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Complete remission in very advanced oral cancer by docetaxel, cisplatin, 5-fluorouracil based induction chemotherapy followed by concurrent chemoradiation

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induction chemotherapy;
TPF chemothrapy;
very advanced head and neck cancer

Strategies for treating oral squamous cell carcinoma (OSCC) combine surgery, radiotherapy and chemotherapy.[1] However, the 5-year survival rate of OSCC is approximately 30—60% and still remains discouraging in recent years.[2] In patients with very advanced OSCC, challenges continue to frustrate treatment. The National Comprehensive Cancer Network practice guidelines currently suggest that induction chemotherapy for very advanced OSCC may be considered. In regard to induction chemotherapy, investigations have indicated the addition of a taxane (docetaxel/paclitaxel) to cisplatin and fluorouracil (TPF), which is more efficacious than the traditional cisplatin and fluorouracil (PF).[3]

A 61-year-old Taiwanese male presented a painful growing mass over the right side of the mouth, with a history of heavy alcohol, tobacco and betel quid use. A whitish exophytic fungating tumor about 60 × 50 mm at the right maxillary alveolar ridge and hard palate with ill-defined margin, the lesion extending to the soft palate and retromandibular area, moreover, a palpable mass is found at the right side of the neck (Fig. 1A). An MRI scan revealed an enhancing signal of 4.5 cm in maximal diameter with extensive involvement and a node finding (Fig. 1B). Whole-body bone scan, abdominal ultrasound were taken to rule out any distant metastasis. An incision biopsy which was performed earlier revealed malignancy (Fig. 1C). Finally, it was classified as T4bN1M0 Stage IVB OSCC.

The treatment options were proposed, induction chemotherapy followed by surgery was selected. Under informed consent, the TPF induction chemotherapy was initiated, with docetaxel 100 mg/m^2 per day on day 1, cisplatin 100 mg/m^2 per day on day 1, and fluorouracil 1500 mg/m^2 per day on days 1—4 were administered as planned. Grade I nausea and vomiting were observed. The clinical outcome was compelling with the disappearance of the previous noted node, thus the patient requested concurrent chemo-radiation (CCRT) only (Fig. 1D). During the 22-month follow-up period, a white patch lesion over the right lower gingiva was found (Fig. 1E and F); an excisional biopsy was performed revealing verrucous leukoplakia (Fig. 1G). There was no further lesion discovered while we closely followed and documented the results for 50 months (Fig. 1H and I).

The goals of induction chemotherapy are to reduce the tumor volume (down-staging) and to eradicate systemic microscopic metastases. As a regimen for induction chemotherapy, the classic two trials demonstrated the superiority of TPF induction over PF, which further resulted in FDA approval of docetaxel for induction chemotherapy, but it was unable to address the comparison of currently existing standards of care.[4] In two other large scale studies, treatment with TPF resulted in a median overall survival of 4 months, with the result superior in the TPF group, along with better organ preservation of the larynx.[5] However, all these studies cannot definitely indicate the benefit from TPF induction chemotherapy before CCRT, and caution is warranted. Accumulation of cases and review of the long-term prognosis are required for further assessment.

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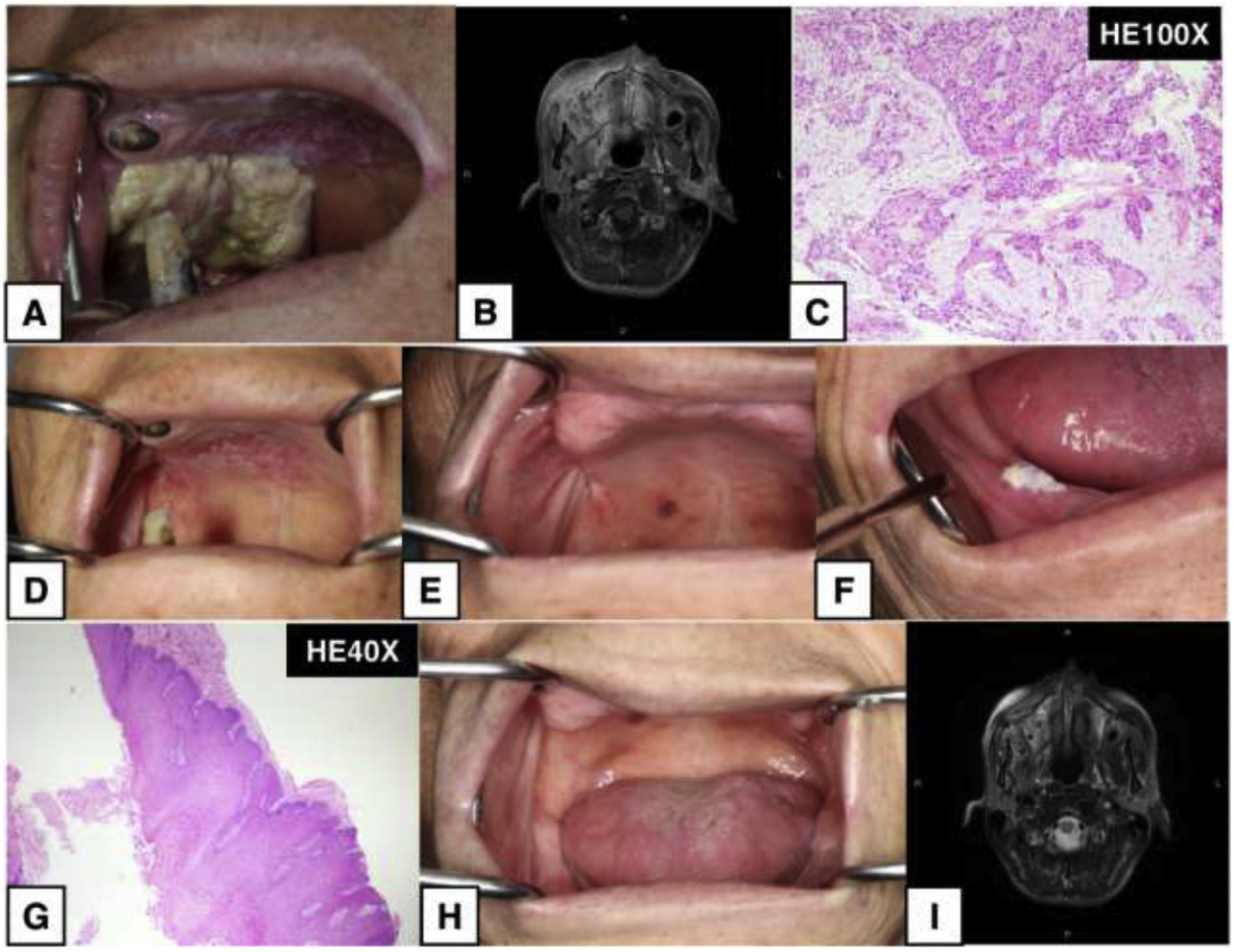

Figure 1 (A) A firm swelling over the right cheek and stiffness and palpable mass over the neck was noted; the clinical examination revealed a whitish exophytic fungating tumor about 60 × 50 mm tumor at the right maxillary alveolar ridge and hard palate with ill-defined margin, the reddish and whitish plaque lesion extended from the tumor lesion to the soft palate and retromandibular area. (B) An enhancing signal of 4.5 cm in maximal diameter involving the right buccogingival space with posterior extension to masticator space posteriorly and invasion of the sphenopalatine fissure medially, invasion of the inferior wall of right maxillary sinus and hard palate superiorly, the finding of an enhancing nodule about 1.9 cm in the right level IIa of the neck. (C) Biopsy was performed revealing moderately differentiated tumor stromal invasion with solid and sheet-like tumor growth pattern, intercellular bridging focal dyskeratosis. (D) The clinical appearance status post induction chemotherapy revealed tumor regression. (E) Remission of previously noted tumor at palate. (F) A white patch lesion over right lower gingiva was found. (G) A histologic picture of proliferative verrucous leukoplakia characterized by acanthosis, hyperplastic squamous epithelium and focal pushing-like border, in favor of verrucous hyperplasia with mild dysplasia. (H) Intra-oral revealing the complete remission of tumor. (I) MRI follow-up with sinus inflammation and remission of the tumor for 50 months.

Conflicts of interest

The authors have no conflicts of interest relevant to this article.

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