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# The Use Of Radiosynovectomy Using Yttrium-90 As An Adjunct To Mechanical Synovectomy For Pigmented Villonodular Synovitis

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# Disclosures:

No financial disclosure or conflicts of interest with the presented material



# Introduction

Pigmented VilloNodular Synovitis (PVNS) or Giant Cell Tumour of the Tendon sheath (GCTT) is a rare disorder involving proliferation of the synovium in any joint, however the knee, hip and ankle joints are most commonly targeted.

The aim of this study is to assess the outcome of patients with PVNS of the knee managed by intra-articular injection of Yttrium-90 or radiosynovectomy (RS) alone, vs a combination of RS and arthroscopic/open debulking synovectomy.



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# Methods

A cohort of eight knees from six patients were included in this study, three knees in the combined arthroscopic synovectomy and radiosynovectomy group (RS), and five knees in the radiosynovectomy (RS) treatment alone group.

Patients from both groups were asked to complete Knee Injury and Osteoarthritis Outcome Score (KOOS) questionnaires. Their answers were collated and scores calculated using the designated specific equation.



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# Methods

For combined therapy, the time interval between arthroscopic synovectomy and radio-synovectomy was six weeks.

Yttrium-90 diluted with 0.9% NaCl to a volume of 2 ml was injected into the supra patellar pouch. This was followed by 20 mg triamcinolone hexacetonide in combination with 1 ml 2% lidocaine-HCl to avoid local skin reaction due to spill upon withdrawal of the syringe. The knee was cycled several times in order to evenly distribute the fluid throughout the joint. The patient was then advised bed rest and immobilisation of the knee for 72 hours post injection to reduce transport of particles through the lymphatics to the regional lymph nodes.

No patients included in our study underwent further repeated treatments.



# Results

- Our results demonstrate that although patients in the combined arthroscopic synovectomy and radiosynovectomy (RS) arm possess on average higher pain scores and symptoms than those who underwent radiosynovectomy (RS) alone, the combined therapy had higher scores in ADLs, Sport-Rec, QoL, and overall KOOS scores.



## KOOS scores following radiosynovectomy alone

	KOOS Pain	KOOS Symptoms	KOOS ADLs	KOOS Sports	KOOS QOL	Average KOOS
Patient 1 Knee 1	28	36	46	0	0	22
Patient 1 Knee 2	28	36	46	0	0	22
Patient 2	53	32	77	0	0	32.4
Patient 3	58	79	85	35	6	52.6
Patient 4	17	21	18	0	25	16.2
Mean value	37	41	54	7	6	29

## KOOS scores following combined arthroscopic & radiosynovectomy

	KOOS Pain	KOOS Symptoms	KOOS ADLs	KOOS Sports	KOOS QOL	Average KOOS
Patient 1 Knee 2	100	86	100	80	88	90.8
Patient 2	58	57	76	60	25	55.2
Mean Score	81	73	92	70	61	75





# Variables between Radiosynovectomy alone vs Arthroscopic followed by radiosynovectomy

	KOOS Pain	KOOS Symptoms	KOOS ADLs	KOOS Sports	KOOS QOL	Average KOOS
Patient 1 Knee 2	100	86	100	80	88	90.8
Patient 2	58	57	76	60	25	55.2
Mean Score	81	73	92	70	61	75



# Conclusion

- Neo-adjuvant arthroscopic mechanical debridement is a safe and quick procedure with minimal side effects, with improved overall KOOS scores.

