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The Importance of Early Endovascular Intervention and Guideline-Based Cardiac Rehabilitation in Managing Type-B Aortic Dissection

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Abstract

Background:

Type-B aortic dissection (TBAD) is traditionally managed with optimal medical therapy; however, contemporary data show a survival benefit from early thoracic endovascular aortic repair (TEVAR) and emerging—but still fragmented—guidance on post-dissection exercise prescription.

Case Synopsis:

We report a 76-year-old woman with extensive TBAD extending to the distal left iliac artery. She was deemed a poor surgical candidate and treated medically. On hospital day 5, she suffered sudden cardiac arrest shortly after a low-intensity cardiac rehabilitation (CR) session. Autopsy suggested retrograde flap propagation triggered by exertional haemodynamic stress.

Key Messages

Need for Early Endovascular Intervention

Registry analyses demonstrate that, even in “uncomplicated” TBAD, TEVAR confers a 32% relative reduction in long-term mortality compared with medical therapy alone.

Our case underscores that anatomical complexity and frailty do not always preclude intervention; a proactive, multidisciplinary evaluation may identify candidates for hybrid or limited-landing-zone techniques before catastrophic extension.

Guideline-Based (Not Generic) Rehabilitation

Existing CR literature in aortic-dissection survivors documents favourable functional gains with meticulous blood-pressure monitoring and workloads ≤ 3 –5 METs, but highlights major evidence gaps regarding timing, progression, and surveillance imaging.

We propose a stepped protocol:

- Confirm aortic stability on repeat CTA or TEE.
- Initiate supervised ambulation at <20 bpm above resting heart rate and systolic BP <140 mmHg.
- Escalate workload by ≤ 0.5 MET per session, with weekly imaging or sooner if symptoms occur.

Conclusions:

Early TEVAR should be actively reconsidered—even in borderline surgical candidates—to forestall haemodynamic-triggered propagation. When CR is indicated, programmes must be tailored to TBAD-specific haemodynamic thresholds with imaging-guided checkpoints. Bridging current evidence gaps will require prospective trials integrating vascular, cardiac-rehabilitation, and imaging expertise.