

# 3D CONFORMAL RADIATION THERAPY FOR PIGMENTED VILLONODULAR SYNOVITIS: RADIOLOGICAL OUTCOMES FROM A SINGLE CENTRE RESPECTIVE STUDY

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## INTRODUCTION

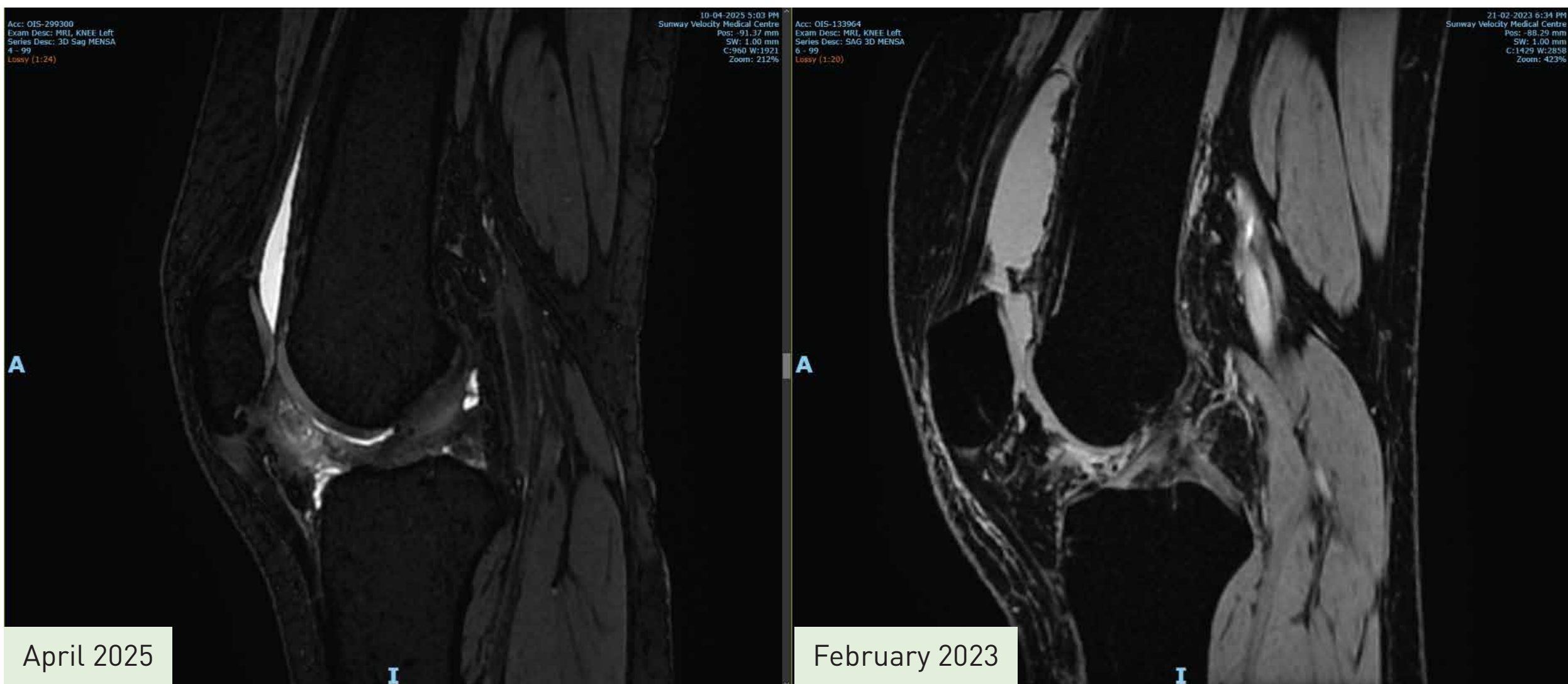
Pigmented Villonodular Synovitis (PVNS) is a rare, proliferative synovial disorder characterized by high local recurrence rates following surgical resection. Radiation therapy (RT) has been used as an adjuvant modality to improve local control, especially in anatomically challenging or recurrent cases. This study aims to evaluate the clinical and radiologic outcomes of patients with PVNS treated with definitive RT using 3D conformal radiation therapy (3DCRT).

## METHODS

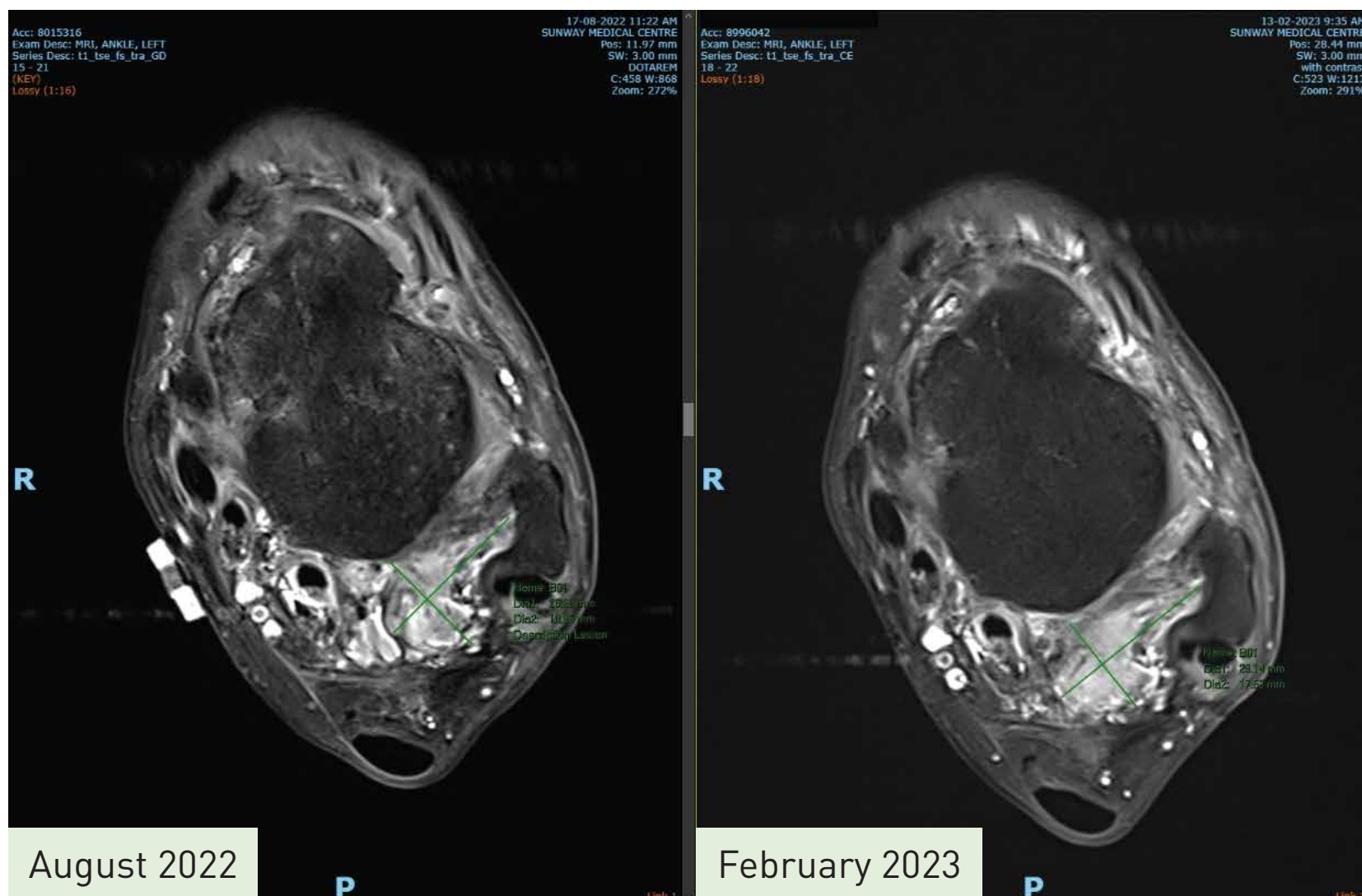
Case Series (n=2):					
Patient	Age/Sex	Site	Previous Surgery	Treatment Indication	RT
1	29/F	Left Knee	Subtotal Excision	Adjuvant	36Gy/18fx Boost 10Gy/5fx
2	26/M	Right Ankle	Yes (Recurrent)	Definitive	36Gy/18fx

Table 1: Summary of patient demographics and treatment parameters.

## RESULTS



Patient 1: MRI at 2 years showed marked reduction in synovial thickening with residual hypointense bands at medial patellar recess.



Patient 2: MRI at 6 months demonstrated stable, enhancing synovial lesions without progression.

## DISCUSSION

Our findings aligned with existing literature demonstrating that moderate-dose RT (36Gy) is highly effective for achieving local control in PVNS[1,2]. The key points from our study are:

### Efficacy in Different Settings

3DCRT was successful both as an adjuvant treatment following surgery and as a definitive modality for recurrent disease.

### Optimal Dosing

A dose of 36 Gy in 18 fractions appears effective, with a boost considered for residual disease. This provides a strong therapeutic effect while minimizing risks of long-term toxicity like joint stiffness or secondary malignancy.

### Tolerability

3DCRT is a well-tolerated treatment with minimal side effects, making it a viable option for patients where repeated surgery is undesirable or high-risk.

## CONCLUSION

3D Conformal Radiation Therapy is a safe and highly effective treatment for Pigmented Villonodular Synovitis. RT should be considered a standard component of the multidisciplinary management for PVNS, particularly in cases of incomplete resection or local recurrence.

## REFERENCES

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- Antonious A. Koutalos, Dimitrios Ragias, Emmanouel Rizniotopoulos, et al. 'Diffuse Pigmented Villonodular Synovitis Of The Knee Joint: 3 Year Follow-Up Of a Case Report'. Radiation oncology J. 2022; 40(4):270-275