Stellate ganglion block followed by sympathectomy for refractory vasospastic angina

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Temporary relief after stellate ganglion block helped guide the decision to pursue sympathectomy

Patient reported 70% symptom relief three months after surgery

BACKROUND & RATIONALE

Vasospastic (Prinzmetal's) angina results from transient coronary artery spasm. Treatment includes calcium-channel blockers (CCBs), nitrates, smoking cessation and trigger modification. Symptoms refractory despite medical management remain challenging.[1-3]

Stellate ganglion block (SGB) temporarily interrupts cervical sympathetic signaling and may influence coronary vasomotor tone and ischemic pain pathways. Evidence supporting its use for refractory vasospastic angina remains limited.[5] We describe SGB as a diagnostic and therapeutic adjunct before surgical sympathectomy.

CASE PRESENTATION

A 63-year-old woman had three years of refractory vasospastic angina without fixed obstructive disease. Acetylcholine provocation produced >80% epicardial constriction and severe chest pain, both reversed by intracoronary nitroglycerin.

Despite CCBs and long-acting nitrates, symptoms progressed to constant chest pain requiring 5–9 nitroglycerin sprays daily. Chronic hypotension complicated rescue therapy. Cardiology requested SGB to assess symptomatic response before considering surgical sympathectomy.

ULTRASOUND-GUIDED LEFT SGB

Under ultrasound guidance at C6, the stellate ganglion region, longus colli muscle, and surrounding vascular structures were identified. A 25-gauge spinal needle was advanced in-plane to the transverse process, then withdrawn slightly before injection of 3 mL 1% lidocaine.[4] No corticosteroid was used because the procedure was diagnostic.

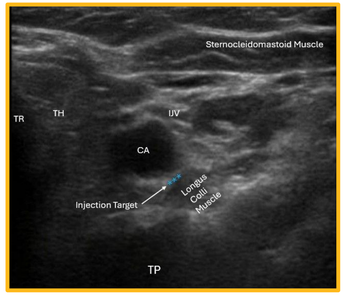


Figure 1: Ultrasound image showing the injection target and adjacent anatomy.
CA, carotid artery; IJV, internal jugular vein; TH, thyroid; TR, trachea; TP, transverse process.

TREATMENT COURSE & CLINICAL RESPONSE

Treatment Stage	Symptoms and Clinical Course
1. Pre-SGB	Constant chest pain despite medical therapy. Nitroglycerin use: 5–9 sprays daily.
2. Initial response to SGB	Near-complete patient-reported symptom relief lasting approximately one month
3. Symptom recurrence and surgical evaluation	Milder symptoms recurred. Nitroglycerin use remained below baseline at 4-5 spays daily. The temporary relief from SGB supported decision to perform surgical sympathectomy.
4. Bilateral T3-T4 thoracoscopic sympathectomy	Early postoperative pleuritic discomfort and an oxygen requirement prompted cardiac evaluation, with no evidence of myocardial injury. No daytime oxygen was required at discharge.
5. Three months after sympathectomy	Patient-reported 70% improvement with substantially increased activity. Angina persisted with activity and fatigue but was markedly improved. Nitroglycerin use decreased to no more than once daily, and not every day. Chronic antianginal therapy consisted of isosorbide mononitrate alone.

DISCUSSION

Temporary improvement after local-anesthetic-only SGB supported a possible sympathetic contribution to this patient's symptoms and informed the multidisciplinary decision to pursue sympathectomy.

For pain physicians, this case illustrates a potential role for SGB in evaluating symptomatic response to sympathetic blockade when angina persists despite medical therapy. Symptom relief alone does not establish reduced myocardial ischemia or validate SGB as a predictor of surgical success.

The 2023 JCS/CVIT/JCC guideline states that SGB and/or thoracic sympathectomy may be considered for refractory or severe vasospastic angina (Class IIb, level C).[5] This limited recommendation supports individualized multidisciplinary consideration.

LIMITATIONS

This case cannot establish causality, predictive validity, or generalizable safety. Outcomes relied on patient-reported symptoms, activity, and medication use. Follow-up was limited to three months after surgery. Further studies are needed to define patient selection, durability, and safety.

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