

## Maxillary carcinoma

### *A wolf in sheep's clothing*

Patrick Mehanna BDS MBBS FRACDS(OMS) FDSRCS    Graham Smith BDS MBBS FRCS(OMFS) FRCS(Eng)

Oral squamous cell carcinoma (SCC) represents 90% to 95% of all malignant neoplasms of the oral cavity. It is classically regarded as an adult disease entity and has a high correlation with alcohol and tobacco consumption.<sup>1</sup> Oral SCC occurs in several well established intraoral sites, including the floor of mouth, tongue (most common), gingiva, lips, and buccal mucosa. It might also present in the tooth-bearing segment of either the maxilla or the mandible, with bony involvement. We present a case of a maxillary carcinoma presenting with signs suggestive of trigeminal neuralgia (TN), initially seen and treated in general practice, and discuss its presentation and management. This case emphasizes that a careful history, with extraoral and intraoral examination, should be taken before definitive diagnosis of TN and that, if in doubt, early specialist referral is necessary to exclude an alternative underlying pathology.

### Case description

In March 2008, a 59-year-old man presented to the Accident and Emergency Department at St George's Hospital in London, UK, complaining of persistent pain in the left side of the maxilla following a tooth extraction 1 week earlier. He was booked for a consultant review appointment at an outpatient clinic; results of an urgent biopsy confirmed invasive SCC of the maxilla.

The patient had initially presented to his general medical practitioner in December 2007 with left-sided facial pain. His medical history included medically controlled hypertension and hypercholesterolemia, substantial alcohol intake of 60 to 70 units a week, and a habit of smoking 5 to 6 cigarettes a day since the age of 16 (a habit he broke in 2007). A diagnosis of TN was made, and the patient's condition was reviewed weekly by his general practitioner. The medications he was prescribed to treat TN consisted of carbamazepine, pregabalin, and regular analgesics to help alleviate the pain.

His symptoms continued throughout January and, upon consulting a dentist in February, his left, upper-molar wisdom tooth was extracted, as it was thought to be contributing to his symptoms. Because of the increasing pain following the extraction, the man

presented to the Accident and Emergency Department in March. The maxillofacial surgery junior resident suspected an underlying pathology, and the man was booked for the consultant review, at which left-sided facial pain, cheek paresthesia, and left-sided nasal obstruction were documented. Intraoral examination revealed a 4- to 5-cm ulcerated area in the left maxillary alveolus (**Figure 1**).

**Figure 1.** Left maxillary lesion in a patient with maxillary carcinoma



Investigations included an incisional biopsy of the lesion under local anesthetic, an orthopantomogram, and a computed tomography (CT) scan of the thorax, neck, and mandible. A well-differentiated SCC was diagnosed. The CT scan showed an extensive left-maxillary SCC with gross invasion and destruction of the maxillary sinus, lateral nose, orbits, and ethmoid sinus (**Figure 2**). Over the next few weeks the patient developed marked restriction and hyperglobus of the left eyeball, with ophthalmoplegia and diplopia consistent with the disease progression (**Figure 3**).

The case was discussed at the Multidisciplinary Head and Neck Clinic at St George's Hospital. The tumour was deemed to be surgically unresectable and palliative chemoradiotherapy was instigated.

### Discussion

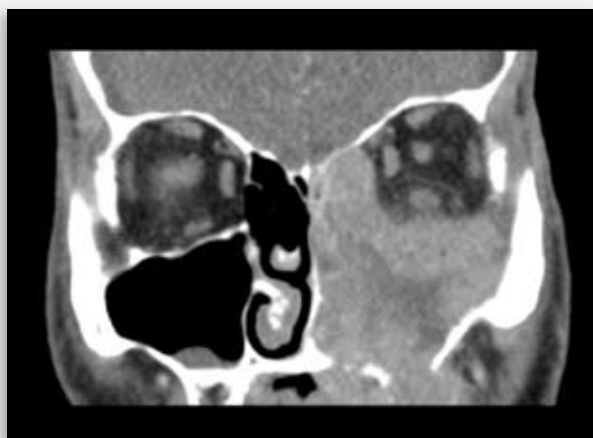
Oral SCC is a disease entity with well established risk factors, including smoking and alcohol use. It can present on the tongue (most common), floor of the

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Cet article a fait l'objet d'une révision par des pairs.

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**Figure 2.** Coronal computed tomography scan showing extensive invasion by squamous cell carcinoma of the maxilla



**Figure 3.** Facial photograph showing marked alteration of eyeball positioning due to orbital invasion



mouth, buccal mucosa, or gingiva and commonly presents as a nonhealing, exophytic or endophytic ulcer with associated local and regional pain. Otagia, dysphagia, mobile teeth, and weight loss might also be present. A MEDLINE search was performed using the term *maxillary carcinoma*, with the subheadings *maxillary neoplasms* and *squamous cell carcinoma*. Other relevant papers were also examined.

Oral SCC is typically associated with the mandible or the maxilla but will slowly invade the underlying tissues after onset. Invasive maxillary SCC will exhibit a multitude of clinical signs and symptoms, which might mimic

facial pain syndromes, including TN. In the early stages of the disease, the patient will first complain of localized maxillary pain; later, symptoms might progress to mobility of teeth. This was noted in the discussed case. As the tumour invades the maxilla and infiltrates the maxillary sinus, the patient will experience nasal congestion due to direct-obstruction symptoms. The infraorbital nerve (branch of the maxillary division of the trigeminal nerve) will also be affected, resulting in sensory disturbances of the cheek. Our patient complained of both paresthesia and nasal obstruction. Superimposed pain due to the direct infiltrative behaviour of the tumour will also be reported.


As the tumour progresses superiorly, the orbital floor—only a few millimetres thick—will be encountered and will provide minimal resistance to orbital infiltration. This will result in restriction of ocular mobility and alteration of eyeball positioning, secondary to direct infiltration of the periorbital and extraocular muscles. Next will be ethmoidal involvement. The management of head and neck cancers involves accurately staging the extent of the disease (with the aid of investigations such as CT or magnetic resonance imaging), in accordance with the TNM Classification of Malignant Tumours,<sup>2</sup> and determining if surgical resection is feasible. Early diagnosis is, therefore, paramount to favourable prognosis. The management of maxillary oral SCC involves radical surgical resection (hemimaxillectomy or maxillectomy), which might also include orbital exenteration and combined neurosurgical access procedures followed by adjuvant radiotherapy. Depending on the stage of the disease, the odds of 5-year survival can range from 40% to 60%. Although the management of a node-negative neck remains controversial,<sup>3</sup> the presence of cervical nodal metastasis decreases survival by 50% and warrants therapeutic neck dissection followed by adjuvant radiotherapy.<sup>4</sup> Reconstructive options range from a nonbiologic obturator (a modified denture that extends to replace the resected tissue) to complex, microvascular, free-tissue transfer (composite fibula, scapula, deep circumflex iliac artery, or soft-tissue rectus transfer), depending on the extent of resection as well as patient factors.<sup>5-7</sup>

## Conclusion

Invasive SCC can be difficult to diagnose in its early stages and

### Signs and symptoms suggestive of invasive oral squamous cell carcinoma

- Unremitting progressive pain
- Paresthesia
- Localized mobility of teeth or recent extractions
- Intraoral gingival lesion
- Palatal lesion
- Halitosis
- Cheek swelling
- Nasal obstruction
- Nasal discharge and epistaxis
- Ophthalmoplegia and diplopia
- Proptosis
- Lymphadenopathy
- Recent weight loss

might be misdiagnosed as facial pain syndromes (such as TN), which often present as a unilateral shooting pain and commonly affect branches of the trigeminal nerve. Treatment of TN is initially effective in up to 90% of patients but will dampen neural impulses,<sup>8</sup> disguising any alternate pathology. This case confirms that a careful history and extraoral and intraoral examination as well as appropriate investigations, such as a CT scan, should be undertaken before definitively diagnosing TN. If in doubt, early specialist referral to exclude an underlying malignancy is absolutely necessary. 

**Dr Mehanna** was a Fellow in Maxillofacial Head and Neck Surgery at St George's Hospital in London, UK, at the time of writing. **Dr Smith** is a consultant in the Department of Oral and Maxillofacial Surgery at St George's Hospital.

## Competing interests

None declared

## Correspondence

**Dr Patrick Mehanna**, Oral and Maxillofacial Surgery, John Hunter Hospital, Lookout Rd, New Lambton, NSW 2305; e-mail [drpmehanna@hotmail.com](mailto:drpmehanna@hotmail.com)

## References

1. Llewellyn CD, Johnson NW, Warnakulasuriya KA. Risk factors for squamous cell carcinoma of the oral cavity in young people—a comprehensive literature review. *Oral Oncol* 2001;37(5):401-18.
2. Patel SG, Shah JP. TNM staging of cancers of the head and neck: striving for uniformity among diversity. *CA Cancer J Clin* 2005;55(4):242-58.
3. Jeremic B, Nguyen-Tan PF, Bamberg M. Elective neck irradiation in locally advanced squamous cell carcinoma of the maxillary sinus: a review. *J Cancer Res Clin Oncol* 2002;128(5):235-8. Epub 2002 Apr 10.
4. Shah JP, Anderson PE. Evolving role of modifications in neck dissections for oral squamous cell carcinoma. *Br J Oral Maxillofac Surg* 1995;33(1):3-8.
5. Cordeiro PG, Santamaria E. A classification system and algorithm for reconstruction of maxillectomy and midfacial defects. *Plast Reconstr Surg* 2000;105(7):2331-46.
6. Futran ND. Primary reconstruction of the maxilla following maxillectomy with or without sacrifice of the orbit. *J Oral Maxillofac Surg* 2005;63(12):1765-9.
7. Sharma AB, Beumer J 3rd. Reconstruction of maxillary defects: the case for prosthetic rehabilitation. *J Oral Maxillofac Surg* 2005;63(12):1770-3.
8. Chole R, Patil R, Degwekar SS, Bhowate RR. Drug treatment of trigeminal neuralgia: a systematic review of the literature. *J Oral Maxillofac Surg* 2007;65(1):40-5.

## EDITOR'S KEY POINTS

- Signs and symptoms of maxillary carcinoma can resemble those of facial pain syndromes, particularly trigeminal neuralgia (TN). Extraoral and intraoral examination and a complete history should be undertaken before definitively diagnosing TN and, if in doubt, early specialist referral with biopsy is necessary to exclude underlying pathology.
- In the early stages, patients will present with localized maxillary pain and teeth mobility. As tumours invade the maxilla and infiltrate the maxillary sinus, patients will experience nasal congestion, sensory disturbances of the cheek, and other superimposed pain caused by infiltrate behaviour.
- Managing head and neck cancers primarily involves accurately staging the disease, with computed tomography scans or magnetic resonance imaging, and determining if surgical resection of the tumour is possible; early diagnosis is paramount to favourable outcome.

## POINTS DE REPÈRE DU RÉDACTEUR

- Les signes et les symptômes d'un carcinome maxillaire ressemblent à ceux des syndromes de douleurs faciales, en particulier la névralgie du trijumeau (NT). Il faut faire un examen à l'extérieur et à l'intérieur de la bouche, et prendre une anamnèse complète avant de diagnostiquer définitivement la NT et, dans le doute, il faut demander sans délai une biopsie pour exclure toute autre pathologie sous-jacente.
- Aux premiers stades, le carcinome spinocellulaire oral se présente par une douleur maxillaire localisée et une mobilité des dents. À mesure que la tumeur envahit le maxillaire et s'infiltré dans le sinus maxillaire, le patient éprouve de la congestion nasale, suivie de dérangements sensoriels à la joue et d'autres douleurs superposées causées par le comportement de l'infiltrat.
- La prise en charge des cancers à la tête et au cou comporte principalement d'établir l'avancement de la maladie au moyen d'études tomographiques ou de l'imagerie par résonance magnétique et de déterminer s'il est possible de faire l'ablation chirurgicale de la tumeur; le diagnostic précoce est donc d'une importance primordiale pour des résultats favorables.