first possible diagnosis; however, there was no significant paravertebral collection and no involvement of adjacent disc spaces

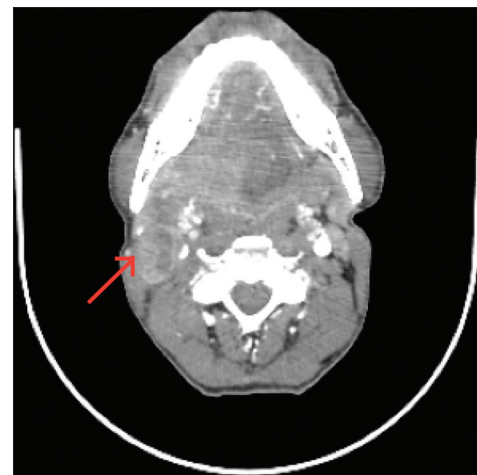


Figure 2: CT image axial section neck large (2.5 cm) lymph node in the anterior part of neck

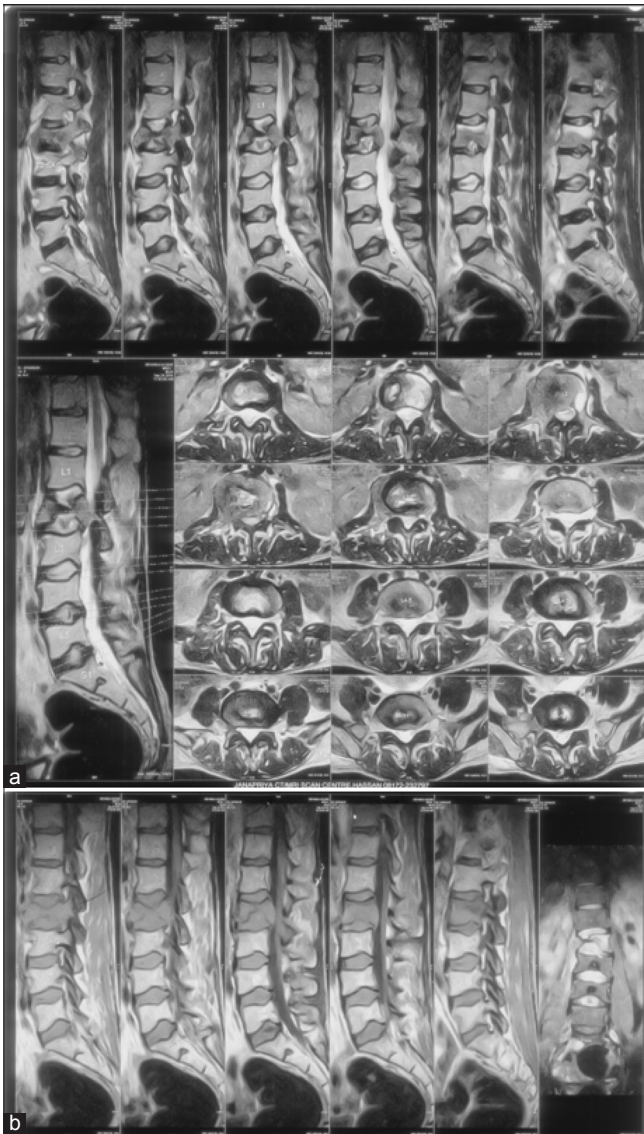


Figure 3: (a) MRI T2 image showing vertebral body collapse and thecal sac compression. (b) MRIT1 image showing vertebral collapse

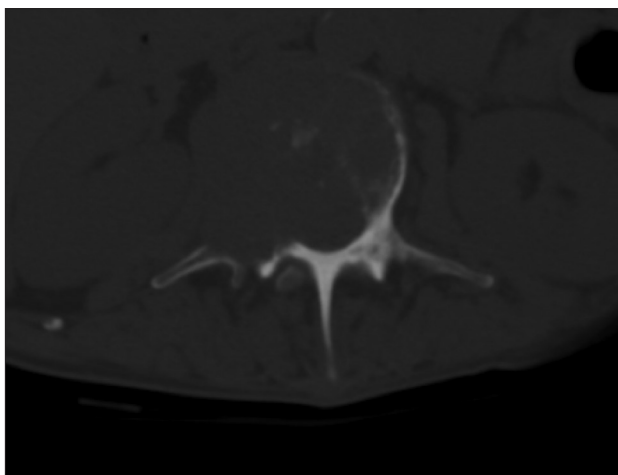


Figure 5: CT axial section showing destruction of vertebral body with involvement of right pedicle, lamina, and transverse process



Figure 4: CT sagittal image showing L2 body destruction



Figure 6: CT sagittal image showing cage at L2 vertebral level and L1 and L3 screws

which were odd points. This made us to consider diagnosis of metastasis from tongue carcinoma, although it is rare from this primary site. CT scan lumbosacral region revealed destruction of vertebral body with involvement of right pedicle, favoring diagnosis of metastasis.

It is very well known that if metastatic vertebral disease is left untreated, it may lead to paraplegia,^[4,7,11] which is one of the most serious complication of metastasis. Harrington described a classification guideline system based on both bone destruction and neurologic impairment and distinguishes five classes of vertebral metastatic lesions and suggested surgical intervention for class IV and V lesions.^[8] Our patient was in class V according to Harrington classification. He underwent tumor decompression by transpedicular approach, placement of expandable cage in L2 vertebral space, and L1–L3 transpedicular screw fixation. He had excellent relief of pain and could be mobilized on first postoperative day. After healing of wound, he was started on radiotherapy again.

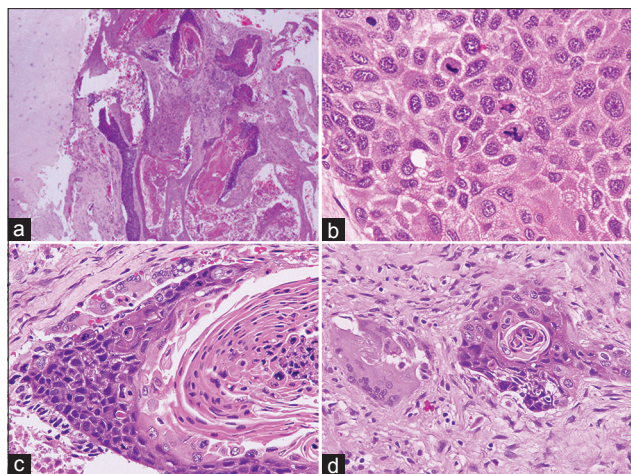


Figure 7: Spinal metastasis of squamous cell carcinoma. (a) Large irregular deposits of neoplastic epithelial cells in fibrocollagenous soft tissue (right) adjacent to normal disc cartilage (left). (b) A cohesive cluster of malignant squamous epithelial cells with brisk mitoses. (c) Keratinizing neoplastic tumor cells partially rimmed at the top by foreign body giant cell reaction against keratin material. (d) Closer view of a foreign body giant cell (left) with neoplastic cells and keratin (right). [Stain: a–d: H and E; magnification – a: 20×, c, d: band 80×]

Prognosis for metastatic spine disease is dependent on several factors. Patients with single-level involvement have a better survival rate (average survival, 12.9 months) than patients with multiple-level involvement (average, 7.9 months).^[14] Age can also be considered as a prognostic factor for survival, because patients younger than 60 years survive significantly longer than older patients (20.1 vs. 6.2 months; $P = 0.028$).^[16] The 5-year disease-specific survival rates for stage IV disease reported by Gourin *et al.* was 48%.^[6]

As our patient is 50 years of age and had only single vertebral body (L2) involvement, prognosis is likely to be good.

CONCLUSION

Our case report substantially adds to the existing case reports of carcinoma of tongue with metastasis to spine which is a rare event. Advanced cases of oral carcinoma can be very aggressive and metastatic spread to spine should be considered as a possibility though it is rare, especially when patient presents persistent back pain. Vertebral metastasis from oral cancer is due to hematogenous spread which usually occurs in advanced stage of oral cancers.

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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Nil.

Conflicts of interest

There are no conflicts of interest.

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