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Meralgia Paresthetica Diagnosed by Electrodiagnostic study: Rare case series

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INTRODUCTION

- Meralgia paresthetica (MP) is a neurological disorder caused by problem of the lateral femoral cutaneous nerve (LFCN) which transmits sensory information from skin of the thigh to the brain. The most common cause is pressure on the LFCN as it passes through the inguinal ligament. This can be caused by tight clothing, obesity, pregnancy, and other factors. Patients often complain of decreased sensation, pain, or tingling in the outer thigh, which can worsen after standing.
- While this condition is rare, it can cause significant discomfort and resulting serious damage and surgery, so early diagnosis through electrodiagnostic study is important.
- In this case series, we will describe two patients diagnosed with MP using electrodiagnostic study.

Case presentation

- CASE1:
  - A 41-year-old male with diabetes presented with progressive left buttock and thigh pain.
  - Despite undergoing manual therapy and medication for possibility of radiculopathy, his symptoms continued to worsen and he visited the rehabilitation department. The patient was obese, having gained 15 kg over the past 2 years. He did not usually wear tight clothing.
  - During the physical examination decreased sensation was noted in the left lateral thigh area during pinprick and light touch sensation tests.
  - To differentiate between radiculopathy and LFCN lesion, electrodiagnostic study was performed. It was found that the amplitude of the left LFCN was less than half of that on the right side. The patient was diagnosed with MP and weight loss was recommended.
  - He reported relief of pain through conservative management only.

- Case 2:
  - A 27-year-old female patient with no significant medical history reported experiencing numbness and tingling sensations in her right lateral thigh, as well as pain.
  - Her symptoms worsened and she visited rehabilitation department. The patient had a normal BMI and denied wearing tight clothing and possibility of pregnancy.
  - Sensation tests showed decreased sensation in the right lateral thigh.
  - An electrodiagnostic study were performed for differentiating herniation of disc and an LFCN lesion, and the amplitude of the right LFCN was found to be less than half that of the left side.
  - The patient was diagnosed with MP and she received conservative treatment such as NSAIDs and physical therapy resulting in symptom improvement.

Table 1. *Sensory NCS (CASE1)*

Sensory NCS

Nerve / Sites	Rec. Site	O. Lat ms	Sig.	O.P Amp μV	Sig.	Distance cm	Onset Vel m/s	Sig.
R Ulnar - Dig V								
Wrist	Dig V	2.17	Normal	21.32	Normal	12	55.38	Normal
Wrist	Dig V	2.10		22.17		12	57.03	
L Ulnar - Dig V								
Wrist	Dig V	2.25	Normal	21.30	Normal	12	53.33	Normal
Wrist	Dig V	2.21		21.21		12	54.34	
R Superficial peroneal - Ankle								
Calf	Ankle	2.48	Normal	19.08	Normal	12	48.40	Normal
Calf	Ankle	2.46		18.15		12	48.81	
L Superficial peroneal - Ankle								
Calf	Ankle	2.52	Normal	20.70	Normal	12	47.60	Normal
Calf	Ankle	2.48		21.43		12	48.40	
R Sural								
Leg	Ankle	2.52	Normal	13.82	Normal	12	47.60	Normal
Leg	Ankle	2.52		13.54		12	47.60	
L Sural								
Leg	Ankle	2.60	Normal	12.05	Normal	12	46.08	Normal
Leg	Ankle	2.54		12.37		12	47.21	
R Lateral femoral cutaneous - Thigh (Inguinal ligament)								
A. Ing ligament	Thigh	1.90	Normal	4.74	Normal	12	63.30	Normal
B. Ing Ligament	Thigh	1.90		4.59		12	63.30	
L Lateral femoral cutaneous - Thigh (Inguinal ligament)								
A. Ing ligament	Thigh	2.44	Delayed	2.05	Low	12	49.23	Normal
B. Ing Ligament	Thigh	2.44		2.04		12	49.23	

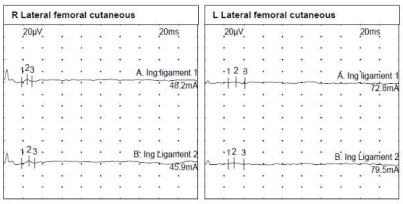
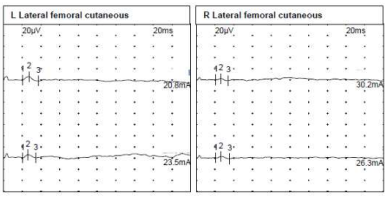


Table 2. *Sensory NCS (CASE2)*

Sensory NCS

Nerve / Sites	Rec. Site	O. Lat ms	Sig.	O.P Amp μV	Sig.	Distance cm	Onset Vel m/s	Sig.
L Superficial peroneal - Ankle								
Calf	Ankle	2.42	Normal	14.89	Normal	12	49.66	Normal
Calf	Ankle	2.42		14.64		12	49.66	
R Superficial peroneal - Ankle								
Calf	Ankle	2.42	Normal	15.80	Normal	12	49.66	Normal
Calf	Ankle	2.42		16.35		12	49.66	
L Sural								
Leg	Ankle	2.29	Normal	20.69	Normal	12	52.36	Normal
Leg	Ankle	2.23		20.60		12	53.83	
R Sural								
Leg	Ankle	2.31	Normal	23.74	Normal	12	51.89	Normal
Leg	Ankle	2.38		23.23		12	50.53	
L Lateral femoral cutaneous - Thigh (Inguinal ligament)								
A. Ing ligament	Forearm	2.02	Normal	5.99	Normal	12	59.38	Normal
B. Ing ligament	Forearm	2.04		6.08		12	58.78	
R Lateral femoral cutaneous - Thigh (Inguinal ligament)								
A. Ing ligament	Forearm	2.08	Normal	2.17	Low	12	57.60	Normal
B. Ing ligament	Forearm	2.06		2.54		12	58.18	
L Saphenous - Knee								
Knee	Calf	2.38	Normal	6.57	Normal	14	58.95	Normal
Knee	Calf	2.44		6.25		14	57.44	
R Saphenous - Knee								
Knee	Calf	2.35	Normal	6.00	Normal	14	59.47	Normal
Knee	Calf	2.35		5.85		14	59.47	



CONCLUSION

- This case report focuses on a rare condition called MP, which can cause significant discomfort in daily life.
- MP is typically caused by compression of the inguinal ligament resulting from wearing tight clothing, belts, or obesity. As demonstrated in Case 2, there are instances where the cause is unknown.
- Neurologic symptoms caused by radiculopathy and lumbosacral plexopathy may mimic MP, and diagnosis of MP has been delayed or under-evaluated.
- By describing these rare cases, we recommend the careful investigation of MP in patients with the complaint of pain in the anterolateral thigh for early management even though there are no definite cause.

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