1 Patient Identification

Name:	Diana L. Carver
DOB / Age:	August 9, 1976 / 48 years
Sex:	Female
MRN:	MRN-3728491
Date of Visit:	April 27, 2025
Referring Provider:	Dr. Michael Patterson, MD (Orthopedics, Nashville, TN)
Neurosurgeon:	Dr. Jonathan K. Harris, MD, FAANS — Vanderbilt Neurosurgery
Location of Service:	Vanderbilt Neurosurgical Associates, Nashville, TN
Historian and reliability:	Patient — reliable, articulate historian. Brings prior imaging on CD and detailed symptom diary.
Visit Type (new / follow-up / post-op / second opinion):	New Consultation — surgical evaluation for lumbar disc herniation with progressive neurological deficit

2 Chief Complaint

Primary neurosurgical concern:	Right-sided L4-L5 disc herniation causing severe right leg radiculopathy with progressive right foot drop
Duration:	Low back pain for 18 months. Right leg radiculopathy for 9 months. Foot drop (right) progressing over past 6 weeks.

3 History of Present Illness

SYMPTOM ONSET & COURSE

Onset (sudden / gradual):	Gradual onset of low back pain in October 2023. Acute worsening in July 2024 with onset of right leg pain after lifting heavy boxes at work.
Duration / course (improving / worsening / stable):	Progressively worsening — initially intermittent right leg pain, now constant. Foot drop developed 6 weeks ago and has worsened. Failed all conservative measures over 6 months.
Precipitating event:	Heavy lifting at work (moved furniture) in July 2024 — acute onset of sharp right leg pain from buttock to foot following this event.

PAIN CHARACTERISTICS

Location / radiation:

	Pain originates in right lower back (L4-L5 region), radiates through right buttock, posterior thigh, lateral calf, and dorsal foot to first web space — classic L5 dermatomal distribution.
Quality / severity:	Sharp, burning, electric pain rated 8/10 at rest, 10/10 with prolonged standing or walking. Described as 'hot wire running down my leg.'
Timing:	Constant background aching (5/10) with severe exacerbations with activity, sitting >15 minutes, or Valsalva maneuver. No complete pain-free periods.
Aggravating factors:	Sitting, forward bending, Valsalva (coughing, sneezing, straining at stool). Walking more than one block. Prolonged standing.
Relieving factors:	Lying supine with pillow under knees provides partial relief (3/10). Ice. Partial relief with oxycodone but drowsiness limits use.

NEUROLOGIC SYMPTOMS

Weakness (distribution, progression):	Right ankle dorsiflexion weakness — footdrop present. MRC grade: right ankle dorsiflexion 2/5 (can move but not against gravity), right EHL 2/5. Progression: initially 4/5 six weeks ago, now 2/5. Left side and upper extremities 5/5 throughout.
Sensory changes:	Decreased sensation over right dorsal foot and first web space (L5 distribution). Paresthesias (burning, tingling) right lateral calf and dorsal foot — constant.
Gait / balance disturbance:	Antalgic gait with foot drop — right foot slap pattern, compensatory hip flexion. Using AFO brace (right) provided by orthopedics. Cannot walk without brace — tripping and falling without it.
Bowel / bladder dysfunction:	No bowel or bladder incontinence. No urinary retention. Denies saddle anesthesia. Cauda equina syndrome excluded clinically at this visit.
Headache characteristics:	No headaches. No craniocervical symptoms.
Seizures:	None. No history of epilepsy.
Cognitive / speech changes:	No cognitive changes. Clear speech. No encephalopathy.
Sexual dysfunction:	No sexual dysfunction reported. Denied in context of cauda equina screening.

SPINE-SPECIFIC

Axial vs radicular pain / dermatomal distribution:	Predominantly radicular — L5 dermatomal distribution (right lateral calf, dorsal foot, first web space). Axial component present but secondary. L5 nerve root compression confirmed clinically.
Neurogenic claudication:	No bilateral leg pain with walking (ruling out spinal stenosis as primary diagnosis). Symptoms not relieved by forward flexion.
Prior spine interventions:	1. Physical therapy — 6 months (July 2024–January 2025) — incomplete relief, pain persisted 2. Lumbar epidural steroid injection x2 (November 2024, January 2025) — temporary relief (4 weeks each), no sustained benefit 3. Chiropractic care — 8 sessions (August–September 2024) — no benefit, symptom worsening after manipulation 4. No prior spine surgery

CRANIAL / BRAIN-SPECIFIC

Vision / hearing changes:	No vision or hearing changes. No diplopia.
Facial weakness / numbness:	No facial weakness or numbness. Cranial nerves grossly intact.

Dysphagia / cranial nerve symptoms: No dysphagia, dysarthria, or cranial nerve symptoms.

FUNCTIONAL IMPACT & PRIOR TREATMENTS

ADLs / ambulation / assistive devices / work impact: Cannot ambulate without right AFO brace. Assistance needed on stairs. Cannot perform job (elementary school teacher — must stand for 6+ hours). On disability leave for 8 weeks. Cannot exercise, garden, or participate in prior activities. Significant functional decline.

Prior treatments (meds, PT, injections, chiro, surgeries): Ibuprofen 800mg TID — partial relief, discontinued (GI upset). Naproxen — no benefit. Gabapentin 300mg TID — partial relief for neuropathic pain (current). Oxycodone 5mg PRN — minimal use. Physical therapy 6 months. ESI x2. Chiropractic x8 sessions.

4 Past Medical & Surgical History

PMH PAST MEDICAL HISTORY

1. Hypertension — diagnosed 2018, on amlodipine 5mg daily, well-controlled
2. Hypothyroidism — on levothyroxine 75mcg daily, TSH within normal limits
3. Depression (in remission) — on sertraline 50mg, PHQ-9: 6
4. Lumbar disc disease — current diagnosis
5. Right knee meniscal tear — 2019, managed non-operatively

No prior neurological conditions. No diabetes. No malignancy.

PSH PAST SURGICAL HISTORY

1. Cesarean section — 2010, uncomplicated
2. Laparoscopic appendectomy — 2015, uncomplicated
3. No prior spine surgeries
4. No prior neurosurgical procedures

5 Medications

1. Amlodipine 5mg — once daily (hypertension)
2. Levothyroxine 75mcg — once daily, fasting (hypothyroidism)
3. Sertraline 50mg — once daily (depression, in remission)
4. Gabapentin 300mg — three times daily (radicular neuropathic pain)
5. Oxycodone 5mg — PRN severe pain (used sparingly, 2–3 times per week)
6. Docusate sodium 100mg — BID (constipation from opioids)
7. Vitamin D3 2000 IU — daily

6 Allergies

Drug allergies: Codeine — severe nausea and vomiting. Morphine — urticaria.

Reaction type:

	Codeine: GI (nausea/vomiting). Morphine: dermatologic (urticaria). Both documented in EMR as opioid allergy/adverse reactions.

7 Family & Social History

FH FAMILY HISTORY

Mother (age 74): Lumbar stenosis — L3-L4 laminectomy at age 68, excellent outcome. Osteoporosis.
Father (age 76): Type 2 diabetes, hypertension, CAD — alive
Sister (age 44): No spine disease
No family history of neurological malignancy, ALS, or hereditary neuropathy

SH SOCIAL HISTORY

Occupation:	Elementary school teacher (4th grade) — Nashville Metro Schools. On disability leave for 8 weeks due to foot drop and inability to stand for prolonged periods.
Living situation:	Lives with husband and 14-year-old daughter in Nashville, TN. Two-story home — currently sleeping on ground floor due to inability to safely navigate stairs without AFO.
Tobacco use:	Never smoker
Alcohol use:	Social — 1–2 glasses of wine on weekends. No daily alcohol use.
Substance use:	No illicit drug use. No marijuana. Prescribed opioid use as documented.

8 Review of Systems

Constitutional:	10 lb unintentional weight loss over 9 months (attributed to decreased appetite from chronic pain). Significant fatigue from chronic pain and sleep disruption.
HEENT:	No headaches, vision changes, or hearing complaints.
Cardiovascular:	No chest pain or palpitations. BP well-controlled on amlodipine.
Respiratory:	No shortness of breath, cough, or wheezing.
Gastrointestinal:	Constipation secondary to opioid use — on docusate. Nausea with codeine history. No abdominal pain.
Genitourinary:	No urinary retention or incontinence. Normal bladder function — important for cauda equina surveillance.
Musculoskeletal:	Low back pain and right leg radiculopathy as detailed. Right knee chronic meniscal pain (managed conservatively).
Neurologic:	

	Right L5 radiculopathy with axonal injury (EMG-confirmed) — no central cord lesion, no myelopathy, no evidence of spinal cord compression
Psychiatric:	Depression in remission. Significant psychological distress related to chronic pain and functional decline. PHQ-9: 6.
Endocrine:	Hypothyroidism — well-controlled on levothyroxine. Last TSH 1.8 mIU/L.
Hematologic / Lymphatic:	No easy bruising or bleeding. No lymphadenopathy.
Allergic / Immunologic:	Codeine and morphine adverse reactions as documented.
All other systems reviewed and negative unless otherwise noted:	All remaining systems including ophthalmologic, ENT, reproductive, and immunologic reviewed — negative except as documented above.

O Physical Examination

9 VITALS

BP:	122/78 mmHg (right arm, seated)	**RR:**	16 breaths/ minute	**Oxygen saturation:**	99% on room air
HR:	74 bpm, regular	**Temperature:**	98.6°F (37.0°C)	**BMI:**	24.1 kg/m² (Weight 141 lbs, Height 5'6")

10 GENERAL

Appearance / level of distress:	Well-groomed female appearing stated age. Right AFO brace worn on presentation. Antalgic gait with foot slap pattern. In moderate distress related to pain with ambulation. Alert and cooperative.

11 NEUROLOGICAL EXAMINATION

MENTAL STATUS

Orientation / attention / memory / language:	Oriented to person, place, time, and situation. Attention intact. Memory intact for recent and remote events. Language fluent with no dysarthria or aphasia.

CRANIAL NERVES

Visual fields / eye movements / facial symmetry:	Visual fields full to confrontation bilaterally. Extraocular movements intact, no nystagmus, no diplopia. Facial symmetry intact, no CN VII deficit.
Hearing / palate elevation / tongue movement:	Hearing grossly intact bilaterally. Palate elevates symmetrically (CN X intact). Tongue protrudes midline (CN XII intact).

MOTOR

Strength (0-5 scale):	RIGHT LOWER: Hip flexion 5/5, knee extension 5/5, knee flexion 5/5, ankle dorsiflexion 2/5 (FOOT DROP), EHL 2/5, ankle plantarflexion 4/5.

	LEFT LOWER: 5/5 throughout. UPPER extremities bilateral: 5/5 throughout.
Tone / bulk:	Normal tone in upper extremities. Right tibialis anterior muscle atrophy noted — right calf circumference 1.5 cm less than left. No spasticity.

SENSORY

Light touch / pinprick:	Decreased light touch and pinprick over right dorsal foot and first web space (L5 distribution). Intact elsewhere. Left side intact throughout.
Vibration / proprioception:	Vibration sense reduced right great toe — 5 seconds (normal >10 seconds). Proprioception intact bilateral upper extremities. Right great toe position sense mildly impaired.

REFLEXES

Deep tendon reflexes:	Biceps 2+ bilateral. Triceps 2+ bilateral. Brachioradialis 2+ bilateral. Patellar 2+ bilateral. Achilles: right 1+ (reduced), left 2+. Asymmetric Achilles reflex.
Pathologic reflexes (Babinski, Hoffmann):	Babinski: flexor plantar response bilaterally — no pathologic sign. Hoffmann: negative bilaterally. No clonus.

COORDINATION & GAIT

Finger-to-nose / heel-to-shin / rapid alternating:	Finger-to-nose: accurate bilaterally. Heel-to-shin: unable to perform right side due to foot drop. Rapid alternating movements: intact bilaterally in upper extremities.
Normal gait / tandem gait / Romberg:	Antalgic gait with right foot drop — foot slap, compensatory hip hiking. Requires AFO for safe ambulation. Tandem gait: not attempted due to safety concern. Romberg: negative (eyes closed, stable).

12 SPINE EXAMINATION

Posture / alignment:	Antalgic lean away from right side. Lumbar lordosis reduced. Mild right lateral trunk shift noted. No scoliosis.
Tenderness / muscle spasm:	Right paraspinal muscle spasm at L4-L5 level. Tenderness to palpation at right L4-L5 facet joint and right sciatic notch. No midline tenderness over spinous processes.
ROM (cervical / thoracic / lumbar):	Lumbar: forward flexion 30° (limited, reproduces right leg pain), extension 10° (limited), right lateral flexion 15° (limited by pain), left lateral flexion 30°. Cervical and thoracic: full ROM, non-tender.
Straight leg raise / Spurling test:	Straight leg raise: RIGHT — positive at 30° (reproduces right leg shooting pain to foot). LEFT — negative at 80°. Crossed SLR: POSITIVE right — indicates large disc herniation. Spurling test: not indicated (no cervical symptoms).

13 DIAGNOSTIC DATA REVIEWED

MRI (region, findings):	MRI Lumbar Spine with and without contrast (March 15, 2025, Vanderbilt Radiology): Large right paracentral/foraminal L4-L5 disc herniation with significant right lateral recess stenosis, severe right L5 nerve root compression. Nerve root edema and perineural enhancement indicating acute inflammation. Disc material extends 8mm beyond posterior vertebral body. Moderate L4-L5 facet arthropathy bilaterally.
CT:	

	CT Lumbar Spine without contrast (January 2025): L4-L5 disc herniation confirmed, no calcification of disc, no bony destruction. Facet arthropathy moderate bilaterally L4-L5.
X-ray:	Lumbar spine X-ray AP/Lateral/Flexion-Extension (July 2024): No spondylolisthesis. Mild disc space narrowing L4-L5. No instability on dynamic views.
EMG / NCS:	EMG/NCS (February 2025, Dr. Lisa Park, Neurology): Right L5 radiculopathy confirmed — fibrillations and positive sharp waves in right tibialis anterior, peroneus longus, and extensor hallucis longus. Absent right peroneal motor response distal to fibular head (axonal injury). Normal left-sided and upper extremity NCS/EMG. Findings confirm severe right L5 radiculopathy with axonal injury.
Labs / external records:	CBC: WBC 7.2, Hgb 13.6, Plt 225 — normal. CMP: Na 138, K 4.1, Cr 0.8, Glucose 88 — normal. PT/INR 1.0. TSH 1.8 mIU/L. ESR 18 mm/hr, CRP 0.4 mg/L (no infection or inflammatory process). HbA1c 5.2% (no diabetes).

A Assessment

14 PRIMARY DIAGNOSIS

Neurosurgical condition with level and severity:	Large right paracentral L4-L5 disc herniation with severe right L5 nerve root compression, confirmed by MRI and EMG. Clinical correlate: progressive right foot drop (MRC 2/5 ankle dorsiflexion), L5 radiculopathy, failure of 6 months conservative therapy.
ICD-10 Code:	M51.16 (Intervertebral disc degeneration, lumbar region); G54.4 (Lumbosacral root disorders, not elsewhere classified); M54.42 (Lumbago with right sciatica); G83.1 (Monoplegia of lower limb — right foot drop)

15 DIFFERENTIAL DIAGNOSES

Structural:	Large L4-L5 disc herniation with right lateral recess stenosis and L5 nerve root compression — PRIMARY diagnosis confirmed on MRI, EMG, and clinical examination
Neurologic:	Right L5 radiculopathy with axonal injury (EMG-confirmed) — no central cord lesion, no myelopathy, no evidence of spinal cord compression
Non-neurologic causes:	Piriformis syndrome — excluded (no piriformis tenderness, positive SLR at 30°, MRI confirms disc herniation). Peroneal nerve palsy at fibular head — excluded (EMG shows L5 radiculopathy pattern, not peroneal nerve distribution). Hip pathology — excluded (no groin pain, ROM preserved).

16 PROBLEM LIST

Pain / neurologic deficits:	Severe right L5 radicular pain (8/10 at rest), progressive foot drop (ankle dorsiflexion 2/5, worsened from 4/5 over 6 weeks), right L5 sensory deficit, right Achilles hyporeflexia, tibialis anterior atrophy
Functional limitation / imaging abnormalities:	Cannot ambulate without AFO. On disability from work (teacher). Cannot perform ADLs independently. MRI: 8mm disc extrusion with nerve root enhancement. EMG: axonal injury

pattern indicating prolonged compression with risk of permanent deficit if not decompressed.

P Plan

17 MEDICAL MANAGEMENT

Medications / pain management:

Continue gabapentin 300mg TID for neuropathic pain. Continue oxycodone 5mg PRN (sparingly). POST-OPERATIVELY: transition to scheduled acetaminophen 650mg q6h, ibuprofen 600mg q8h (if no contraindication), gabapentin taper. Hydromorphone PRN post-op (avoid morphine/codeine per allergy).

18 PROCEDURAL / SURGICAL PLAN

Indication for surgery:

URGENT — progressive neurological deficit (foot drop worsening from 4/5 to 2/5 over 6 weeks) with EMG-confirmed axonal injury. Failure of 6 months conservative therapy (PT, 2 ESIs, medications). Significant functional disability. Large disc extrusion on MRI with nerve root enhancement.

Procedure considered:

Right L4-L5 microdiscectomy — minimally invasive approach. Intraoperative neuromonitoring (EMG) planned. Expected operative time 60–90 minutes. Outpatient or 23-hour admission depending on intraoperative findings.

Urgency:

URGENT — recommended within 2 weeks. Progressive foot drop with axonal injury (EMG) — window for neurological recovery narrows with prolonged compression. Not emergent (no cauda equina syndrome, no bowel/bladder involvement).

19 RISK DISCUSSION

Surgical risks / benefits / alternatives:

RISKS: Infection (1–2%), CSF leak/durotomy (2–5%), nerve injury/ worsening deficit (<1%), bleeding, recurrent disc herniation (5–15%), failed back surgery syndrome, anesthesia risks. BENEFITS: 85–90% success rate for radicular pain relief, high likelihood of foot drop improvement if decompressed promptly (better prognosis if <6 weeks foot drop). ALTERNATIVES: continued conservative management — not recommended given progressive axonal injury; repeat ESI — temporary benefit already shown insufficient.

20 DIAGNOSTICS & REFERRALS

Additional imaging / labs:

Pre-operative workup today: CBC, CMP, PT/INR, urinalysis, chest X-ray, EKG. Blood type and screen. Cardiology pre-op clearance given HTN on amlodipine — requested today.

Referrals (pain mgmt / neurology / PT):

Pre-op PT for core strengthening and gait optimization. Anesthesiology pre-op evaluation scheduled. Pain management referral for post-op plan. Physical medicine and rehabilitation post-op for AFO management.

21 REHABILITATION & RESTRICTIONS

Physical / occupational therapy:

Pre-operative PT: lumbar stabilization, gait training with AFO, 3 sessions in 2 weeks pre-operatively. Post-operative PT: begin at 2 weeks post-op — foot drop rehab, AFO weaning program, core strengthening.

Lifting / work restrictions:	Current: no lifting >10 lbs, no prolonged standing or sitting, continue AFO use at all times. Post-operative (1–6 weeks): no lifting >5 lbs, no bending or twisting, driving restrictions (cannot drive with right foot drop or on opioids). Return to work (teaching): 6–8 weeks post-op if foot drop resolving.

22 FOLLOW-UP

Timeline:	Surgery within 2 weeks (target May 11, 2025). Pre-op appointments this week. Post-operative visit at 2 weeks, 6 weeks, and 3 months.
Red flag symptoms:	CALL 911 or ER IMMEDIATELY: new bowel or bladder incontinence or retention, saddle anesthesia (inner thighs/perineum numbness), rapid bilateral leg weakness — CAUDA EQUINA EMERGENCY. Call clinic: worsening pain not controlled with medications, fever >101°F post-op, wound drainage, or inability to walk.

23 TIME & BILLING

Total time spent:	80 minutes
Counseling and coordination time:	40 minutes (surgical discussion, risk-benefit counseling, pre-operative planning, work restriction documentation)
Complexity / risk level / data reviewed:	High complexity MDM — progressive neurological deficit, urgent surgical decision-making, imaging and EMG reviewed, multiple comorbidities managed, extensive risk discussion. High risk level given active motor deficit requiring urgent intervention.

Neurosurgeon name & credentials:	Dr. Jonathan K. Harris, MD, FAANS — Neurosurgery, Vanderbilt University Medical Center
Signature:	J.K. Harris, MD
NPI:	1902847361
Date / Time:	April 27, 2025 — 3:45 PM CST
Facility:	Vanderbilt Neurosurgical Associates, 1500 21st Ave S., Nashville, TN 37212
Visit type:	New Patient Consultation (99205, High Complexity MDM) + Surgical Planning