A rare case of gingival metastases from papillary thyroid carcinoma

Ibraz Siddique a,∗, Preetha Chengot c, John Frewer d, David Walker b

a Department of Oral and Maxillofacial Surgery, Surgery, Queen’s Medical Centre, Derby Road, Nottingham, NG7 2UH, UK
b Pinderfields General Hospital, Aberford Road, Wakefield, WF1 4DG, UK
c St James’s University Hospital, Beckett Street, Leeds, LS9 7TF, UK
d Pinderfields General Hospital, Aberfoord Road, Wakefield, WF1 4DG, UK

1. Introduction

Metastatic oral malignancy accounts for 1% of all oral cancers [1]. Soft tissue involvement is rare and accounts for <0.1% of all oral tumours with the attached gingiva being the commonest site involved [4]. Some tumours have a recognised pattern of spread to the mouth, however thyroid carcinoma metastasis to this area is rare [5]. We present the first reported case of a papillary thyroid carcinoma (PTC) with sarcomatoid transformation giving rise to gingival metastasis and indicating widely disseminated disease.

2. Case description

A 71 year old man with a history of PTC presented with an asymptomatic gingival swelling adjacent to his lower right lateral incisor. Subsequent biopsy of the lesion confirmed PTC metastasis with aggressive sarcomatoid features. We present a clinical photograph of the gingival swelling and the pathology images demonstrating both the papillary and sarcomatoid features of the gingival biopsy.

The prognosis of PTC is usually excellent but some histological variants of PTC behave more aggressively. The histology in our case demonstrated solid areas and sarcomatoid transformation and behaved far more aggressively than typical PTC. Sarcomatoid transformation in PTC has not been previously described and indicates a poor prognosis and the need for planning urgent palliation. These lesions can present a diagnostic challenge to both pathologists and clinicians in identifying the lesion as metastatic and locating the primary cancer.

This case demonstrates the need for vigilance amongst health professionals when presented with an oral soft tissue mass in patients with a known primary malignancy. This may be the first evidence of disseminated disease and emphasises a low threshold to biopsy oral soft tissue lesions in patients with a history of malignant disease.

© 2015 The Authors. Published by Elsevier Ltd. on behalf of Surgical Associates Ltd. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).
treatment with curative intent and initially made an uncomplicated recovery. Eight weeks after completion of treatment he attended his GMP to draw attention to a rapidly growing asymptomatic labial gingival swelling adjacent to his lower right lateral incisor (Fig. 2).

Intraoral examination revealed a 1.5 cm diameter firm, irregular and well defined pale pink gingival swelling extending interdentally and displacing the lower right lateral incisor and canine. An incisional biopsy demonstrated PTC with sarcomatoid transformation which was identical to his primary thyroid lesion (Fig. 3).

Further MDT discussion suggested palliative chemotherapy given the sarcomatoid transformation of the primary tumour and disseminated nature of the disease.

3. Discussion

PTC is the commonest thyroid malignancy. Metastases are usually to ipsilateral regional lymph nodes with distant metastases being rare and occurring in the lung followed by bone and other soft tissues. The prognosis is usually excellent with the carcinoma usually remaining confined to the thyroid [6,7]. Latest World Health Organisation International classification defines PTC by its ‘follicular cell differentiation and characteristic nuclear changes’. Some histological variants of PTC behave more aggressively than PTC with typical histology [8–11]. The histology in our case demonstrated solid areas and sarcomatoid transformation and behaved far more aggressively than typical PTC. Sarcomatoid transformation in PTC has not been previously described and indicates a poor prognosis and the need for planning urgent palliation.

The oral cavity is a rare site for metastatic disease and indicates disseminated disease. The jaw bones, particularly the premolar region of the mandible is the commonest site of metastatic deposits [2,5] with soft tissue deposits accounting for just 0.1% of all oral malignancies [2,3]. If soft tissue metastases occur they affect the attached gingiva in 54% of cases [4]. The usual primary sites for gingival metastases include the lung, liver, kidney and prostate for males and breast, female genital organs, kidneys and colorectum for females. The gingival metastatic deposits usually appear as hyperplastic lesions such as a pyogenic granuloma [4]. Although there have been reported cases of malignant thyroid metastases to the bony oral cavity [12,13] there is only one reported case of a thyroid (medullary) metastasis to the gingiva [1]. Gingival metastases from PTC has not previously been reported.

4. Conclusion

This case demonstrates the need for vigilance amongst health professionals when presented with an oral soft tissue mass in patients with a known primary malignancy. This may be the first evidence of disseminated disease [2] and is likely to indicate poor prognosis. Such a presentation can pose a diagnostic challenge to both clinicians and pathologists in identifying the lesion as metastatic and locating the primary cancer [14], and emphasises the need for a low threshold to biopsy oral soft tissue lesions in patients with a history of malignant disease. In this case, identifying distant metastases early was important as it provided an opportunity to plan appropriate palliative management.

Conflict of interest

We declare no conflicts of interest.

Funding

We declare no sources of funding.
Ethical approval

Not applicable.

Author contribution

Mr John Frewer – Study concept, design and final review.
Mr Ibraz Siddique – Literature search, drafting the articles and revision.
Mr David Walker – Critical revision of drafts.
Dr Preetha Chengot – Acquisition of illustrations and final review.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Guarantor

Mr Ibraz Siddique.

References

[1] A. Piatelli, M. Fioroni, C. Rubini, Gingival metastasis from medullary thyroid carcinoma: case report, J. Periodontol. 71 (January (1)) (2000) 112–116.
[2] R.L. Van Der Waal, J. Buter, I. Van Der Waal, Oral metastases: report of 24 cases, Br. J. Oral Maxillofac. Surg. 41 (1) (2003) 3–6.
[3] M. Greenberg, M. Glick, Burket’s Oral Medicine, 11th ed., Lippincott, Philadelphia, PA, 2008, pp. 174.
[4] A. Hirshberg, A. Shnайдerman-Shapiro, I. Kaplan, R. Berger, Metastatic tumours to the oral cavity: pathogenesis and analysis of 673 cases, Oral Oncol. 44 (August (8)) (2008) 743–752.
[5] A. Hirschberg, P. Leibovich, A. Buchner, Metastatic tumours to the jawbones: analysis of 390 cases, J. Oral Path Med. 23 (September (8)) (1994 Sep) 337–341.
[6] J. Hole, A.E. Stenwig, G. Kullman, M. Lindegaard, Distant metastases in papillary thyroid cancer: a review of 91 patients, Cancer 61 (1988) 1–6.
[7] L.B. Woolner, M.L. Lennson, O.L. Beals, R.M. Black, F.R. Keating, Occult papillary carcinoma of thyroid gland: a study of 140 cases observed in a 30 year period, J. Clin. Endocrinol. Metab. 20 (1960) 89–105.
[8] L.A. Akslen, V.A. Livolsi, Prognostic significance of histologic grading compared with sub-classification of papillary thyroid carcinoma, Cancer 88 (2000) 1902.
[9] H.L. Evans, Columnar cell carcinoma of the thyroid: a report of 2 cases of an aggressive variant of thyroid carcinoma, Am. J. Clin. Path 85 (1986) 77–80.
[10] M.F. Herrera, L.D. Hay, P.S. Wu, et al., Hurttle cell (oxyphilic) papillary cell thyroid carcinoma: a variant with more aggressive biologic behaviour, World J. Surg. 16 (1992) 669–674.
[11] J. Rosai, G. Zampi, M.L. Carcangui, Papillary carcinoma of thyroid: a discussion of it’s several morphological expressions with particular emphasis on the follicular variant, Am. J. Surg. Path. 7 (1983) 809–817.
[12] N. Nikitakis, A. Palmeris, A. Sklavounou, Metastatic papillary thyroid carcinoma to maxilla: case report and literature review, Head Neck Pathol. 6 (June (2)) (2012) 216–223.
[13] S.B. Ismail, M.T. Abraham, Z.B. Zaini, H.B. Yaacob, R.R. Zain, Metastatic follicular thyroid carcinoma to the mandible: a case report, Cases J. 2 (April) (2009) 6533.
[14] B. Whitaker, K. Robinson, K. Hewan-Lowe, S. Budnick, Thyroid metastasis to the oral soft tissues: case report of a diagnostic dilemma, J. Oral Max. Surg. 51 (5) (1993) 588–593.