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CASE REPORT
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An Iatrogenic Foot Drop Related To Local Anesthesia During Loop Electrosurgical Excision Procedure (LEEP) - A Rare Case Report

Loop Electrosurgical Excision Prosedürü (LEEP) Sırasında Lokal Anestezi Sonrası Gelişen İyatrojenik Düşük Ayak – Nadir Bir Olgu Sunumu

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ABSTRACT

Foot drop is a common complication after gynecological surgeries or a prolonged lithotomy position. The Loop electrosurgical excision procedure (LEEP) is widely used for cervical lesions. Before the LEEP, the gynecologist applied local anesthesia to the cervix. We describe a rare case of foot drop that occurred immediately after local cervical anesthesia. In this case 48-year-old female was referred to the emergency room with foot drop after local cervical injection for LEEP. Her blood tests and radiological findings revealed no abnormalities. After 4 hours of follow-up, foot drop resolved without sequelae. Foot drop has not been defined as a complication of local anesthesia for LEEP. Gynecologists should be aware that patients can recover completely after a short period of observation.

Keywords: Surgery in GYN cancers, LEEP, local anesthesia, foot drop

ÖZ

Düşük ayak, jinekolojik ameliyatlardan veya uzun süreli litotomi pozisyonundan sonra sık görülebilen bir komplikasyondur. Loop elektrocerrahi eksizyon prosedürü (LEEP), servikal lezyonlar için yaygın olarak kullanılır. LEEP işlemi öncesi, servikse lokal anestezi uygulanmaktadır. Servikse lokal anestezi uygulandıktan hemen sonra düşük ayak bulguları gelişen nadir bir vakayı sunduk. Bu vakada, 48 yaşında bir kadın, LEEP için servikse lokal enjeksiyondan sonra ayak düşmesi şikayeti gelişmesi üzerine jinekoloji polikliniğinden acil servise yönlendirildi. Kan testleri ve radyolojik bulgularında herhangi bir anormallik saptanmayan hastanın düşük ayak bulguları, 4 saatlik izlem sonrası herhangi bir sekel bırakmadan düzeldi. Düşük ayak, LEEP için lokal anesteziden sonra tanımlanmamış bir komplikasyondur. Jinekologlar, hastanın kısa bir takipten sonra tamamen iyileşeceğini bilmelidir.

Anahtar Kelimeler: Jinekolojik kanserlerde cerrahi, LEEP, lokal anestezi, düşük ayak

INTRODUCTION

One of the common procedures performed by gynecologists is the loop electrosurgical excision procedure (LEEP), which is used to diagnose and treat cervical dysplasia.

LEEP is a minor procedure that may be performed under local anesthesia. When performed under local anesthesia, the agent is injected directly into the cervix.

Standard gynecology textbooks mention stretch injury of the sciatic nerve and its peroneal branch as complications following vaginal hysterectomy, often associated with instrumentation and prolonged positioning. However, in our case, foot drop developed immediately after the physician applied local anesthesia for the LEEP.

In this report, we present a 48-year-old female who developed foot drop after intracervical local anesthesia.

CASE REPORT

The gynecologist referred a 48-year-old female to the emergency room with a right-sided foot drop after local anesthesia for a LEEP. She had a previous diagnosis of cervical intraepithelial neoplasia grade 2 (CIN-2). There were no comorbidities except CIN-2. The gynecologist decided to do a LEEP with local anesthesia for treatment. According to the procedural note, a paracervical block with 1% lidocaine containing epinephrine (1:100,000)

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was administered; the total volume was 12 mL (≈120 mg lidocaine) using a 25-g needle at the 3 and 9 o'clock positions.

While waiting for the effect of the local anesthesia, the patient developed inability to move her right foot at about 2 minutes; when the gynecologist noted numbness in the right leg and gait disturbance, she was referred to the emergency room.

When the patient was arrived to the emergency room, she had weakness and could not lift her right foot while walking. Her vital signs were within normal limits for her age. On physical examination, she had weakness of the right foot with complete weakness in dorsiflexion. Sensation was preserved over dorsum of the right foot. Foot drop was noted in the emergency room. The remainder of the physical examination revealed no abnormalities. Serum biochemistry showed no electrolyte abnormalities, and other blood tests were within normal limits. Brain computed tomography (CT) and magnetic resonance imaging were performed. No abnormalities were detected. The patient was thought to have a sciatic nerve, anesthesia-related foot drop at the infrapirifom foramen level, and conservative management was started. Figure 1 (A–F; top row A–B, middle row C–D, bottom row E–F) shows the foot positions at admission, at the 2nd hour, and at discharge (~4th hour); left panels are lateral views and right panels are plantar views. She was discharged in full recovery after 4 hours of follow-up.

Written informed consent was obtained from the patient for publication of this case report and the accompanying clinical details/images, in accordance with the Declaration of Helsinki and our institutional policies.

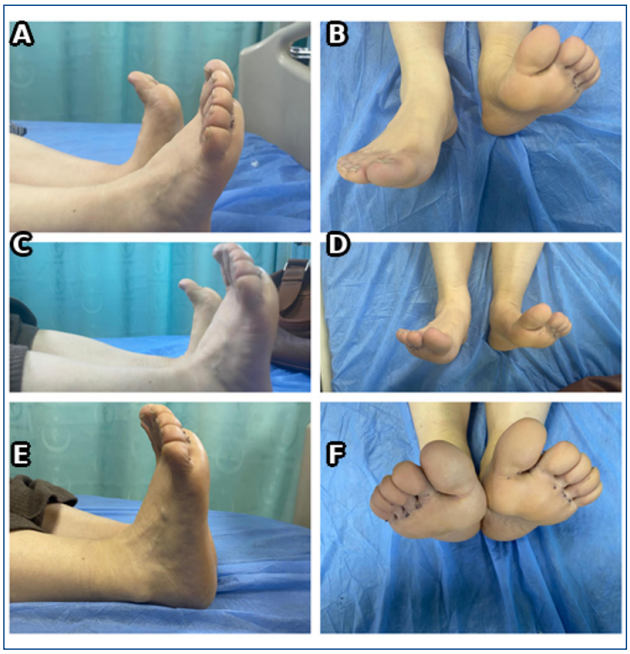

Figure 1. Top row—admission: (A) lateral view, (B) plantar view; Middle row—2nd hour: (C) lateral view, (D) plantar view; Bottom row—discharge (~4th hour): (E) lateral view, (F) plantar view.

DISCUSSION

Foot drop is classically defined as weakness of ankle dorsiflexion, with etiologies spanning central and peripheral nervous system lesions (1,2). Although motor neuropathy after gynecologic procedures is well documented—particularly in the context of prolonged lithotomy and traction (3)—to our knowledge foot drop immediately following cervical local anesthesia administered for LEEP has not been described in standard complication lists or large evidence syntheses of LEEP outcomes (4,5,7). Our case therefore fills a gap by linking a transient, unilateral foot drop to the timing of intravaginal (cervical) local anesthetic infiltration.

Several pathophysiological explanations merit consideration. (i) Local-anesthetic–related neurotoxicity may occur when high local concentrations reach neural tissue, particularly with inadvertent intraneural or perineural spread; sodium-channel blockade and membrane destabilization can produce a transient neurapraxia. While the injection site (cervix) is remote from the sciatic/peroneal pathway, autonomic plexus connectivity and potential hematogenous or lymphovascular distribution of small anesthetic amounts have been hypothesized in analogous remote neuropathies; critically, the abrupt onset after injection and the complete recovery within hours in our patient are consistent with a short-lived conduction block rather than axonal injury (1,2,8).

(ii) Vascular mechanisms are also plausible. Vasoconstrictor admixtures (e.g., epinephrine) can provoke regional vasospasm, reducing perfusion to the vasa nervorum and causing transient ischemia-induced conduction failure. Even without explicit vasoconstrictor use, intense local sympathetic stimulation may precipitate microvascular dysregulation. The reversibility within four hours aligns with ischemic neurapraxia rather than infarction, again arguing against axonotmesis (1,8).

(iii) Positional/peroneal compression is a recognized cause of postoperative foot drop in gynecology—especially at the fibular neck during lithotomy (3). In our case, however, symptoms preceded any prolonged positioning, and there was no external compression history or weight-loss risk to suggest heightened susceptibility. These features make a purely positional etiology less likely compared with an anesthesia-related transient neurapraxia.

In the differential diagnosis of acute foot drop, peripheral etiologies should be considered alongside central causes. The most common peripheral causes include common peroneal neuropathy at the fibular head (compression, habitual leg crossing, rapid weight loss), L5 radiculopathy (disc herniation), sciatic neuropathy (including iatrogenic injection injury or stretch), and less commonly lumbosacral plexopathy and compartment syndrome (1–3). In our patient, the abrupt onset immediately after cervical local anesthesia, absence of back

pain or radicular symptoms, normal brain imaging, and the rapid, complete recovery within hours argue against ischemic stroke, L5 radiculopathy, or structural compressive neuropathies. These features, together with the temporal relationship to the procedure, favor a transient anesthesia-related neurapraxia affecting the sciatic/peroneal pathway rather than alternative peripheral or central causes (1–3).

From a differential-diagnosis perspective, central causes (e.g., stroke) and proximal lesions (L5 radiculopathy, lumbosacral plexopathy, sciatic neuropathy) must be considered (1–3). Normal brain imaging, the absence of back pain/radicular symptoms, preserved sensation over most distributions, and the rapid, full recovery argue strongly against an ischemic central lesion or compressive radiculopathy. Among peripheral etiologies, common peroneal neuropathy at the fibular head and injection-related sciatic injury are the most frequent; in our scenario, the tight temporal association with cervical infiltration favors a transient anesthesia-related neurapraxia affecting the sciatic/peroneal pathway over alternative explanations (1–3).

Comparison with the literature. Large reviews of LEEP emphasize bleeding, infection, and reproductive sequelae but do not list acute peroneal/sciatic neuropathy among expected complications (4,5). Motor neuropathy related to lithotomy has been repeatedly documented in anesthesia literature (3), whereas obstetric/gynecologic regional anesthesia reviews highlight the rarity of persistent neurologic deficits and underscore the importance of timely recognition and conservative management when neurapraxia is suspected (8). Our patient's course—abrupt onset post-infiltration, normal imaging/labs, and complete recovery within hours—fits this conservative paradigm and contrasts with the more protracted recoveries often seen in compressive or axonal injuries.

Clinical implication and novelty. This appears to be the first reported case of transient foot drop immediately following cervical local anesthesia for LEEP, suggesting that even distal infiltrations may, in rare instances, precipitate short-lived peripheral motor deficits. Awareness of this possibility can prevent unnecessary alarm, guide focused neurologic assessment, and support brief observation with expectation of full recovery—while remaining vigilant for red flags that would necessitate urgent imaging or specialty consultation (1,3,8).

ETHICAL DECLARATIONS

Informed Consent: All patients signed the free and informed consent form.

Referee Evaluation Process: Externally peer-reviewed.

Conflict of Interest Statement: The authors have no conflicts of interest to declare.

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Author Contributions: All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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