Medical Management of Pigmented Villonodular Synovitis of the Right Ankle and Foot

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Introduction: Pigmented Villonodular Synovitis (PVNS) is a rare, benign condition involving the overgrowth of synovial tissue, typically affecting the knee but also other joints like the hip and ankle. It causes joint pain, swelling, and reduced mobility, and can be either localized or diffuse. While the exact cause is unclear, it may involve inflammatory or neoplastic processes. Diagnosis relies on clinical symptoms, imaging (MRI), and histology. Though non-malignant, PVNS can be aggressive and cause joint damage if untreated. Treatment usually involves surgical resection or synovectomy, sometimes with radiotherapy to prevent recurrence.

Case Presentation: A 66-year-old female with fibromyalgia and osteoporosis presented with right ankle pain and swelling. Radiographs in September 2023 showed severe degenerative changes in the tibiotalar and first MTP joints, with joint effusion and varus alignment. MRI in October 2023 confirmed advanced osteoarthritis and synovial thickening. After temporary relief from a cortisone injection, a core biopsy in July 2024 revealed Pigmented Villonodular Synovitis (PVNS). With no bacterial growth, the patient declined surgery and was referred to hematology/oncology for treatment with pexidartinib, a CSF-1 inhibitor.

Discussion: The management of Pigmented Villonodular Synovitis (PVNS) has evolved from relying solely on surgery to incorporating therapies that reduce recurrence and manage challenging cases. While surgical resection, either via arthroscopy or open synovectomy, remains the primary treatment, diffuse PVNS poses a higher risk of recurrence and joint damage. Recent advancements have introduced CSF1R inhibitors like pexidartinib, which target the disease's molecular drivers, offering a non-surgical option for diffuse or refractory cases. Other therapies, such as radiation synovectomy, have also shown promise but carry potential risks. Ultimately, treatment should be individualized based on disease severity and patient health.

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