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**Background:** Schwannomas are benign nerve sheath tumors that can arise in all ages. Over 90% of schwannomas are solitary lesions. Pain is the most common presenting symptom, which radiates when touched (Tinel's sign). The most common origin of these tumors is major peripheral nerves. On MRI, schwannomas have been described as exhibiting a split fat sign and target sign (a hyperintense rim with a central area of low signal intensity). These tumors are surgically excised and rarely recur.

**Questions/Purposes:** The purpose of this study is to describe the surgical procedure for removing schwannomas and report the clinical and radiological presentations as well as outcomes in our group of 21 patients.

**Patients and Methods:** From 2007-2015 we retrospectively reviewed 21 patients' charts who underwent surgery for a schwannoma. For tumors arising from a major nerve, the nerve was isolated intraoperatively both proximal and distal to the schwannoma. The individual nerve fascicles were subsequently identified along their path of travel through the epineurium. An incision was made through the epineurium on the opposite side of the sheath through an area devoid of nerve fascicles. The schwannomas were gently enucleated from the nerve sheath while preserving the nerve fascicles. Clinical presentation, location of tumor, nerve of origin, MRI characteristics, post-operative outcomes, and complications were recorded. All patients were followed up for a minimum of 3 months.

**Results:** Mean follow up ranged from 3 to 91 months (average: 28 mos). The average age at the time of surgery was 53-years (range: 10-86 years). Eighteen tumors occurred in the lower extremity. The schwannomas were intermuscular (n=16); intramuscular (n=1), and subcutaneous (n=4). Six tumors were characterized as ancient schwannomas. The most common nerve origin was the peroneal nerve (n=4). There were 5 cases that were not associated with a major peripheral nerve, in which a nerve could not be identified intraoperatively and were presumed to have arisen from a minor sensory nerve. Seventeen (81%) patients presented with pre-operative pain, which lasted from 2 weeks to 60 months (average: 16.8 mos). There were twelve patients with a Tinel's sign. A classic target sign was observed in only 2 patients and split fat signs were observed in all deep tumors arising from major peripheral nerves. MRI demonstrated tumors that were intermediate signal on T1 and primarily high signal on T2 with admixed low signal areas. The mass enhanced homogeneously following contrast administration in 17 of 20 MRIs. On five MRIs, the nerve was identified entering and exiting the mass. All patients were pain free at first follow up within 2 weeks from surgery and regained normal function in their respective extremities. There were no instances of local recurrence. Currently, all patients are alive. There was one case of a postoperative posterior interosseous nerve palsy that resolved. There were no other complications.

**Conclusions:** Schwannomas are benign tumors that cause pain if left untreated. Pre-operative MRI can be highly suggestive of a schwannoma if there is a characteristic split fat or target sign and if the nerve of origin can be visualized entering and exiting the mass. In this report however, the classic split target sign was absent from most cases. All of the schwannomas in this report were primarily high signal on T2 reflecting the myxoid areas (Antoni B) of the tumor admixed with low signal areas (Antoni A) reflecting the more cellular areas. Schwannomas can be safely removed via surgical excision after isolating the nerve and its fascicles. Pain is routinely eradicated and function restored. There are few complications and in this series there were no local recurrences.