Pigmented villonodular synovitis of the knee: a large retrospective analysis of 214 cases at a UK tertiary referral centre

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Introduction: Pigmented villonodular synovitis (PVNS) is a rare, locally aggressive and potentially recurrent disease of the synovium. The Royal National Orthopaedic Hospital runs a tertiary referral service for bone and soft tissue tumours and we present the largest single-centre experience of knee PVNS in the literature. Our aim was to evaluate our centre’s experience in the management of knee PVNS.

Methods: Retrospective data collection of consecutive cases of knee PVNS from 2002-2015.

Results: 214 cases of knee PVNS were identified, with histological diagnosis, which represented 53.4% of all PVNS at our centre. 100 were localised PVNS (LPVNS), 114 diffuse PVNS (DPVNS) and 2 malignant villonodular synovitis, a rare entity. 188 were primary cases and 26 had already been treated at another institution. Knee PVNS was more likely to occur in females with a mean age of 39. The most common location of LPVNS was Hoffa’s pad. Following surgery, 47.6% had recurrence with DPVNS as opposed to 8.6% with LPVNS. In LPVNS, there was no significant difference in recurrence between open and arthroscopic synovectomy (8.7% vs 9.1%, P > 0.05). However, in DPVNS, there was a statistically significant higher risk of recurrence with arthroscopic compared to open synovectomy (83.3% vs 45.2%, P = 0.027). Sixteen patients went on to have TKR. The surgical complication rate was 9.7% and 62% were noted to be pain free with full range of motion at follow-up.

Conclusion: PVNS is a rare, aggressive soft tissue tumour that affects the knee in more than half of cases. It can be difficult to treat. We found no difference in local recurrence rates between open and arthroscopic treatment of LPVNS but significantly increased rates of recurrence for DPVNS following arthroscopic treatment. We would therefore recommend open synovectomy for DPVNS.

Keywords : Pigmented villonodular synovitis, Tenosynovial giant cell tumour, Knee, Synovectomy

Authors

Kavi Patel 1, William Aston 2.

1. Bone Tumour Unit, Royal National Orthopaedic Hospital, London, UNITED KINGDOM
2. Bone Tumour Unit, Royal National Orthopaedic Hospital, Lo, UNITED KINGDOM

Authors (raw format)

Patel Kavi - email : drkav184@gmail.com Institution : Royal National Orthopaedic Hospital Department : Bone Tumour Unit City : London Country : UNITED KINGDOM Speaker : Yes
Aston William - email : willaston1@gmail.com Institution : Royal National Orthopaedic Hospital Department : Bone Tumour Unit City : Lo Country : UNITED KINGDOM Speaker : No