Cranial teratoma

Teratomas of the cranial vault are divided into histopathological subtypes and grouped by prognoses: mature (good prognosis), mixed/malignant and immature teratomas (intermediate prognosis). This schema also includes non-teratomatous tumors.

Lagman et al., sought to elucidate histologically dependent predictors of survival and further clarify the classification system of intracranial teratomas.

We performed a systematic analysis of the published literature to identify studies describing patients with intracranial teratomas diagnosed with magnetic resonance imaging (MRI) and presenting definite information on histologies, therapies, and outcomes at a minimum follow-up of 2 years. Disease-free (DFS) and overall survival (OS) were evaluated.

A total of 18 articles comprised of 134 patients were included. On univariate analysis, male sex and gross-total resection (GTR) were associated with high mean DFS ($p = 0.0362$ and $p < 0.0001$, respectively). On multivariate analysis, mature teratomas located in the pineal, and those having undergone subtotal resection (STR) demonstrated high mean OS ($p = 0.0023$ and $p = 0.0044$, respectively). Mature and mixed/malignant suprasellar teratomas had equally higher mean OS versus immature suprasellar teratomas ($p < 0.0001$). Mature and immature teratomas treated with adjuvant therapy had significantly higher mean OS compared to those managed with surgery alone ($p = 0.0421$ and $p = 0.0423$, respectively). Males with immature teratomas had the highest mean OS ($p < 0.0001$). Immature teratomas managed with surgery alone had higher mean DFS, but lower mean OS, compared to those treated with adjuvant therapy ($p = 0.0176$ and $p = 0.0423$, respectively).

Our data highlight the divergent nature of the different histopathological subtypes of teratomas, and suggest that survival outcomes are multifactorial. Specifically, male sex, pineal, suprasellar, GTR, and STR were dependent predictors of OS, while histopathology was an independent predictor of OS [1)].

1)
Lagman C, Bui TT, Voth BL, Chung LK, Seo DJ, Duong C, Libowitz MR, Walker NE, Nagasawa DT, Yang I. Teratomas of the cranial vault: a systematic analysis of clinical outcomes stratified by histopathological subtypes. Acta Neurochir (Wien). 2017 Jan 14. doi: 10.1007/s00701-016-3064-1. [Epub ahead of print] PubMed PMID: 28091817.