

# Pigmented Villonodular Synovitis (PVNS) of the Knee mimicking Septic Arthritis in a Paediatric Patient: A Case Report

Indra F<sup>1</sup>, MD, Anuar-Ramdhan IM<sup>1</sup>, MMed Orth, Vick-Duin E<sup>2</sup>, MD, Awang-Ojep DN<sup>3</sup>, MD

<sup>1</sup>Department of Orthopaedics, Universiti Malaysia Sarawak, Kota Samarahan, Malaysia

<sup>2</sup>Department of Orthopaedics, Universiti Malaysia Sabah, Kota Kinabalu, Malaysia

<sup>3</sup>Department of Pathology, Universiti Malaysia Sarawak, Kota Samarahan, Malaysia



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## ABSTRACT

Pigmented villonodular synovitis (PVNS) is a benign but rare proliferative disorder of the synovium. It commonly occurs in the adult population and usually presents as a monoarticular disease. There are two types of PVNS, namely the localised and diffused type. The disease is often misdiagnosed due to its rarity especially in paediatric patients. Knee involvement in PVNS is the commonest form in children although other joints such as hip, foot, ankle, hip, sacroiliac joint and concurrent multiple joint involvements have also been reported. PVNS in paediatric patients is often misdiagnosed as septic arthritis, juvenile rheumatoid arthritis and bone sarcoma, and the diagnosis is usually often made late due to its vague presentation. The majority of PVNS cases are managed by surgery either via open or arthroscopic synovectomy except in a few paediatric patients as described in the literature. This case report of PVNS is of a knee in 11-year-old boy who was initially treated as septic arthritis. The synovium appearance mimicked the features of PVNS during a knee arthrotomy washout, and histopathological examination confirmed the diagnosis. The knee symptoms had significantly improved without additional surgery, and good functional knee motion was achieved, with no sign of recurrence, after two years of follow-up.

### Keywords:

*pigmented villonodular synovitis, paediatric knee, septic arthritis*

## INTRODUCTION

Pigmented villonodular synovitis (PVNS) is a benign lesion of the synovial tissues. However, it has the potential to become locally aggressive and cause significant morbidities.

It is rarely considered in paediatric patient until multimodality of radiological investigations and tissue studies proved otherwise. The classical presentation of this condition is monoarticular chronic joint effusion but multiple joints involvements have been also reported<sup>1</sup>. Thus, it could mimic other conditions with similar initial presentation, such as juvenile rheumatoid arthritis or septic arthritis<sup>1-4</sup>.

Although it is a benign lesion, the recommended management of PVNS in paediatric age group patients is open or arthroscopic synovectomy<sup>4</sup>. However, surgery can lead to complications such as secondary osteoarthritis, joint instability, joint stiffness and risk of growth plate damage in skeletally immature patients. Furthermore, radiotherapy is also not advisable for paediatric patients to avoid malignant transformation and risk of growth plate injury<sup>4</sup>. We report a paediatric case of knee PVNS, diagnosed and managed as septic arthritis before it turned out to be a PVNS that recovered well without synovectomy.

## CASE REPORT

An 11-year-old boy presented with right knee swelling of three months duration. It was not preceded by trauma. The patient did not have fever or any other joint pain and swelling. He was initially able to walk unaided until one month after the onset before he required crutches to ambulate. He had received symptomatic treatment on seeking medical attention. A month later, he had complained of lethargy and palpitation, and the parent noticed that he appeared pale. He was brought to the tertiary centre and was admitted for further investigation.

On examination, the boy was unable to bear weight on the right leg. He had low-grade fever. He was tachycardic, with