Pigmented Villonodular Synovitis Of The Hip
Evolution Of Nine Cases

Henrique Cabrita
Henrique Gurgel

Universidade de São Paulo
IOT/HCFMUSP
São Paulo - Brasil
Henrique A. Berwanger de A. Cabrita
Universidade de São Paulo
(University of São Paulo – Medical School)
Brazil

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Introduction

• Pigmented Villonodular Synovitis (PVNS) is a rare condition that is more common in the knee and affects the hip in less than 10% of the cases.
• It is a proliferative disorder arising principally from synovium but occasionally from bursae or tendon sheaths.
• Macroscopically it is characterized of brownish villous and nodular masses arising on the surface of synovial tissue.
• The lesions may be aggressive and destroy the adjacent bone (diffuse disease) or relatively benign, assuming a solitary nodular pattern (focal disease) which is more rare.
• It is best seen in MRI and shows low intensity in both T1 and T2 (see slide 7), because of the hemosiderin in the tissue.
• Surgical resection of the lesional tissue remains the treatment of choice for PVNS.
Material and methods

- Nine patients, six with diffuse and three with focal disease treated in our institution in the last seven years
- Five males and four females
- Mean age: 25.4 years
- Mean duration of symptoms:
  - Focal disease: 3.4 years
  - Diffuse disease: 2.3 years
- All confirmed in MRIs
- Functional evaluation by Harris Hip Score
• The three cases with focal disease were easily accessed and treated with hip arthroscopy.
• Three classic portals described by Byrd at all were done in all patients under general anesthesia.
• The three focal PVNS were localized in the peripheral compartment, just under the femoral head and adjacent to the medial synovial fold.
• All patients were pain free and showed excellent results in more than two years of follow up: HHS preop was 67.8 points and at last follow up to 97.5 points (mean 2.9 years).

Isolated PVNS (also named Giant Cell Tumor of the Tendon Sheath) in the peripheral compartment view through the central compartment.
The six cases of diffuse PVNS were very challenging.

The technique for hip arthroscopy was the same as in the focal disease but one or more portals were done to access the posterior aspect of the hip.

There were no complications related to the hip arthroscopies, such as traction sores, neuroapraxis or excessive bleeding.

Diffuse PVNS in the central and peripheral compartments with typical synovial blood stained color.
• One patient underwent two hip arthroscopies but an open procedure was done to access posterior and central foci – this patient is still with pain and waiting for THR.

• One patient underwent one hip arthroscopy, had partial relieve of pain but choose to go to THR and is pain free 18 months after the surgery;

• Three patients had partial relieve of pain and ROM after one hip arthroscopy and are satisfied after a mean follow up of 3.2 years. Those patients evolved the mean HHS from 45.7 preop to 78.9 at last follow up.

A - Diffuse PVNS – note the location of the villae at the posterior aspect of the hip in a location which cannot be accessed with arthroscopy; B - Diffuse PVNS with erosion of the acetabular medial wall; C- Arthroscopy of the peripheral compartment - Communication of the psoas bursae with the peripheral compartment in a patient with diffuse PVNS.
33 years old male with diffuse disease

Six months after arthroscopy the disease evolved with an aggressive pattern, destroying cartilage and bone and leading to a THR
24 years old female patient – After four arthroscopic surgeries, she had a THR. Still complaining of groin pain, an arthroscopy was done and pathology confirmed recurrence on the psoas tendon. The patient was operated through an inguino-femoral approach that showed islands of PVNS inside the psoas muscle.
PVNS remains as a mysterious disease.
The genesis is unknown.
The diagnostic is very easy with MRI.
The only advocated treatment is the mechanical removal of the tissue.
Recurrences are frequent in the diffuse disease but rare in the focal or nodular form.
The hip diffuse disease has a high failure rate partly because of peri-articular acetabular and femoral head destruction and to the difficulty to access the posterior part of the joint, specially through the arthroscopic approach.
Our focal cases had very good results.
The diffuse cases had bad evolution and patients expectations were not fulfilled, which is a worrisome result for a disease that is often found in a young population.
Conclusion

- We recommend hip arthroscopy for focal PVNS
- The diffuse pattern of the disease shall be better treated with open sinovectomy to try to save the joint or a conservative treatment just to relieve the symptoms and wait for THR.
Bibliography

- Mankin, Henry – Pathophysiology of Orthopaedic Diseases – Chapter 7: Pigmented Villonodular Synovitis of joints, Bursae and tendon Sheaths pp. 47-52