

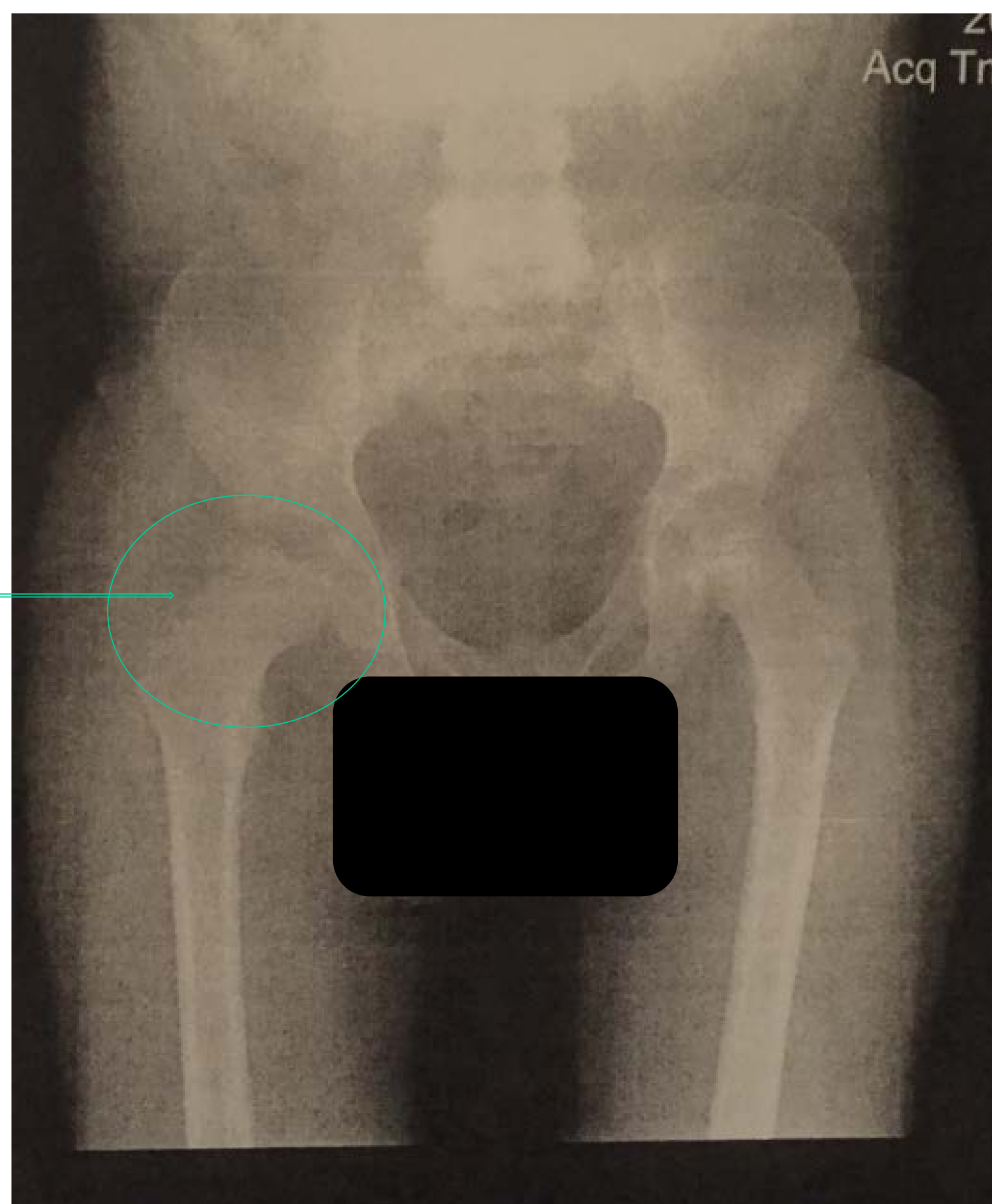


Implementation of Proprioceptive Neuromuscular Facilitation post mesenchymal stem cell procedure secondary to Legg-Calve-Perthes disease: A Case Report

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BACKGROUND:

Legg-Calve-Perthes is a common pediatric disease that is characterized by osteonecrosis of the femoral head.¹ Causing in changes to the femoral head, and resulting in pain and limitations in function.



PURPOSE:

The purpose of this case report is to determine if the PNF rolling technique can improve strength, balance, range of motion, lower extremity power, and gait speed in a male pediatric patient with Legg-Calve-Perthes disease post femoral core decompression with mesenchymal stem cell (MSC) injection

CASE DESCRIPTION:

The patient was an 8-year-old male who presented status post right femoral decompression with MSC procedure performed approximately two years ago and external fixation removal one year ago.

METHODS:



Initial phase of PNF rolling



Resistance phase of PNF rolling

RESULTS:

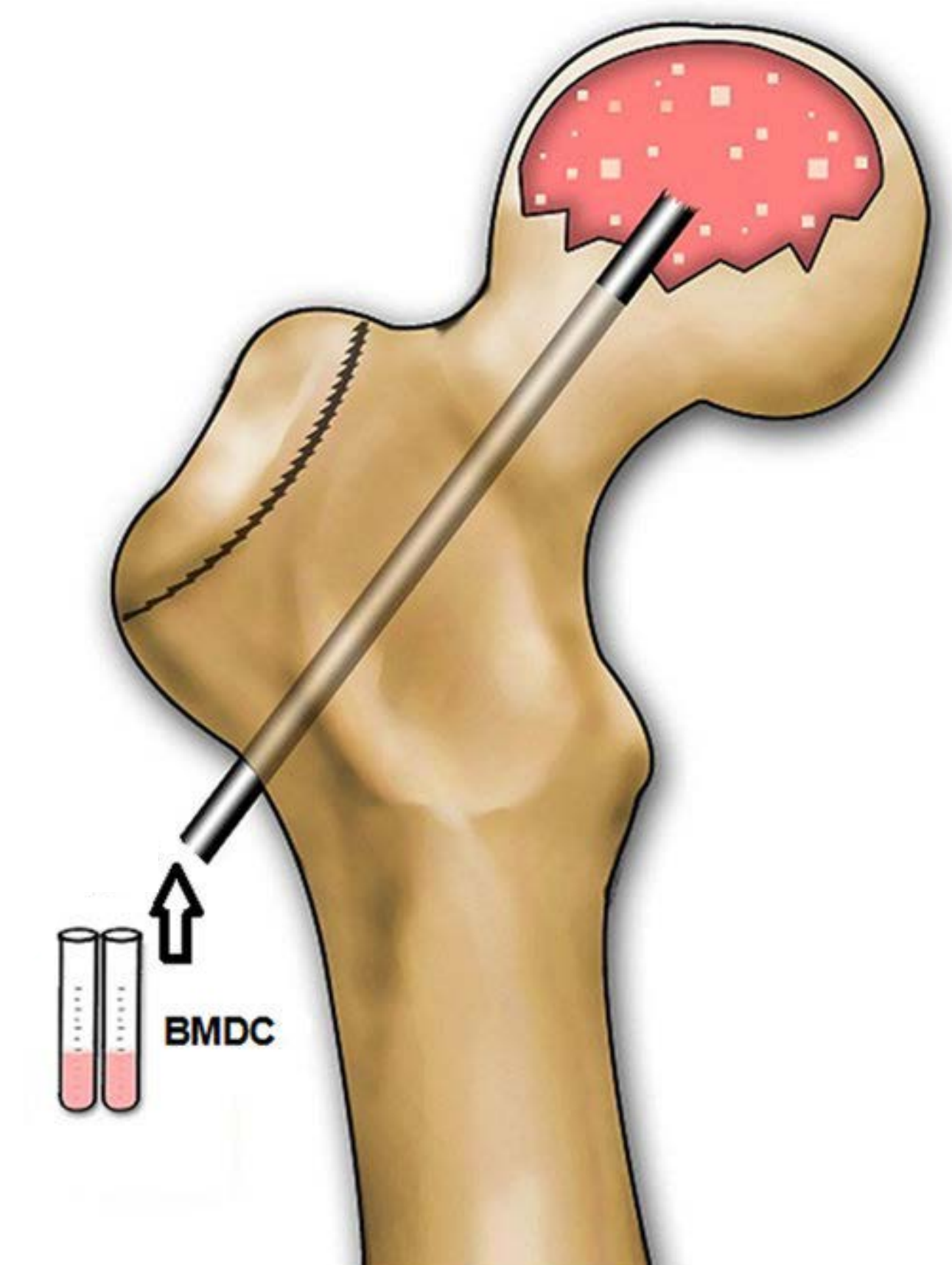
Outcome Measures	Pre		Post	
Pediatric QOL	42% Disability		37% Disability	
10 meter walk	8.5 seconds (1.18m/s)		7.2 seconds (1.39m/s) ± +	
	Right	Left	Right	Left
Romberg- eyes open	30sec	30sec	30sec	30sec
Romberg- eyes closed	7sec	26sec	30sec	30sec
Sharpened Romberg-eyes open	22sec	30sec	30sec	30sec
Sharpened Romberg-eyes closed	7sec	20sec	26sec	30sec
Single leg stance (stable surface)	28sec	30sec	30sec	30sec
Single leg stance (unstable surface)	5sec	18sec	30sec	30sec
Single leg single hop	4 in	10 in	15 in +	26 in +

± MCID met
+ MDC met

	PRE		POST	
Manual Strength Testing (out of 5)	Right	Left	Right	Left
Hip ABD	4-	4-	4+	4+
Hip Ext	3+	3+	4	4+
Hip ER	4-	4-	4+	5
Hip IR	4-	4+	4+	5

CONCLUSION:

PNF rolling is a low-level treatment, but still requires proper timing and stabilization to coordinate both extremities and the trunk to “reset” the body and prepare it for higher-level functional movements.²



BMDC= Bone marrow derived cells

CLINICAL RELEVANCE

The addition of PNF rolling to traditional physical therapy promoted basic proprioception, core engagement, and body awareness which is necessary to maintain strength and ROM gains. Once the patient was able to coordinate the extremities and the trunk, he reported less pain and ambulated with minimal compensations.

For References please SCAN

