

Benign peripheral nerve sheath tumor surgery

The goal for surgical treatment is total to gross total excision of the tumor with neural preservation ¹⁾.

Benign tumors respond well to marginal excision. There was a significantly increased risk of postoperative neurologic deficits in patients who had undergone a previous [biopsy](#), and thus tertiary referral without biopsy is recommended when a [peripheral nerve sheath tumor](#) is suspected ²⁾.

Accurate tumor localization, ideal patient positioning, and placement of a longitudinal incision permit adequate exposure. Prior to tumor resection, normal nerve should be identified proximally and distally and controlled with vessel loops. This allows functional fascicles streaming around the tumor in the pseudocapsule to be visualized during resection. A fascicle-free window is identified on the tumor surface through visual inspection and intraoperative neurophysiology monitoring if desired. The pseudocapsule layers are divided with a sharp instrument until a smooth and shiny true capsule layer is found. This plane should have minimal resistance and is developed circumferentially until the tumor can be enucleated in toto. At the poles of the tumor, a single nonfunctional nerve fascicle that courses into the tumor is typically found. If there is >1 fascicle running into the tumor, further pseudocapsule layers should be undermined to sweep fascicles off the true capsule surface. The entering-exiting fascicle can be tested for function and is cut sharply. The specimen should be sent to pathology for permanent sectioning. The sides of the pseudocapsule are spread in opposite directions to evaluate for residual tumor, and any remaining tumor is removed if it can be done safely. Meticulous hemostasis is achieved, and the surgical site is closed in anatomical layers ³⁾.

[Fluorescein](#) was demonstrated to be a feasible, safe, and helpful intraoperative adjunct to better identify and distinguish PNSTs from intact functional nerves, with a possible impact on [tumor resection](#), particularly in diffuse [neurofibromas](#) ⁴⁾.

Intraoperative neurophysiological monitoring for benign peripheral nerve sheath tumor surgery

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1)

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