



A Case of Lumbar Plexopathy From Prolonged Surgical Positioning in the Modified Lithotomy Position

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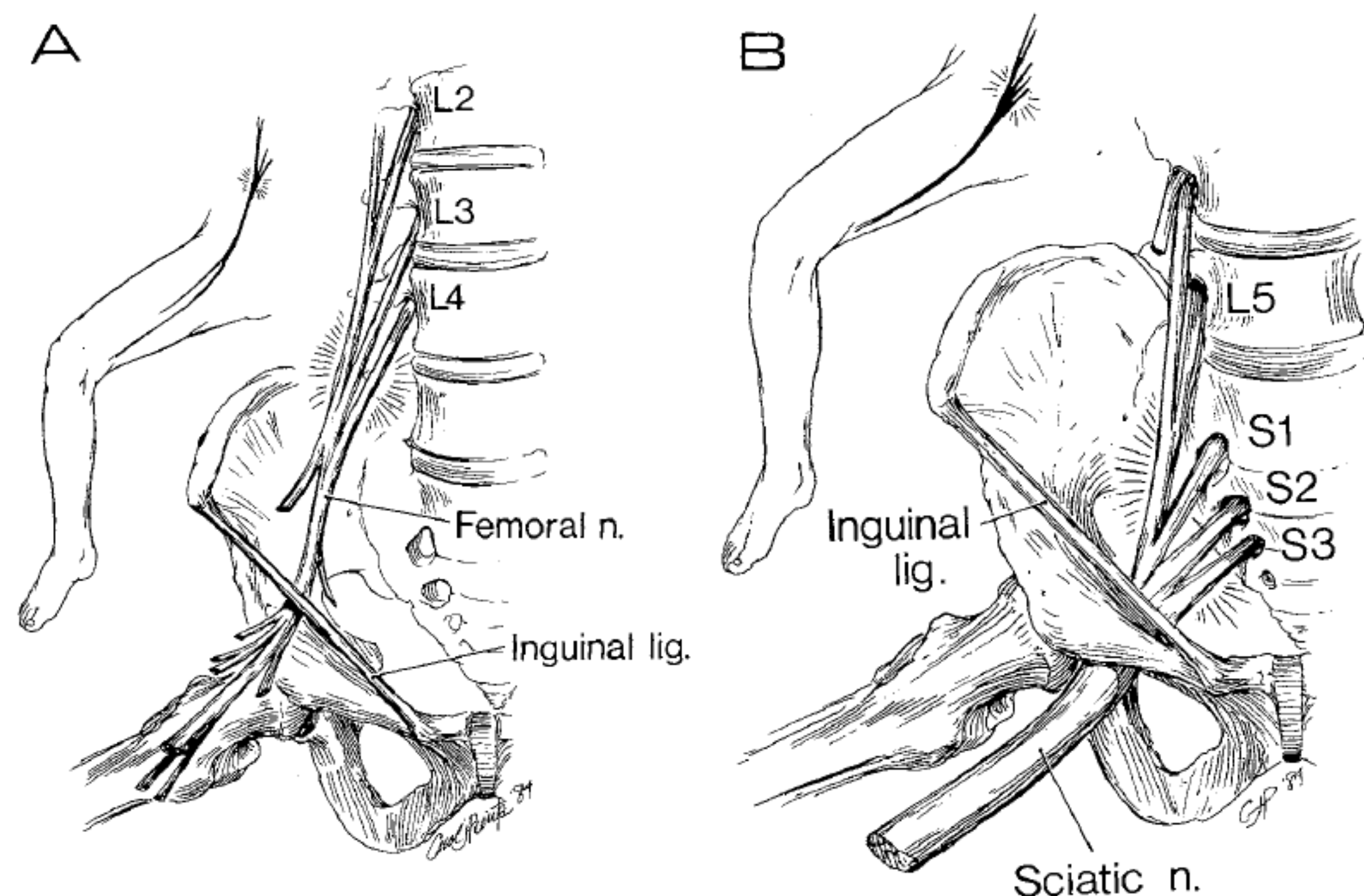
Case Description

- A 44 year-old male with a history of obesity, HTN, DM, HLD and urethral strictures presented to the electrodiagnostic clinic for evaluation of bilateral lower extremity pain, numbness and weakness which began immediately following a urethral reconstruction surgery 2 months prior.
- He was asymptomatic prior to the procedure and noted mild improvement since symptom onset.
- Clinical exam was notable for severe bilateral lower extremity weakness affecting all major myotomes and diffuse numbness worse distally (Table 1). The patient was wheelchair-bound and only able to ambulate short distances.
- EMG/NCS was consistent with severe acute/subacute bilateral lumbosacral plexopathy (Tables 2, 3 & 4).
- He continued to have severe, gradually improving symptoms 2 months after onset.

Table 1. Physical exam motor testing

	Right	Left
Hip Flexion	4+	4+
Knee Extension	4	4-
Ankle Dorsiflexion	1	1
Great Toe Extension	1	1
Ankle Plantarflexion	3	2

Figure 1. A: upper part of lumbar plexus can be stretched between its origin and exit beneath inguinal ligament by hyperabduction of hip; B: lower lumbosacral plexus is stretched between its origin and exit through greater sciatic foramen by hyperabduction.



Discussion

- Lumbosacral plexus injury is a rare, yet previously described, complication of prolonged intraoperative exaggerated lithotomy positioning.
- The proposed mechanism of neural injury includes ischemia from stretch or compression of the nerves (Figure 1).
 - Due to hyperabduction of the hip in the lithotomy position, the femoral nerve can be entrapped beneath the inguinal ligament, resulting in direct compressive ischemia or stretch injury to the proximal nerve roots.
 - In a similar process, hip flexion can damage the sciatic nerve as it exits the sciatic foramen.
- In this case, the patient underwent urethral reconstruction surgery in which he was in the exaggerated lithotomy position for an extended period of time (exact duration is unknown but the surgery totaled 12 hours).
- Despite appropriate preventative measures (adequate padding, no excessive flexion of the knees or hips), the patient sustained lumbosacral plexus injury.

Table 2. EMG Findings

Side	Muscle	Nerve	Root	Ins Act	Fibs	Psw	Amp	Poly	Recrt	Int Pat
Right	AntTibialis	Dp Br Peron	L4-5	Incr	3+	3+	Nml	Nml	Reduced	None
Right	Gastroc	Tibial	S1-2	Incr	2+	2+	Nml	Few	Reduced	25%
Right	VastusMed	Femoral	L2-4	Incr	Nml	1+	Incr	Nml	Nml	Nml
Right	AdductorLong	Obturator	L2-4	Incr	Nml	Nml	Nml	Many	Nml	Nml
Right	Iliopsoas	Femoral	L2-3	Nml	Nml	Nml	Incr	Nml	Nml	Nml
Right	Peroneus Long	Sup Br Peron	L5-S1	Incr	2+	2+	Nml	Nml	Reduced	None
Right	BicepsFemL	Sciatic	L5-S2	Incr	1+	1+	Nml	Few	Reduced	25%
Right	GluteusMed	SupGluteal	L5-S1	Nml	Nml	Nml	Nml	Few	Nml	Nml
Right	Lumbo Parasp Mid	Rami	L3-4	Nml	Nml	Nml				
Right	Lumbo Parasp Low	Rami	L5-S1	Nml	Nml	Nml				
Left	Lumbo Parasp Mid	Rami	L3-4	Nml	Nml	Nml				
Left	Lumbo Parasp Low	Rami	L5-S1	Nml	Nml	Nml				
Left	BicepsFemL	Sciatic	L5-S2	Incr	1+	1+	Incr	Few	Nml	Nml
Left	Peroneus Long	Sup Br Peron	L5-S1	Incr	1+	1+	Nml	Few	Reduced	50%
Left	Gastroc	Tibial	S1-2	Incr	Nml	2+	Incr	Nml	Nml	Nml
Left	VastusMed	Femoral	L2-4	Incr	Nml	Nml	Incr	Few	Nml	Nml
Left	AntTibialis	Dp Br Peron	L4-5	Incr	1+	1+	Nml	Few	Reduced	25%
Left	AdductorLong	Obturator	L2-4	Nml	Nml	Nml	Nml	Few	Nml	Nml
Left	Iliopsoas	Femoral	L2-3	Nml	Nml	Nml	Incr	Few	Nml	Nml
Left	GluteusMed	SupGluteal	L5-S1	Nml	Nml	Nml	Nml	Few	Nml	Nml

Conclusion

- Lumbosacral plexus injury is a rare possible complication of prolonged surgical positioning in the lithotomy position.
- Patients with neurologic deficits following surgery should be referred for electrodiagnostic work-up.

Table 3. NCS Findings (Sensory)

Stim Site	NR	Onset (ms)	Peak (ms)	O-P* Amp (µV)	Site 1	Site2	Delta-0 (ms)	Dist (cm)	Vel (m/s)
Left Saphenous Anti Sensory (Ant Med Mall)									
Leg		2.6	3.4	5.2	Leg	Ant Med Mall	2.6	10	38
Right Saphenous Anti Sensory (Ant Med Mall)									
Leg		2.8	3.5	4.2	Leg	Ant Med Mall	2.8	10	36
Left Sup Peroneal Anti Sensory (Ant Lat Mall)									
Leg	NR				Leg	Ant Lat Mall		14	
Left Sural Anti Sensory (Lat Mall)									
Calf	NR				Calf	Lat Mall		14	
Right Sural Anti Sensory (Lat Mall)									
Calf	NR				Calf	Lat Mall		14	

Table 4. NCS Findings (Motor)

Stim Site	NR	Onset (ms)	Neg Dur (ms)	O-P Amp (mV)	Neg Area (mVms)
Left Peroneal Motor (Ext Dig Brev)					
Ankle		5.9	4.69	0.1	0.42
B Fib		4.6	16.95	0.3	2.38
Right Peroneal Motor (Ext Dig Brev)					
Ankle		8.4	8.59	0.1	0.52
Left Tibial Motor (Abd Hall Brev)					
Ankle		9.5	5.23	0.1	0.29
Right Tibial Motor (Abd Hall Brev)					
Ankle		7.7	6.41	0.2	0.51