
Durable Response to Chemotherapy for Recurrent Squamous Cell Carcinoma of the Cheek With Perineural Spread

Squamous cell carcinoma (SCC) in the periocular region can invade the orbit and intracranial cavity. One route of such spread, known as perineural spread (PNS), involves the contiguous spread of the tumor along the potential space between a nerve and its sheath. Perineural spread is associated with a high rate of recurrence, metastasis, and poor prognosis. The usual treatment for SCC with PNS is surgical resection followed by wide-field radiation therapy (RT).

We herein report a case of recurrent SCC with PNS treated with intravenous chemotherapy as a single modality with complete and sustained resolution of clinical and radiographic signs of PNS.

Report of a Case. A 70-year-old man had undergone excision of an invasive SCC (<1 cm wide) of the right cheek with positive excision margins 2 years before the referral. He developed right facial paralysis and lower eyelid ectropion a few weeks after excision. He underwent surgical repair of paralytic ectropion presumed to be due to idiopathic Bell’s palsy. The ectropion recurred after 8 months. Magnetic resonance imaging revealed an infraorbital right cheek mass that extended into the masticator space. The patient was referred to the M. D. Anderson Cancer Center for further management. The histologic sections of the original lesion on the cheek were reviewed at our institution and the diagnosis of SCC was confirmed (Figure 1). No perineural invasion was noted on the representative section of the original outside specimen.

Extraocular motility examination suggested a right abduction deficit and right esotropia (Figure 2A). Ocular adnexal examination results were significant for right eyebrow ptosis and hypesthesia of the right cheek and cornea. The patient had 11 mm of lagophthalmos, right lower eyelid paralytic ectropion, and an associated corneal ulcer. The patient denied significant pain or paresthesias.

A diagnosis of recurrent SCC of the cheek with extensive PNS and resultant multiple cranial neuropathies was made. Repeated magnetic resonance imaging again revealed a right premaxillary soft tissue tumor with extensive PNS along the right infraorbital nerve with extension to the right pterygopallatine fossa, the right cavernous sinus, and the right Meckel cave (Figure 3A and C).

Given the extensive skull base spread, it was felt that the lesion was not surgically resectable. Because the patient had no significant pain, RT was deferred. Intravenous chemotherapy consisting of 736 mg of carboplatin and 380 mg of paclitaxel was administered every 3 weeks for 4 cycles. After 2 cycles of chemotherapy, the patient experienced significant resolution of clinical (Figure 2B) and radiographic (Figure 3B and D) signs of PNS. Three years after completion of chemotherapy, the patient remains without clinical or radiographic evidence of disease recurrence.

Comment. We report here an impressive durable response to systemic cytotoxic chemotherapy delivered as single-modality treatment for advanced recurrent SCC with PNS. Chemotherapy for head and neck SCC is usually delivered as induction neoadjuvant chemotherapy before surgery or RT or concurrently with RT. We were unable to find any other example in the literature of the use of systemic chemotherapy as single-modality treatment for SCC with PNS.

Perineural spread occurs in 2.5% to 14% of head and neck SCCs and 1% to 8% of periocular SCCs. Of those cases, only 30% to 40% are symptomatic. Patients who develop symptoms may have facial paresthesia, facial paralysis, exposure keratopathy, facial pain, diplopia, and hearing loss. Perineural spread is often missed until advanced stages; thus, the prognosis for patients with PNS is often poor. McNab et al reported that of 21 patients with PNS of SCC in the periorbital region, 13 (62%) had died of disease by the 3-year follow-up.

Figure 1. Histologic section of the lesion on the cheek shows squamous cell carcinoma (hematoxylin-eosin, original magnification ×10).
In our patient, the likely route of PNS was along the infraorbital nerve to the right pterygopalatine fossa, right cavernous sinus, and right Meckel cave. It is important for oculoplastic and orbital surgeons to consider PNS as a possible underlying mechanism for facial nerve palsy and other cranial neuropathies so that the diagnosis of PNS is not delayed. Our case underscores the importance of individualizing the treatment plan for patients with PNS; treatment options may include surgery, RT, or systemic chemotherapy followed by close observation.

Correspondence: Dr Esmaeli, Section of Ophthalmology, Department of Head and Neck Surgery, The University of Texas M. D. Anderson Cancer Center, 1515 Holcombe Blvd, Unit 1445, Houston, TX 77030 (besmaeli@mdanderson.org).

Financial Disclosure: None reported.