Neurofibromatosis type 2 (NF2): diagnosis and management.

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Neurofibromatosis type 2 (NF2) is an autosomal dominant inherited tumor predisposition syndrome caused by mutations in the NF2 gene on chromosome 22. Affected individuals develop schwannomas typically involving both vestibular nerves leading to hearing loss and eventual deafness. Rehabilitation with brainstem implants and in some cases cochlear implants is improving this outcome. Schwannomas also occur on other cranial nerves, on spinal nerve roots and peripheral nerves, and intracutaneously as plaques. Cranial and spinal meningiomas and spinal ependymomas are other common tumors. Fifty to sixty percent of patients represent de novo mutations and as many as 33% of these are mosaic for the underlying disease causing mutation. Truncating mutations (nonsense, frameshift insertions/deletions) are the most frequent germline events and cause the most severe disease, whilst single and multiple exon deletions are common and are usually associated with milder NF2. Neurological deficits are a major feature of the condition and neurologists have a pivotal role in assigning symptoms to lesions and in managing neuropathies. NF2 represents a difficult management problem with most patients facing substantial morbidity and reduced life expectancy. Surgery remains the focus of current management although watchful waiting and occasionally radiation treatment have a role. We are seeing the advent of tailored drug therapies aimed at the genetic level and these are likely to provide huge improvements for this devastating, life-limiting condition.

KEYWORDS: NF2; brainstem implant; cochlear implant; meningioma; mononeuropathy; mosaic; schwannoma

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