

Solitary Ischial Metastasis from Primary Tongue Squamous Cell Carcinoma: A Rare Case and Literature Insight

Sabrina Taher¹, Taohida Yasmin², S.M Mahbubul Alam³, Arman Reza Chowdhury^{4*}

1. Specialist,
Radiation Oncology,
Evercare Hospital Dhaka
2. Associate Consultant,
Radiation Oncology,
Evercare Hospital Dhaka
3. Senior Consultant,
Histopathology,
Evercare Hospital Dhaka
4. Senior Consultant,
Radiation Oncology,
Evercare Hospital Dhaka

*** Address for Correspondence:**

Dr. Arman Reza Chowdhury
Senior Consultant
Radiation Oncology,
Evercare Hospital Dhaka
Email: rezadrarman@gmail.com

Date of submission: 15.03.2025

Date of acceptance: 20.04.2025

ABSTRACT

Background: Squamous cell carcinoma (SCC) of the oral tongue commonly metastasizes to regional cervical lymph nodes, but distant skeletal metastases are exceedingly rare.

Case Presentation: We report a 54-year-old male diagnosed with grade I SCC of the right lateral tongue with regional lymph node metastasis. Following surgical excision and neck dissection, the patient received concurrent chemoradiotherapy. Despite no locoregional recurrence during follow-up, the patient developed isolated bony metastasis to the right ischium ten months post-diagnosis. Histopathology confirmed poorly differentiated SCC at the metastatic site. Palliative radiotherapy and bisphosphonates led to symptomatic improvement.

Conclusion: This case highlights the rare occurrence of bony metastasis in primary tongue carcinoma and emphasizes the importance of prolonged, vigilant follow-up and multidisciplinary care to detect and manage atypical disease progression.

Keywords: Tongue carcinoma, ischial metastasis, squamous cell carcinoma, bone metastasis, palliative radiotherapy

INTRODUCTION

Tongue squamous cell carcinoma (SCC) is one of the most prevalent malignancies of the oral cavity, accounting for approximately 2% of global cancer-related mortality¹. The disease primarily affects individuals around a mean age of 61 years and is often diagnosed at advanced stages, particularly with lesions located at the base of the tongue. Histologically, SCC is the most common variant^{2,3}. In South Asian countries, including Bangladesh, the high incidence of tongue carcinoma is attributed to the widespread use of smokeless tobacco products, such as betel quid with lime and areca nut, along with habitual smoking and poor socioeconomic conditions^{4,5}.

While bone metastases are frequently associated with malignancies like breast and prostate cancer, their occurrence in head and neck cancers—including tongue SCC—is exceedingly rare. The likelihood of distant metastasis is influenced by factors

such as the location of the primary tumor, initial T and N staging, and the status of regional disease control above the clavicle^{6,7}.

The development of distant skeletal metastases in tongue SCC not only indicates a poor prognosis but also necessitates substantial adjustments in treatment strategies⁷. Timely recognition of such rare metastatic patterns is essential for optimizing patient outcomes and guiding palliative interventions.

CASE SUMMARY

A 54-year-old male with a significant history of chronic smoking and habitual betel nut use was diagnosed with grade I squamous cell carcinoma (SCC) of the right lateral tongue on November 23, 2023, following a punch biopsy. Imaging revealed a 3 × 2 cm lesion along with cervical lymphadenopathy (Stage IVA). On December 12, 2023, he under-

Case Report

went wide local excision of the primary tumor and right-sided extended supra-omohyoid neck dissection. Histopathology confirmed SCC with metastasis to multiple cervical lymph nodes.

The patient received adjuvant concurrent chemoradiotherapy, consisting of 6000 cGy in 30 fractions with weekly cisplatin, which was completed without complications by February 18, 2024. Follow-up imaging in June 2024 demonstrated mild soft tissue thickening at the surgical site and small cervical lymph nodes, consistent with postoperative changes. An MRI performed in August 2024 showed reactive inflammatory changes without any evidence of recurrence. Incidentally, thyroid dysfunction was detected during follow-up and was managed medically.

Approximately five months post-treatment, in October 2024, the patient presented with progressive right-sided pelvic pain, ultimately resulting in impaired ambulation. On examination, he was bedbound due to severe pain localized to the right pelvic region, with marked tenderness and restricted range of motion. Neurological evaluation of the lower limbs showed normal tone, bulk, power, and intact sensation.

ASSESSMENT AND MANAGEMENT

To evaluate the cause of the patient's new-onset pelvic pain, a series of investigations were performed. MRI of the neck with contrast revealed postoperative reactive inflammatory changes at the right lateral border of the tongue, with no evidence of locoregional recurrence or cervical lymphadenopathy. An X-ray of the right hip demonstrated a lytic lesion in the ischium, raising suspicion for skeletal metastasis (Fig:1). This was further supported by a bone scan (Fig 2A,2B), which showed abnormal tracer uptake localized to the right ischial region. Subsequently, a CT-guided core biopsy of the lesion confirmed the presence of poorly differentiated metastatic squamous cell carcinoma (Fig 3). Based on these findings, palliative radiotherapy was administered to the ischial metastasis for pain relief, followed by the initiation of systemic palliative chemotherapy alongside bisphosphonate therapy, resulting in significant symptomatic relief.



Figure 1: Xray Right Hip shows lytic lesion in the right ischium.

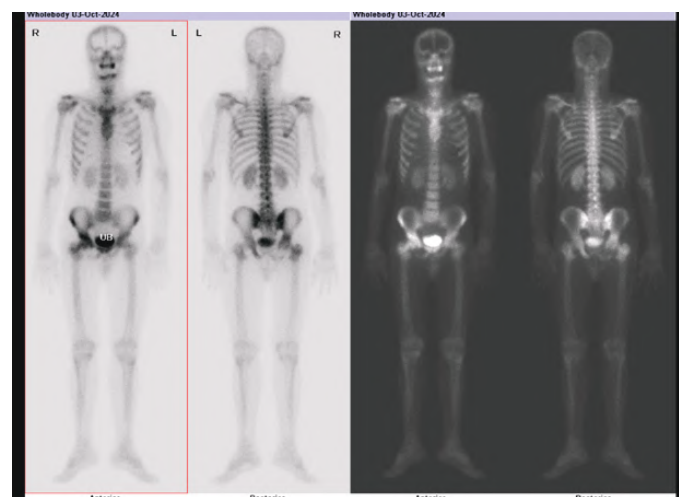


Figure2A: Bone Scan shows abnormal tracer uptake in Right Hip joint area.



Figure 2B: Bone Scan shows abnormal tracer uptake in Right Hip joint area.

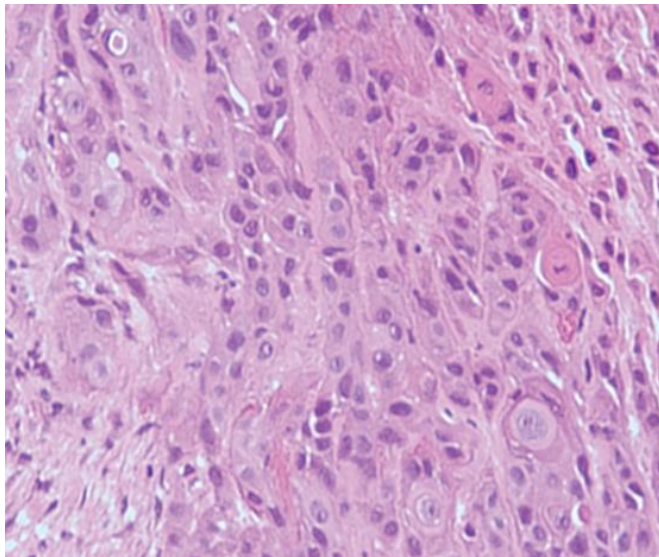


Figure 3: Histopathology shows nests of anaplastic cells infiltrated bony tissues. Tumor cells show keratinization.

DISCUSSION

Metastatic spread to the skeletal system from primary squamous cell carcinoma (SCC) of the tongue is an uncommon clinical occurrence. Bony metastases are not very often reported, particularly to regions such as the pelvis or ischium. Tongue SCC typically exhibits local invasion and regional lymphatic spread rather than distant dissemination, with the lungs and liver being more common sites for metastasis when it does occur. Bone metastases from tongue SCC typically emerge within the first 1–2 years after initial treatment in advanced-stage cases, and management is usually palliative, focusing on local control (radiotherapy or surgery for pain relief and stabilization) and systemic therapy as appropriate.

Several cases documented in the literature highlight the rarity of skeletal involvement in head and neck cancers. Lee et al., Paolo Cariatì et al. & Manish Baniwal et al. reported cases of vertebral metastasis arising from tongue SCC^{8,9,10} underscoring the possibility of spinal involvement, though infrequent. Carlson et al. documented cervical vertebral metastases in only 0.7% of oral SCC cases¹¹, while Tornwall et al. described a rare instance of intramedullary spinal cord metastasis¹². Feng et al. also presented a case of delayed metastasis to the C3

vertebral body from a primary adenoid cystic carcinoma of the tongue, further emphasizing the unusual metastatic behavior in some tongue malignancies¹³.

A retrospective study by Pietropaoli et al. involving 363 cases of head and neck SCC identified bone metastases in only 1% of cases¹⁴. Among these, pelvic and femoral lesions were observed. The time interval between primary diagnosis and detection of bone metastasis ranged from 9 months to 3 years. Moreover, the median survival following the identification of skeletal metastases was limited, often not exceeding a few months, illustrating the aggressive nature and poor prognosis associated with distant dissemination in head and neck cancers.

In the present case, the patient developed symptomatic ischial metastasis within five months of completing curative-intent treatment, indicating a highly aggressive disease course. The patient initially presented with severe right-sided pelvic pain and impaired mobility. Imaging studies and biopsy confirmed poorly differentiated metastatic SCC to the right ischium. Prompt initiation of palliative management was crucial for symptom control and improvement in quality of life.

The patient then received palliative external beam radiotherapy to the ischial lesion, with a total dose of 20 Gy delivered in 5 fractions. Concurrently, intravenous bisphosphonate therapy with Zoledronic acid (4 mg every four weeks) was initiated to reduce skeletal-related complications and enhance analgesic effects. At the four-week follow-up, the patient reported substantial improvement in pain and was able to ambulate independently. He also initiated systemic palliative chemotherapy.

This case highlights the importance of maintaining a high index of suspicion for atypical metastatic spread in tongue SCC, especially when patients present with unexplained bone pain. Early detection and timely palliative interventions, including radiotherapy and bisphosphonates, play a critical role in improving quality of life, even in the setting of advanced diseases. It also underscores the need for long-term, multidisciplinary surveillance strategies

to manage uncommon yet clinically significant patterns of metastasis.

CONCLUSION

This case illustrates an uncommon metastatic pattern in oral tongue SCC, involving solitary ischial bone metastasis after definitive curative-intent therapy.

Although rare, distant bone metastases should be considered in advanced cases of tongue squamous cell carcinoma, particularly when patients present with unexplained skeletal pain during follow-up. Routine surveillance with bone scans or PET-CT imaging may aid in early detection and prompt intervention. Such a proactive approach is essential for optimizing palliative care and improving the quality of life in affected patients.

REFERENCES

1. Bray F, Ferlay J, Soerjomataram I, Siegel RL, Torre LA, Jemal A. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin*. 2018;68(6):394–424. doi:10.3322/caac.21492.
2. Gorsky M, Epstein JB, Oakley C, Le ND, Hay J, Stevenson-Moore P. Carcinoma of the tongue: A case series analysis of clinical presentation, risk factors, staging, and outcome. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*. 2004;98(5):546–52.
3. Patel SC, Carpenter WR, Tyree S, Couch ME, Weissler M, Hackman T, et al. Increasing incidence of oral tongue squamous cell carcinoma in young white women, age 18 to 44 years. *J Clin Oncol*. 2011;29(11):1488–94. doi:10.1200/JCO.2010.31.7883.
4. Hussain SA, Sullivan R. Cancer control in Bangladesh. *Jpn J Clin Oncol*. 2013 Dec;43(12):1159–1169.
5. Gupta B, Johnson NW. Systematic review and meta-analysis of association of smokeless tobacco and oral cancer in South Asia and the Pacific. *Indian J Cancer*. 2014;51(Suppl 1):S73–S77. doi:10.4103/0019-509X.14747
6. Gupta B, Gupta A, Soni A, et al. Bone metastasis in head and neck cancer: A retrospective study of 3,620 cases. *J Cancer Res Ther*. 2022;18(Suppl 2):S210–S214
7. Grisanti S, Marino M, Buglione M, et al. Bone metastases from head and neck cancer: A multicenter analysis. *Cancers (Basel)*. 2019;11(10):1425.
8. Lee KH, Halfpenny W, Thiruchelvam JK. Spinal cord compression in patients with oral squamous cell carcinoma. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*. 2007;103(4):e16–8. doi:10.1016/j.tripleo.2006.11.041.
9. Cariati P, Pampin Ozan D, Arroyo Rodriguez S. Vertebral metastasis from squamous cell carcinoma of the tongue. *Front Oral Maxillofac Med* 2020;2:8.
10. Beniwal M, Vikas V, Rao KVLN, Srinivas D, Sampath S. An unusual site of metastasis from carcinoma of tongue - metastasis to lumbar vertebrae: A case report and review of literature. *Surg Neurol Int*. 2019;10:33. doi:10.4103/sni.sni_448_17. PMID: 31528371; PMCID: PMC6499465.
11. Carlson ER, Ord RA. Vertebral metastases from oral squamous cell carcinoma. *J Oral Maxillofac Surg*. 2002;60(8):858–62. doi:10.1053/joms.2002.33851
12. Törnwall J, Snäll J, Mesimäki K. A rare case of spinal cord metastases from oral SCC. *Br J Oral Maxillofac Surg*. 2008;46(7):594–5. doi:10.1016/j.bjoms.2008.02.004.
13. Feng H, Wang J, Guo P, Xu J, Feng J. C3 vertebral metastases from tongue adenoid cystic carcinoma: A rare case report. *Medicine (Baltimore)*. 2015;94(29):e1135. doi:10.1097/MD.0000000000001135.
14. Pietropaoli MP, Damron TA, Vermont AI. Bone metastases from squamous cell carcinoma of the head and neck. *J Surg Oncol*. 2000;75(2):136–40. doi:10.1002/1096-9098(200010)75:2<136::AID-JSO9>3.0.CO;2-D.9098 (200 010)75:2<136::AID-JSO9>3.0.CO;2-D.