

# Bilateral femoral neck fractures presenting as bilateral lower limb weakness

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## Background

A 32 year old male with past medical history of ESRD secondary to IgA nephropathy on peritoneal dialysis, hypertension, GERD, and Crohn’s Disease presented with bilateral lower limb weakness and muscle spasms after a fall from bed two weeks prior. There was no history of trauma or falls immediately preceding hospitalization, and therefore no hip imaging was pursued. Work-up revealed elevated CK and normal EMG/NCS study. He was diagnosed with rhabdomyolysis and discharged to rehabilitation (IPR).

## Diagnosis

When patient failed to progress, MRIs of bilateral lower limbs revealed bilateral femoral neck fractures. He was transferred to acute care and underwent bilateral posterior total hip arthroplasties.

## Objective Functional Data Comparison

	On initial admission.		Postoperative Day 6.	
	Right	Left	Right	Left
Hip Flexion	1/5.	1/5.	2/5.	2-/5.
Knee Flexion	2-/5.	2-/5.	3/5.	3/5.
Knee Extention	3+/5.	2-/5.	3-/5.	3-/5.
Ankle DF	3+/5.	3+/5.	4+/5.	4+/5.
Ankle PF	2+/5.	2+/5.	4+/5.	4+/5.
	Knee ROM at Admission		Knee ROM at Discharge	
	AROM	PROM	AROM	PROM
L knee flex	20°	65°	104°	
L knee ext			-13°	-10°
R knee flex	60°	95°	127°	
R knee ext			-9°	-6°

## Clinical Course

On initial admission to the Inpatient Rehabilitation Facility, patient was significantly limited with weightbearing tolerance which impacted functional transfers and ambulation efforts. Although initially very motivated, he walked short distances requiring moderate assist from two people and reported severe pain with activity. Following diagnosis and subsequent surgery, he was able to progress quickly to regain independence with functional household ambulation. By discharge, patient was independent with ambulating 50’ with wheeled walker and was able to climb 4 steps with moderate assist. He discharged home to his parent’s house with ongoing outpatient PT, wheeled walker for long distances, and follow up with endocrinology for bone health evaluation

## Discussion

The differential diagnosis for weakness is broad. We must consider this when a patient fails to make progress during IPR. We must also remember the metabolic effects of ESRD that leads to renal osteodystrophy. Hyperphosphatemia, hypocalcemia, secondary hyperparathyroidism, 25 (OH)D deficiency and decreased renal synthesis of 1,25 (OH)<sub>2</sub> D impairs bone remodeling and mineralization which affects microarchitecture of trabecular and cortical bone. (1) These factors result in 2-14 fold increase in fractures in CKD patients compared to the general population. (2)

## Conclusion

We as physiatrists are in a unique position to identify etiology of weakness and how this may prevent a safe discharge from IPR, we must also consider how co morbidities may cause a patient to be at increased risk of fractures.

## References

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2. Nickolas TL, McMahon DJ, Shane E. Relationship between Moderate to Severe Kidney Disease and Hip Fracture in the United States. J AmSocNephrol. 2006; 17:3223–3232..