

Outcome of 17 pigmented villonodular synovitis (PVNS) of the Knee at 6 years mean follow-up

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Abstract

Between January 1950 and December 2000, 16 patients were identified from Scottish Bone Tumour Registry with 17 histologically proven pigmented villonodular synovitis (PVNS) of the knee. The mean follow-up was 6 years (range, 1–14 years). A knee swelling of chronic duration with dull ache was the common presenting symptom. The mean duration of symptoms prior to presentation was 25 months (1–108 months), however it was much less (mean, 7 months) in four patients with a history of trauma. The mean age was 33 years (range, 16–58 years) with a slight male predominance. The lesion was predominantly anterior in nine patients, posterior in four, anterolateral in two, and medial and lateral in one each. Three patients (four knees) had localised disease and 13 diffuse. Anteroposterior and lateral radiographs of the knee revealed normal findings in 11 patients, features of gonarthrosis in four and a large suprapatellar loose body in one patient (both knees). Open (incisional-eight, excisional-eight) biopsy was carried out in all and all were histologically confirmed as PVNS. Removal of a localised synovial mass or loose body with surrounding partial synovectomy (four) was carried out for the localised variety, whilst open partial (three) or total (radical) synovectomy (10) was performed in all cases of diffuse PVNS. Three of seventeen knees had a recurrence, noted at 4, 6 and 8 years postoperatively (0% — localised, 23% — diffuse variety). A total (radical) synovectomy should be considered in diffuse PVNS in order to obtain optimal outcome.

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Keywords: Pigmented villonodular synovitis; Knee joint; Synovectomy; Recurrence

1. Introduction

Pigmented villonodular synovitis (PVNS) is a locally aggressive synovial proliferative disorder of unknown aetiology affecting the linings of joints, tendon sheaths and bursae. The incidence of PVNS is 1.8 patients per million population, equally affecting both genders in third and fourth decade of life. The most commonly occurring site is the knee, which can be affected by localized or diffuse form [1–6].

Localised PVNS shows a very low recurrence rate [4,6,7]. However, diffuse intra-articular PVNS of the knee in the

young people remains a difficult problem. There are controversies in the literature about surgical management of knee PVNS, whether an arthroscopic [8–10] or a traditional open synovectomy [2,4,11,12] is better. We report our experience with open synovectomy in the management of knee PVNS at mean follow-up of 6 years and to investigate the factors affecting recurrence.

2. Materials and methods

Between January 1950 and December 2000, 16 patients (17 knees) with histologically proven PVNS of the knee were accrued from Scottish Bone Tumour Registry (a prospectively collected database). Both localised and diffuse forms were included in this series. Cases with a follow-up of less than 1 year were excluded. All registry case notes, radiographs and histological sections were available for review. The registry notes and radiographs were reviewed by the first author (HS) and histological sections

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Table 1
Details of 16 cases of PVNS of the knee

No.	Age/Sex/ Side/Site	Hx of trauma	Clinical features	X-ray	CT/MRI imaging	Biopsy	Surgery	Follow-up	Recurrence
1	29/M/R/ Posterior	No	Mildly painful lump for 42 months	Normal	–	Open incisional	Total synovectomy	3 years	–
2*	31/M/L/ Posterior	No	Swelling for 96 months, painful for 2 months	Normal	Heterogeneous mass (5×7 cm) in the superolateral part of popliteal fossa	Open incisional	Exploration and excision of popliteal mass	5 years	–
3	31/F/R/ Posterior	No	Mildly painful lump for 36 months	Normal	–	Open incisional	Total synovectomy	6 years	Local, 6 years later, treated with re-excision, died of unrelated cause 2 years later (status asthmaticus)
4	29/M/L/Posterior	No	Swelling for 23 months, painful for 1 month	Normal	–	Open incisional	Cyst excision followed by total synovectomy 2 weeks later	8 years	–
5	18/M/L/ Anterior	Yes	Painful swollen knee 2 months	Soft tissue shadow	–	Open incisional	Total synovectomy	11.5 years	–
6	41/M/R/ Anterior	No	Painful swollen knee 48 months	Normal	–	Aspiration cytology	Total synovectomy	5 years	–
7	20/M/L/ Anterolat Infrapat.	No	Painful swollen for 12 months	Normal	–	Open Excisional	Total synovectomy	9 years	–
8	56/F/R/ Anterolat.	No	Painful swollen for 96 months	Early osteo-arthritis	–	Open incisional	Exploratory Total synovectomy	5.5 years	–
9	17/F/L/ Anterior	No	Painful swollen for 4 months	Normal	–	Open incisional	Exploration and partial synovectomy	8 years	Local, 8 years later, re-synovectomy
10	30/F/R/ Anterior	No	Painful swollen for 108 months	Osteo-chondritis dessicans, loose bodies	–	Open Excisional	Patellectomy and partial synovectomy	4 years	Local, 3 years 10 months later, under observation as patient denied for further operation
11*	58/F/B/ Anterior	No	Anterior knee pain 9 months	Calcified loose bodies in supra-patellar bursa	–	Open Excisional for both knees	Removal of loose body and trimming of both patellar osteophytes	1 year	Stiff knee, treated with manipulation under anaesthesia (MUA)
12*	37/M/R/ Lateral	Yes	Pain and swelling 12 months	Normal	–	Open Excisional	Removal of loose body	1 year	–
13	16/M/L/ Anterior	Yes	Pain and swelling for 9 months	Normal	–	Open incisional	Total Synovectomy	4.5 years	–
14	33/M/R/ Anterior	Yes	Pain and swelling for 6 months	Osteo-arthritis	–	Open Excisional	Total synovectomy	14 years	Persistent pain due to osteoarthritis
15	42/F/R/Medial	No	Pain and swelling for 3 months	Early osteo-arthritis	Marked synovial hyper-trophy, anterior bony erosion	Open Excisional	Partial synovectomy	6 years	Persistent osteoarthritis treated with total knee replacement
16	40/M/R/ Anterior	No	Pain and swelling-6 months, Previous history of patellectomy and supracondylar fracture	Osteo-arthritis	Soft tissue extends to upper tibia, medial erosion	Open Excisional	Total synovectomy	5 years	Persistent pain due to osteoarthritis

NB: M — Male, F — Female, R — Right, L — Left, B — Bilateral, Hx — History, * — Localized.

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