

First Bite Syndrome as a Presenting Manifestation of Occult Head and Neck Neoplasms: A Systematic Review of Individual Patient Data

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INTRODUCTION

First Bite Syndrome (FBS) is a rare pain disorder characterised by unilateral, paroxysmal, sharp or electric shock–like pain in the parotid region triggered by the first bite of a meal and diminishing with continued mastication. Although most commonly reported following surgery involving the parotid, parapharyngeal space, or carotid region, FBS may also occur as the presenting manifestation of an occult head and neck neoplasm.^{1–6} Because of its rarity and frequent misdiagnosis, recognition is often delayed. This systematic review aimed to characterise the clinical presentation, management, and outcomes of tumour-associated FBS and evaluate its role as a potential early indicator of underlying malignancy.

METHODS

MEDLINE, Embase, Web of Science, and CINAHL were systematically searched to March 1, 2026. Peer-reviewed case reports/series of FBS were included. Two reviewers independently screened studies and extracted data. This subgroup analysis included only tumour-associated FBS. Demographic, clinical, treatment, and outcome data were analysed descriptively.

STUDY SELECTION

1,071 records

MEDLINE, Embase, Web of Science, CINAHL

71 studies included

case reports and series

150 patients with FBS

10 patients

with tumour-associated FBS

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RESULTS

- The search identified 1,071 records; 71 studies comprising 150 patients with FBS were included, of which **10 patients had tumour-associated FBS**.
 - Among these patients, 50% (5/10) were male and the mean age at symptom onset was 49.1 ± 20.1 years.
 - The median duration of FBS symptoms prior to diagnosis of the underlying neoplasm was **302.5 days** (IQR, 112.5–992.5 days).
 - Underlying tumours included adenoid cystic carcinoma (5/10, 50%), squamous cell carcinoma (2/10, 20%), mucoepidermoid carcinoma (1/10, 10%), osteoid osteoma of the temporal bone (1/10, 10%), and cervical sympathetic chain schwannoma (1/10, 10%).
 - Pain was severe (8/8, 100%), lasted seconds (7/7, 100%), and was unilateral and ipsilateral to the tumour (10/10, 100%) in all patients for whom these characteristics were reported.
 - The most common pain locations were the parotid region (40%), jaw (40%), and face (40%). Pain was most frequently described as electric (5/6, 83%) or sharp (2/6, 33%).
- Concurrent motor neuropathy was the most common associated neurological manifestation (2/10, 20%).
 - Treatment modalities included pharmacotherapy (3/10, 30%), botulinum toxin injections (1/10, 10%), parotidectomy (9/10, 90%), and radiotherapy (5/10, 50%).
 - Resolution of symptoms was reported in 9/10 cases (90%),** with a median symptom duration of 360 days (IQR, 120–900 days).

CLINICAL FEATURES

Feature	Finding	Frequency
Trigger	First bite of a meal, easing with continued chewing	10/10 (100%)
Laterality	Unilateral, ipsilateral to the tumour	10/10 (100%)
Severity	Severe	8/8 (100%)
Duration	Lasts seconds	7/7 (100%)
Quality	Electric or sharp	5/6 (83%) / 2/6 (33%)
Location	Parotid region, jaw, face	40% each
Associated	Concurrent motor neuropathy	2/10 (20%)
Timing	Precedes tumour diagnosis	Median 302.5 days

CONCLUSION

Tumour-associated FBS has a **distinctive phenotype** characterised by severe unilateral pain triggered by the first bite of a meal. As symptoms commonly precede diagnosis of occult head and neck neoplasms by several months, recognition of this pattern should prompt **investigation for an underlying malignancy** and facilitate earlier diagnosis.

