Cerebellar metastases associated obstructive hydrocephalus

There is no consensus concerning the management of adult posterior fossa metastases-associated obstructive hydrocephalus patients, especially regarding surgical procedures.

Literature review to assess the surgical strategy in the management of metastatic brain tumor patients.

Literature search conducted on PubMed in November 2017 to identify all studies concerning brain metastases and obstructive hydrocephalus in the English language.

All studies between December 1953 and November 2017, except case reports and paediatric studies, which were about posterior fossa metastasis-associated obstructive hydrocephalus in adult patients.

Eligible studies were classified by level of evidence.Roux et al., assessed epidemiology, clinical and imaging findings, neurosurgical management and prognosis of posterior fossa metastasis-associated obstructive hydrocephalus adult patients. They suggest some practical considerations and a management decision-tree on the behalf of the Neurooncology Club of the French Society of Neurosurgery with evidence-based analysis.

Direct surgical resection could be considered for asymptomatic obstructive hydrocephalus patients and endoscopic third ventriculostomy seems to be a reasonable procedure for symptomatic obstructive hydrocephalus patients. Ventriculoperitoneal or atrial shunt seems to be a valid alternative when patients have a history of central nervous system infection or ventricular hemorrhage, leptomeningeal carcinomatosis, or unfavorable anatomy to perform an endoscopic third ventriculostomy.

No formal recommendations can be made due to the low level of scientific evidence.

The Neuro-oncology Club of the French Society of Neurosurgery suggests a prospective assessment of these neurosurgical procedures in order to compare their respective safeties and efficacies [1].

Care should be taken when treating with radiosurgery patients posterior fossa metastases and signs of compressed CSF pathways. Exceptionally, an acute radiation induced edema could result in a block of the CSF pathways, necessitating a surgical intervention. Prophylactic shunt insertion or hospitalization the night following the treatment should be considered [2].

1)
Roux A, Botella C, Still M, Zanello M, Dhermain F, Metellus P, Pallud J. Posterior fossa metastasis-associated obstructive hydrocephalus in adult patients: literature review and practical considerations from the Neuro-Oncology Club of the French Society of Neurosurgery. World Neurosurg. 2018 Jun 20. pii: S1878-8750(18)31300-7. doi: 10.1016/j.wneu.2018.06.084. [Epub ahead of print] Review. PubMed PMID: 29935321.
2)
Wolff R, Karlsson B, Dettmann E, Böttcher HD, Seifert V. Pertreatment radiation induced oedema causing acute hydrocephalus after radiosurgery for multiple cerebellar metastases. Acta Neurochir (Wien). 2003 Aug;145(8):691-6; discussion 696. PubMed PMID: 14520550.