Adenoid cystic carcinoma of parotid gland with antegrade and retrograde perineural spread, treated with radiotherapy : A case report

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Abstract

Adenoid cystic carcinoma (ACC) of the parotid salivary gland is a rare malignant tumor, which if diagnosed late has poor prognosis, but gets worse if perineural spread (PNS) is present. Treatment options for advanced cases are palliation by surgery, radiation and chemotherapy. There is good response to radiotherapy for patients presenting with intracranial spread, in cases with perineural spread, it is not possible to render radiation therapy to the full course of the nerve. Recurrences due to antegrade perineural spread to the origin of the nerve and retrograde extensions, where radiation is not carried out, is difficult to treat.

Key words: *Adenoid cystic carcinoma, Parotid, Perineural spread*

Introduction

Adenoid cystic carcinoma of the parotid salivary gland is a slow growing tumor characterized by wide local infiltration, perineural spread and propensity for local recurrences.[1] Malignant tumors of the salivary gland make up only 0.4 % of all cancers, and 3 -4 % of all head & neck cancers.[2] ACC constitutes about 10-15 % of all parotid gland malignancies[3] and has three histological patterns: viz: tubular, cribriform and solid. The solid pattern is associated with increased local recurrences and higher mortality.

A case of solid pattern ACC with intracranial extension, in a 42 year old female is presented. She responded well to radiotherapy for the parotid as well as the intracranial extension of the tumor. Despite good initial response she developed metastasis, first in the eyelid, orbit and maxilla of the same side and subsequently in the pons. She died one year after diagnosis.

Case report

A forty-two year old female was referred to Department of Radiotherapy, Rural Medical College, Loni as a case of carcinoma parotid gland (left) with intracranial extension.

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The patient presented with pain and gradually increasing swelling of the left parotid region of one year duration. She also complained of forgetfulness, a solitary episode of convulsion and inability to close the left eye for the last one year.

On clinical examination she had a hard, fixed, non-tender swelling measuring 7x6 cm over left parotid region. She also had facial nerve palsy (left), lateral rectus palsy (left) and conjunctival congestion (left). Motor, sensory systems and vision in both eyes were within normal limits. Routine hemogram, serum biochemistry, ultrasonogram of the abdomen and pelvis were essentially within normal limits.

A CT scan of the parotid region showed a swelling measuring 6.6 x 4.1cm, with intense enhancement. No area of necrosis or bone destruction was present (fig 1).

Figure 1 : Axial CECT scan at parotid level shows enlarged left parotid gland.

A CT scan of the brain showed a left, temporo-parietal lesion extending from the base of the skull adjacent to the dorsum sellae, with extensive edema surrounding the lesion.

Histopathology of the parotid swelling revealed adenoid cystic carcinoma of the solid variety.

External radiotherapy was delivered to the region covering the parotid swelling and the intracranial extension by anterior and posterior wedged paired fields by Telecobalt Unit to a total dose of 6600c Gy in 33 fractions (field reduction was carried out after 25 fractions), with good response. The patient had timely full radiation therapy and was on regular follow-up.

Two months following radiation therapy she still had residual swelling (2 x 1.5cm) but CT scan of the brain showed complete resolution of metastatic deposits.

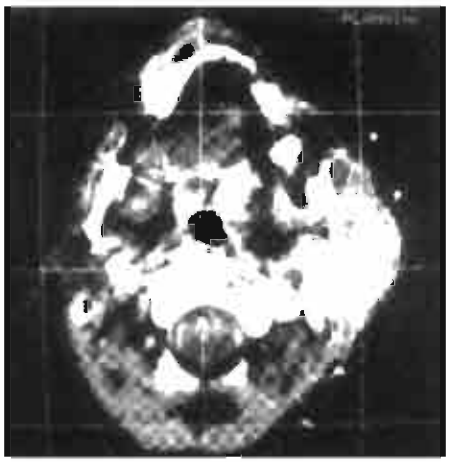

Figure 2: Axial CECT scan of brain shows large left temporo-parietal, intensely enhancing lesion extending from base of skull adjacent to dorsum sellae, with surrounding extensive oedema.

Five months following radiation therapy she developed multiple small swellings over the left eyelid. Fine needle aspiration cytology of these swellings was positive for malignant deposits. Palliative treatment with a combination of injection Ifosfamide, injection Cisplatin and injection Etoposide was undertaken. After completion of two cycles of this chemotherapy, she developed maxillary swelling of the left side. CT scan of this swelling and the orbit showed a heterogeneously enhancing mass lesion in the left orbit, and extension involving the whole of the left maxilla (fig 3).

Figure 3 : CT Scan of orbit and maxillary region shows heterogeneously enhancing mass lesion in the left orbit and involving whole of the left maxillary sinus with destruction of roof, medial-wall and anterolateral wall of left maxilla.

Response to chemotherapy being poor, she was treated with radiation of the left maxilla and left eye to which she responded partially.

Two months following above radiotherapy she reported with weakness in both lower limbs and inability to walk. CT scan of the brain now showed a centrally necrosed peripherally enhancing lesion (2.6 x 2.4cm), with perifocal edema in the region of the pons (fig 4).

Figure 4 : CT Scan of brain shows 2.6 x 2.04 cm peripherally enhancing lesion with central area of necrosis and perifocal edema in region of pons.

She was then subjected to palliative radiation of the pons. She responded poorly to this treatment and died after one month of recurrence of the tumor in the brain.