ADVANCED THORACIC SURGERY & PAIN MANAGEMENT

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Patient: MARTINEZ, CARLOS R. **Sex:** M **DOB:** 02/28/1957 (Age: 67)
MRN: ATSP-2024-8923 **Visit Date:** September 24, 2024
Insurance: Medicare Part B | ID: 2WX-YK-9482C

CHIEF COMPLAINT:

Severe chronic right chest wall pain following thoracotomy, failed multiple interventions

HISTORY OF PRESENT ILLNESS:

Mr. Martinez is a 67-year-old gentleman presenting for evaluation of peripheral nerve stimulation for management of severe, chronic post-thoracotomy pain syndrome (PTPS) affecting his right chest wall.

Surgical History & Pain Onset:

Patient underwent right posterolateral thoracotomy in March 2021 for resection of stage IB non-small cell lung cancer (right upper lobe). Surgery performed at WY Regional Medical Center by Dr. Harrison (thoracic surgery). Postoperative recovery initially unremarkable from oncologic standpoint - margins clear, no adjuvant chemo/radiation required. However, patient developed persistent severe pain along right thoracotomy incision site and surrounding chest wall beginning approximately 2 weeks post-op.

Pain has persisted for **3.5 years** (42 months). Describes pain as constant burning, stabbing, and shock-like sensations along right lateral chest wall, particularly T4-T7 dermatomes. Baseline pain 7/10, spikes to 9-10/10 with movement, deep breathing, coughing. Pain worsened by reaching, lifting, or lying on affected side. Significantly limits activities - unable to golf (previous hobby), difficulty sleeping, reduced QOL.

Oncology f/u: Currently NED (no evidence disease) per most recent CT 8/2024. Cleared from cancer standpoint.

COMPREHENSIVE TREATMENT HISTORY:

Pharmacological Management:

Medication	Dose/Duration	Outcome
Gabapentin	Titrated to 1200mg TID x 8 months (2021)	30% improvement initially, tolerance developed
Pregabalin	300mg BID x 10 months (2022)	Inadequate relief, d/c'd due to dizziness
Duloxetine	60mg daily x 6 months (2022)	Minimal benefit
Lidocaine patches 5%	Daily application x 18 months (ongoing)	Mild relief only
Topical compound (Gabapentin/Ketamine/Lidocaine)	TID application x 12 months	Limited benefit
Oxycodone	10mg Q6H PRN x 14 months (2021-2022)	Provided some relief but pt desired to d/c opioids

Opioid Tapering: Patient successfully tapered off oxycodone over 4-month period in 2023 with support of pain psychology. Currently opioid-free since January 2023.

Interventional Procedures:

☑ **Intercostal nerve blocks:** Total of 6 series performed at various levels T4-T7

- Series 1 (June 2021): T5-T6 bilateral - relief 2 weeks
- Series 2 (September 2021): T4-T7 unilateral (right) - relief 3 weeks
- Series 3 (January 2022): T5-T6 with steroid - relief 4 weeks
- Series 4 (May 2022): T4-T7 right - relief <2 weeks
- Series 5 (October 2022): T5-T6 - minimal relief
- Series 6 (March 2023): T5 intercostal - relief 10 days only

☑ **Cryoablation of intercostal nerves:** Performed November 2022 at levels T5-T6 right. Initial improvement for approximately 6 weeks, but pain gradually returned to baseline by 10 weeks post-procedure.

☑ **Radiofrequency ablation (RFA):** Attempted June 2023, right T5-T6 intercostal nerves. Technically successful procedure but provided only 8 weeks of partial relief before pain returned.

Rehabilitation & Adjunctive Therapies:

- Physical therapy: 10 weeks (Spring 2022) - gentle ROM, breathing exercises, scar mobilization. Limited improvement.
- Occupational therapy: 6 weeks (Summer 2022) - functional activity modification, ergonomic training
- Pain psychology: Ongoing since 2021, weekly then monthly sessions. CBT, mindfulness, acceptance-based therapy. Assisted with opioid taper.
- Acupuncture: 16 sessions (Fall 2023) - no sustained benefit
- TENS unit: Daily use x 8 months - minimal relief

PAST MEDICAL HISTORY:

- Non-small cell lung CA (RUL), stage IB - s/p thoracotomy 3/2021, currently NED
- Post-thoracotomy pain syndrome (3.5 years)
- Hypertension - well controlled
- Type 2 Diabetes Mellitus - A1c 6.9% (most recent)
- Hyperlipidemia
- COPD (mild, smoking-related) - stable
- History of tobacco use (quit 2020)

SURGICAL HISTORY:

- Right posterolateral thoracotomy with RUL lobectomy (March 2021)
- Cholecystectomy (1998)
- Inguinal hernia repair (2005)

CURRENT MEDICATIONS:

Gabapentin 900mg TID | Lidocaine patch 5% daily to affected area | Metformin 1000mg BID
Lisinopril 20mg daily | Atorvastatin 40mg qhs | Metoprolol 50mg BID | Aspirin 81mg daily
Tiotropium inhaler (Spiriva) 18mcg daily | Albuterol MDI PRN

ALLERGIES:

Penicillin (rash)

SOCIAL HISTORY:

Tobacco: Former smoker, 40 pack-year history. Quit March 2020 prior to cancer diagnosis.
Alcohol: Denies current use (quit 2020).
Illicit drugs: DENIES - never used
Occupation: Retired construction foreman (2022, early retirement due to pain).
Living situation: Married, wife is supportive. 3 adult children. Lives in single-story home.
Functional status: Pain significantly limits activities. Cannot golf (former avid golfer). Difficulty with yard work, lifting. Sleep disrupted by pain.

Substance Abuse Screening: No current or historical substance abuse. UDS performed 9/18/2024: Negative for all substances except prescribed gabapentin (confirmed). PDMP reviewed - no red flags, appropriate use of prescribed medications only.

PHYSICAL EXAMINATION:

Vital Signs: BP 134/82 mmHg, HR 70 bpm, RR 16, O2 sat 96% RA, Temp 98.1°F, Weight 188 lbs
General: Pleasant gentleman, A&O x3, appears stated age
Respiratory: Diminished breath sounds right upper lung field (post-surgical). No wheezing or crackles. Respiratory effort normal at rest.
Chest Wall: Well-healed posterolateral thoracotomy scar, right side (approx. 25cm). Significant allodynia along scar and surrounding tissue T4-T7 distribution. Hyperalgesia to pinprick in affected dermatomes. No erythema, warmth, or drainage. Palpation along intercostal spaces T4-T7 reproduces sharp, electric pain.
Neurologic: Alert, CN II-XII intact. Motor strength 5/5 bilateral UE/LE except limited right shoulder abduction/ROM 2° to chest wall pain. Sensation: Allodynia and hyperalgesia right T4-T7 dermatomes as noted. Intact sensation elsewhere. DTRs 2+ symmetric. Gait steady.

IMAGING & DIAGNOSTICS:

CT Chest with contrast (08/15/2024): Post-surgical changes from RUL lobectomy. No evidence of recurrent malignancy. Lungs otherwise clear. No pleural effusion. Normal mediastinum.
MRI Thoracic Spine (04/10/2024): Mild multilevel degenerative changes. No spinal cord compression, neural foraminal stenosis, or epidural pathology. Post-surgical changes at right thoracotomy site visible.

PSYCHOLOGICAL EVALUATION:

Date: August 20, 2024
Evaluator: Dr. Jennifer Thompson, PhD, Clinical Psychology
Location: Mountain States Behavioral Health

Summary: Comprehensive psychological evaluation completed in anticipation of consideration for neuromodulation. Clinical interview, standardized assessments (BDI-II, BAI, MMPI-2, Pain Catastrophizing Scale), review of treatment history. Patient demonstrates good psychological adjustment despite chronic pain. Successfully discontinued opioids with behavioral support in 2023. BDI-II score 16 (mild depression, situational). No substance abuse history or current concerns - verified by interview, collateral information, and PDMP review. Patient has realistic expectations regarding PNS - understands may not eliminate pain completely but seeking meaningful improvement in pain/function. Strong family support. Actively engaged in pain psychology treatment and utilizing coping strategies. **CLEARED FOR PERIPHERAL NERVE STIMULATION TRIAL.** Recommend continued engagement with behavioral pain management.

ASSESSMENT:

Primary Diagnosis: G89.28 - Other chronic post-thoracotomy pain
Additional Diagnoses: C34.11 - Malignant neoplasm of upper lobe, right bronchus or lung (history)
Z85.118 - Personal history of other malignant neoplasm of bronchus and lung

67-year-old male with severe, chronic post-thoracotomy pain syndrome of 3.5 years duration following right upper lobectomy for lung cancer. Pain involves right chest wall, primarily T4-T7 intercostal nerve distribution, with severe allodynia and functional impairment. Extensive conservative treatments including multiple medication trials, physical/occupational therapy, and pain psychology have been insufficient. Interventional procedures (6 series nerve blocks, cryoablation, radiofrequency ablation) provided only temporary relief. Patient successfully tapered off opioids. Currently NED from oncologic standpoint.

Peripheral nerve stimulation of affected intercostal nerves represents appropriate next intervention given failed conservative and less invasive treatments. Literature supports PNS for post-surgical neuropathic pain including PTPS.

PATIENT COUNSELING & EDUCATION:

Extensive discussion conducted over two visits (initial consult 9/10/24, today 9/24/24) regarding peripheral nerve stimulation as treatment option. Topics covered: mechanism of PNS, differences from other neuromodulation approaches, trial procedure (percutaneous lead placement along affected intercostal nerves T5-T6 under fluoroscopy), trial duration 5-7 days with external generator, importance of pain diary, success criteria (≥50% pain reduction and/or functional improvement), risks (infection 1-2%, lead migration 5-10%, inadequate relief, bleeding, pneumothorax <1%), benefits (potential significant pain improvement), alternatives (continued medical management, repeat RFA, intrathecal pump). Realistic expectations discussed - PNS may provide substantial improvement but complete pain elimination unlikely. If trial successful, permanent implant would be considered in ASC setting. Written educational materials provided. All questions answered thoroughly. Patient demonstrates excellent understanding and expresses strong desire to proceed given lack of effective alternatives.

Detailed informed consent will be obtained on procedure day after final opportunity for questions.

TREATMENT PLAN:

Recommendation: Proceed with percutaneous trial of peripheral nerve stimulation targeting right intercostal nerves T5-T6 (possibly T4-T7 depending on intraoperative assessment)
Setting: Ambulatory Surgery Center
Technique: Fluoroscopy-guided percutaneous placement of electrode array(s)
Trial Duration: 5-7 days with external pulse generator
Follow-up: 1 week post-placement for trial assessment and lead removal
Success Criteria: ≥50% reduction in pain intensity and/or meaningful functional improvement
Concurrent Management: Continue current medications, ongoing pain psychology

PHYSICIAN ASSESSMENT AND RECOMMENDATION:

Post-thoracotomy pain syndrome, refractory to comprehensive multimodal treatment. Patient meets criteria for peripheral nerve stimulation trial. Medically appropriate and necessary intervention.

AUTHORIZATION REQUEST:
CPT Code: **64555** (Percutaneous implantation of neurostimulator electrode array; peripheral nerve)
Nerve(s): Right intercostal nerves T5-T6 (± T4, T7 based on intraoperative assessment)
Number of leads: 1-2 electrode arrays anticipated

Attending Physician: Thomas R. Anderson, MD
Board Certifications: Anesthesiology, Pain Medicine
NPI: 5678901234
Medical License: WY-12345
Date/Time: September 24, 2024 | 16:20 MST

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