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Background

A schwannoma is a benign tumour in the peripheral nerve sheaths and thought to be originated from Schwann cells. Excision of schwannoma frequently associated with transient or permanent neurological damages.

Purpose

To evaluate the neurologic deficits after surgical enucleation of schwannoma, we performed a retrospective review of 99 patients with surgically treated schwannoma or schwannomatosis over a 14-year period at the single University Hospital.

Methods

Between March 2001 and September 2014, 99 patients underwent surgical enucleation for schwannomas, 11 of which had two or more histopathologically confirmed schwannomas. Each operation was performed by a single microsurgeon under loupe magnification. The post-operative neurological deficits were graded as minor, major, and transient. Transient deficit was defined as showing fully resolution of neurologic deficit within 6 months. Mean follow up period was 16.3 (6 - 249) months. For development of neurological deficits, multiple logistic regression analysis on age, sex, status (single/multiple lesions), number of tumours, size (maximum diameter of the tumour) and location (trunk/upper extremity /lower extremity) was performed.

Results

For development of permanent major neurological deficit, univariate analysis revealed significant difference on size and status. In multivariate analysis only status remained as a significant factor. ($p < 0.05$) After the enucleation of schwannomatosis, neurologic deficit developed as major, minor, and transient in 18%, 27%, and 9%, respectively. In contrast, for a single schwannoma, neurologic deficit developed as major, minor, and transient in 5%, 6%, and 16%, respectively.

Conclusions

Despite an enucleation with microsurgical dissection under loupe magnification, about half of the schwannomatosis patients had postoperative permanent neurologic deficit. The risk benefit ratio should be considered before surgery and surgical excision should be reserved only for symptomatic lesions.