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Case Report: Meralgia Paresthetica In A 55-Year-Old Female Managed With Diagnostic LFCN Block And 5% Dextrose Injection

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Abstract
Meralgia paresthetica (MP) is a sensory mononeuropathy caused by entrapment of the lateral femoral cutaneous nerve (LFCN), presenting with burning pain, numbness, or tingling in the anterolateral thigh. We present a case of a 55-year-old female with classic symptoms of MP, responded partially to conservative management, confirmed via diagnostic nerve block using 1% lignocaine, and successfully managed with therapeutic perineural injection of 5% dextrose. The case highlights the diagnostic utility of local anesthetic blocks and supports the emerging role of dextrose prolotherapy in peripheral nerve entrapment syndromes.

Keywords: *Meralgia paresthetica, lateral femoral cutaneous nerve block, lignocaine, 5% dextrose injection, nerve entrapment, prolotherapy*

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I. Introduction

Meralgia paresthetica (MP) results from entrapment or irritation of the lateral femoral cutaneous nerve (LFCN), a purely sensory nerve. While conservative management is typically effective, diagnostic nerve blocks and therapeutic perineural injections are increasingly used for both confirming diagnosis and providing symptom relief. 5% dextrose injection (D5W) is emerging as a safe, non-neurotoxic option for nerve hydrodissection and long-term relief.

Patient Information
Age: 55 years
Gender: Female
Occupation: Office administrator
BMI: 31.2 (Obese, Class I)
Medical History: Type 2 Diabetes Mellitus (controlled), hypertension
Surgical History: Cesarean section, laparoscopic cholecystectomy
Family History: Non-contributory

Chief Complaint

Right-sided burning pain, numbness, and tingling over the anterolateral thigh for 4 months, exacerbated by standing and walking, improved by rest.

Clinical Examination
Sensory: Hypoesthesia to light touch and pinprick over the right anterolateral thigh
Motor and reflexes: Normal
Tinel's sign: Positive over inguinal ligament (right side)
No spinal tenderness or radiculopathy
Tests: SLR -ve / FABER - ve/ FAIR - ve

Investigations
HbA1c: 6.5%
Lumbar MRI: No disc herniation or foraminal stenosis
NCS/EMG: Absent right LFCN sensory response, normal motor responses

Management and Outcome

Conservative Treatment Approach:

*Advised discontinuation of tight garments (e.g., shapewear)
*Weight reduction plan (dietary counseling and exercise)
*Physical therapy: Focus on core strengthening and posture correction

Medications:
*Gabapentin 300 mg at night (titrated up to 600 mg/day)
*Topical capsaicin cream over the affected area

Follow-up:
At 3 months: symptom improvement (VAS score from 7/10 to 5/10) but not significantly even with increasing dose of Gabapentin dosage (1800mg/day).

Diagnostic Procedure
To confirm LFCN involvement and localize the entrapment:

Ultrasound-Guided Diagnostic LFCN Block:
Approach: In-plane, ultrasound-guided, lateral to medial under the inguinal ligament
Injection: 3 mL of 1% lignocaine around the LFCN
Outcome: Immediate and complete resolution of symptoms within 15 minutes, lasting approximately 2 hours
Interpretation: Positive block confirming diagnosis of "Meralgia Paresthetica"

Therapeutic Intervention
After diagnostic confirmation, the patient underwent "therapeutic perineural injection with 5% dextrose (D5W)":

Ultrasound-Guided Perineural Injection (Hydrodissection):
Under USG, the LFCN was visualized superficial to the sartorius muscle and deep to fascia lata.
Solution: 10 mL of 5% dextrose in water (D5W)
Technique: Same in-plane ultrasound-guided approach as diagnostic block
Goal: Hydrodissection of the LFCN from surrounding fascial planes
Rationale: Dextrose acts as a non-toxic, anti-inflammatory agent and facilitates nerve gliding

Post-Procedure Monitoring:
No adverse effects
VAS pain score reduced from 7/10 to 2/10 at 1week post-injection
Additional sessions planned at 3-week intervals (total of 3 sessions)

Follow-up and Outcome
1-month follow-up: Sustained improvement in symptoms, resumed normal walking, reduced gabapentin dose
3-month follow-up: VAS score 1/10; complete discontinuation of medications; improved quality of life
Weight Loss: 4 kg with concurrent lifestyle changes
"No recurrence" reported at 6 months

II. Discussion

This case supports the dual role of ultrasound-guided interventions in MP:
"Diagnostic nerve block" using lignocaine confirms the LFCN as the pain generator
"Perineural 5% dextrose injection" provides sustained relief through hydrodissection and modulation of neurogenic inflammation

The use of "D5W" is advantageous due to its:
* Non-neurotoxic profile
* Safety in diabetic patients (due to minimal systemic absorption)
* Anti-inflammatory effects through downregulation of TRPV1 channels and neurogenic peptides
* Dextrose is hypothesized to reduce neurogenic inflammation and restore nerve function through non-destructive neuromodulation

Emerging literature supports its use in carpal tunnel syndrome, ulnar neuropathy, and MP, offering a "non-steroidal, minimally invasive option" for long-term relief.

III. Conclusion

In this patient, diagnostic block with 1% lignocaine effectively confirmed MP, and therapeutic hydrodissection with 5% dextrose resulted in durable symptom relief. This approach is an effective, minimally invasive treatment for MP, especially in patients with relative contraindications to corticosteroids or those preferring non-pharmacologic options.

Patient Perspective

The patient appreciated the clarity of diagnosis and rapid symptom relief without reliance on long-term medications or invasive surgery. She expressed satisfaction with the procedure and reported a significant improvement in daily function and mobility.

Consent

Written informed consent was obtained from the patient for publication of this case and any associated images.

Conflict of Interest

None declared.