EDITORIAL

Carcinoma of the External Auditory Canal

Malignant neoplasm of the external auditory canal (EAC), the middle and inner ear are rare. Squamous cell carcinoma (SCC) is the most common neoplasm of these sites, followed by basal cell carcinoma (BCC), adenoid cystic carcinoma (ACC), ceruminous adenocarcinoma and middle ear adenocarcinoma.

The EAC is a curved tube, approximately 25 mm in length in adults[1], leading from the pinna to the tympanic membrane. The framework of the outer third of the canal is cartilage and the inner two-thirds is formed by tympanic part of the temporal bone .The canal is lined by skin, including keratinised squamous epithelium, hair, sebaceous and ceruminous glands. Anterior to the EAC is the parotid gland, the zygomatic process of the temporal bone, and the temporomandibular joint (TMJ). The lymphatic drainage of the EAC is to the superficial parotid, mastoid and cervical lymph nodes. The facial nerve (Cranial Nerve VII) is closely related to the middle ear and inner ear.

This anatomically complex region generates complicated three-dimensional specimens that can be a challenge for macroscopic and microscopic pathologic assessment. A universally accepted staging classification for these malignancies is still to be established.

The facial nerve then enters the 'Z' shaped facial canal[2] running laterally above the vestibule of the internal ear until it reaches the medial wall of the middle ear. After passing through the labyrinthine portion, the facial nerve changes direction (the first genu). Here sensory and parasympathetic fibres form the geniculate ganglion. The tympanic segment extends from the geniculate ganglion to the horizontal semicircular canal. The nerve lies above and posterior to the oval window where the facial canal wall can be very thin or dehiscent with the middle ear mucosa

Chronic discharge, bleeding, otalgia and hearing loss, with or without facial palsy are common presenting symptoms of malignancies affecting the EAC and temporal bone. The differential diagnoses may include BCC& adenoid cystic carcinoma.The most critical differential diagnoses are benign entities such as pseudoepitheliomatous hyperplasia, cholesterol granuloma, cholesteatoma and middle ear corpuscles.

Once the tissue diagnosis is established, high resolution computed tomography (HRCT) of the petrous temporal bone and contrast enhanced magnetic resonance imaging (MRI) are useful modalities to assess the extent of disease for surgical planning[3].

HRCT with slices 1 mm or less in thickness is the most sensitive modality for the detection of erosion of the temporal bone. This is important in surgical planning for cases that require a temporal bone resection or exposure of the facial nerve[2]. MRI is the best modality for defining the extent of soft tissue involvement. Loss of signal on T1 weighted images (T1WI) and contrast enhancement are typical findings[4].

Increased signal along the facial nerve may also be observed. MRI may help distinguish malignancy from benign processes, with mastoiditis, middle ear effusions and cholesteatomas typically showing hyperintensity.

Surgery remains the main form of therapy for cancers of the EAC. The complex anatomical relationships make the en bloc removal of many cancers difficult. Whilst there is limited data to support the role in (inoperable) cases where definitive radiotherapy is being used[4].

Radiotherapy is commonly used as a post-operative adjuvant treatment for indications such as advanced primary tumor stage (T3/T4), 4close or involved tumor margins, perineural invasion, and lymph node metastases. There is no comparative data to support the routine use of adjuvant chemotherapy; however, this is used in some units to intensify adjuvant radiotherapy.

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