

Plantar Fibromatosis: Surgical Approach for a Tumor with a Tissue-Specific Propensity for Recurrence

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Significance / Hypothesis / Techniques

In multiple discussions I encountered many MSTs surgeons, (including mentors and current chair-persons at major academic centers), that often avoid surgically treating plantar fibromatosis (PF) patients due to uncertainty regarding proper surgical treatment and fear of wound healing problems, unacceptable recurrence rates (up to 100%), pain or deformity. Some relegate treatment to other caregivers; one stated that PF is not a cancer and therefore does not need an MSTs surgeon. During a 20+ year stint in academia, noting that many patients have multifocal nodules upon presentation, and that many have bilateral involvement, I developed the hypothesis that these “recurrences” are actually de novo tumors arising within the retained portions of plantar fascia. Therefore, my approach evolved to a wide or marginal resection of recognized nodule(s) along with a conservative ellipse of adherent overlying skin plus a near complete plantar fasciectomy to remove the tissue with the high propensity for recurrence. Contrary to the warnings of many, I never encountered a patient who developed flatfoot deformity from such an approach in the initial 45+ patients treated during my academic years. The goal of this study was to review a subsequent consecutive series of patients to test the hypothesis that this surgical treatment would relieve pain, allow good foot function, avoid future deformity, and not be plagued by recurrence or subsequent de novo tumor development.

Innovation:

This information is important to provide a framework for treatment and to eliminate over-resection or under-resection and avoidance and/or dread of these patients by MSTs members.

Approach:

Following IRB approval, all surgically treated PF cases 2015 - 2024 were reviewed. Updated telephone follow-up by the author was achieved in 17 patients with 21 feet (6 patients lost to follow-up). Follow-up ranged 10-104 months, mean 35.5; all but one ≥ 13 months.

Results:

Despite microscopically positive margins in 9 and equivocal final margins in 3, there have been no recurrences (one patient had partial persistence due to a planned debulking of very extensive disease – patient so satisfied that she returned for similar surgery on contralateral foot). No arches collapsed. Gait abnormalities (4), minor toe deformities (4) and/or distal sensory changes (4) were reported by 9 patients but all but 2 of those had significant pre-existing compromising conditions (not mutually exclusive): neuropathy (4), prior surgeries (3), extensive trauma (2), unresectable disease (1). All patients with normal preoperative sensation rated their feet as improved by the surgery. Of the 17 patients, 15 unequivocally stated their foot was better after surgery. Most patients were extremely pleased, offering unsolicited comments such as “You gave me my life back” (failed bilateral surgery elsewhere with bilateral recurrences).

Discussion/Impact:

Limited resection of all identifiable disease plus sub-total fasciectomy provides excellent results, eliminating the tissue with the propensity for recurrence. Although pre-existing conditions such as neuropathy, prior surgeries, prior trauma and extensive disease may partially compromise results, patients derive significant benefit from surgical resection as described, providing rewarding experiences for the patient and surgeon alike.