Teachable Moment

Supervised Exercise Therapy for Peripheral Artery Disease

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A Story From the Front Lines

A 62-year-old woman with hypertension, hyperlipidemia, coronary artery disease, and 7.5–pack-year smoking history presented to cardiology clinic with bilateral, aching leg pain triggered by walking and relieved by rest. After several months of worsening pain, she became unable to walk to her mailbox without symptoms. She had no pain at rest or nonhealing extremity wounds. Lower extremity pulses were nonpalpable. Ankle-brachial indices were obtained (right: 0.81, left: 0.72), indicating the presence of peripheral artery disease (PAD). Medical therapy consisting of aspirin, 81 mg, and a high-intensity statin was prescribed in addition to smoking cessation counseling. The patient was referred to interventional cardiology for peripheral angiography with possible revascularization.

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After 3 months of lifestyle modification and medical therapy, claudication symptoms had not improved and peripheral angiography demonstrated severe bilateral PAD. She underwent left superficial femoral artery, left popliteal artery, and right superficial femoral artery drug-eluting stent placement. At 6-month follow-up, the patient had stopped smoking and noted improved symptoms. However, she was not at her baseline daily physical activity levels due to lingering claudication symptoms.

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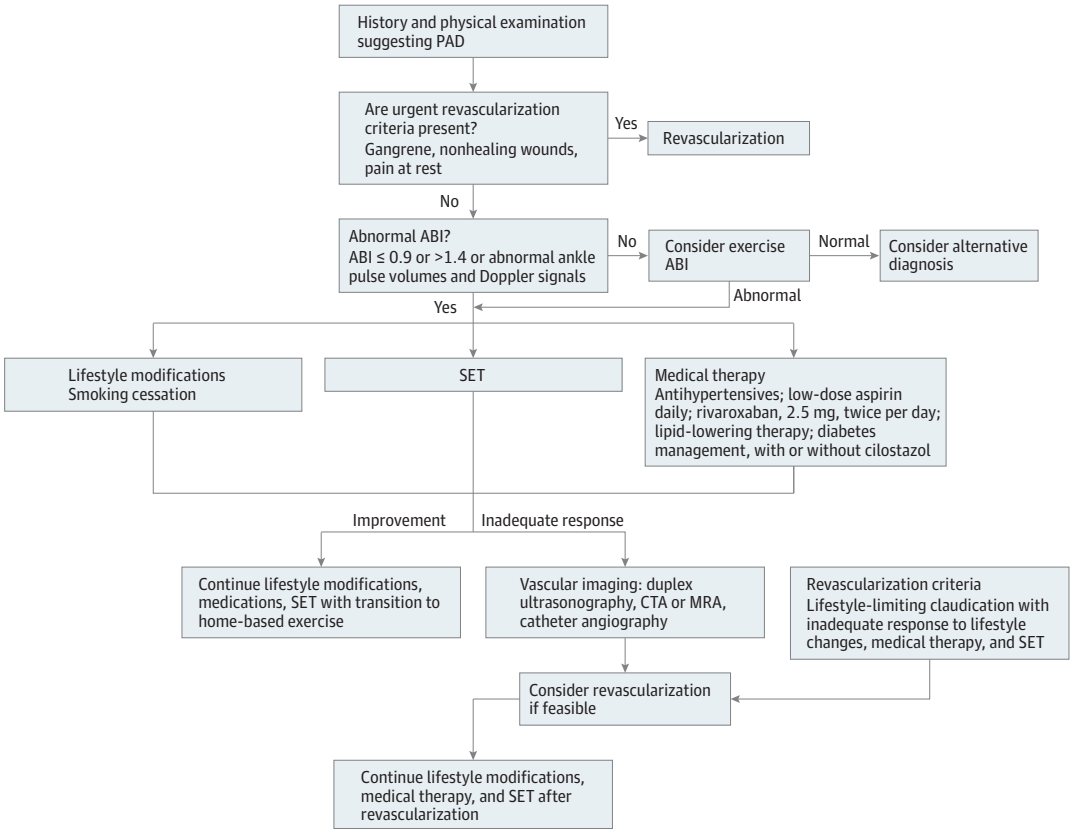
In this clinical vignette, the patient was appropriately diagnosed with PAD and initiated medical treatment, including aspirin, high-intensity statin, and advised on tobacco cessation. However, she was referred for peripheral angiography before discussion of exercise therapy and before reassessment of symptom burden after lifestyle/medical interventions, which is discordant with guideline recommendations. Current multisociety guidelines provide class 1A recommendation for supervised exercise therapy (SET) to improve symptoms and quality of life and class 1B-R recommendation for SET before revascularization.[1] Our omission of any discussion of exercise therapy before revascularization reflects a missed

Figure. Peripheral Artery Disease Management Algorithm



ABI indicates ankle-brachial index; CTA, computed tomography angiography; MRA, magnetic resonance angiography; PAD, peripheral artery disease; SET, supervised exercise therapy.

opportunity to either avoid an intervention or augment its effects (**Figure**).

SET is a structured program conducted in a medical facility supervised by a physician or advanced practice provider and implemented by clinical exercise physiologists or nurses.[1] Patients perform progressive activities designed to induce moderate to maximum claudication symptoms with intermittent rest intervals, with future sessions aimed at increasing the level of exertion.[1] A typical SET protocol consists of 8- to 10-minute intervals at a comfortable speed on the treadmill. If moderate or severe pain occurs, the patient stops and rests. When ready, they restart walking and repeat for a total training time of 30 to 45 minutes out of the 60-minute session. Intensity can be adjusted by increasing treadmill speed or incline to induce claudication symptoms, and the subsequent session is initiated at the previous speed/grade. Sessions occur 3 times weekly for 12 weeks. Properly conducted, SET is a more effective intervention than providing general recommendations for exercise. In this vignette, the patient was neither referred for SET nor given exercise recommendations.

SET can be effective both with or without stent revascularization (ST). In the CLEVER trial, SET was associated with increased walking time (5.8 minutes) compared to medical therapy (1.2 minutes) and ST (3.7 minutes).[2] Additionally, in the ERASE trial, SET plus ST (vs SET alone) was superior for increasing maximum walking distance, pain-free distance, and quality of life.[3] The evidence demonstrates that our patient's functional status would have been maximized had she been referred for SET with or without revascularization.

Despite robust trial evidence, SET utilization is extremely low. From 2017 to 2018, 129 699 patients were diagnosed with intermittent claudication, and only 1735 (1.3%) used SET.[4] This low utilization may result from a low referral rate and barriers to SET participation, including patient time commitment, out-of-pocket costs, and availability. Structured, community-based exercise programs are an alternative modality for patients with recognized barriers to SET. A home-based program that incorporated weekly coaching via telephone led to improved 6-minute walking distance in patients with PAD.[5] While replicating the intensity of SET in the community setting may be challenging, this option may improve adherence to exercise recommendations.

ARTICLE INFORMATION

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