Endoscopic vs. Open Vein Harvest For Bypasses: What Are The Advantages And Disadvantages Of Each?

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Introduction

- ↑ Endovascular surgery → ↓ open surgical bypass
- Bypass is still required for many patients with PAD
- Autologous vein is preferred for ↑ patency and ↓ infection
- Traditional open vein harvest (OVH) requires lengthy incision
- In 1996 cardiac surgery reported endoscopic vein harvest (EVH)

Cardiac Data: OVH vs. EVH

- Early prospective randomized trial reported wound complications (Allen, et al.1998):
  - OVH 19%
  - EVH 4%
- In 2005 EVH recommended as standard of care

How About Lower Extremity Bypass

Advantages OVH

- We all know how to do it → No learning curve
-Performed under direct visualization
- Side branches are ligated with suture and divided sharply
- Long term patency of the bypass is established

Disclosure

• None
**Disadvantages of OVH**

- Large wound or many “skip” wounds → ↑ morbidity
- PAD patients ↑ risk for wound complications
  - OVH wound complication rate → 22-44% (Teixeira et al. 2014)
  - Poor healing due to ischemia, diabetes mellitus, renal failure, etc.
  - Includes hematoma, dehiscence, infection (Teixeira et al. 2014)
  - ↑ LOS

**Advantages of EVH**

- No long incisions
  - Performed via one or two small incisions
- Limiting size of incision ↓ wound complications
- Standard of care in cardiac surgery
- ↓ Morbidity

**Disadvantages of EVH**

- Learning curve
- Electro-cautery is used to divide branches
- Need longer vein compared to cardiac surgery
- Concern about inferior primary patency
- Variable wound complications (Khan et al. 2016)

**What is the recent PAD data?**

- A review of SVS VQI 2003-2013 of 5066 patients (Teixeira et al., 2014)
- Continuous OVH incision 48.6% vs. EVH 12.7%
- Primary patency 69.5% for continuous vs. 58.6% for EVH (P=.001)
- EVH is an independent risk factor for ↓ 1-year primary patency
- LOS due to wounds was not significantly different

**Effect on Primary Patency**

- EVH may reduce primary patency with no change in wound complications.

**Reasons for Decreased Primary Patency**

- Inexperienced operator
- ↑ electrocautery injury
- ↑ in vein manipulation
  - OVH → “No Touch Technique”
- Need a longer conduit
Guidelines!

• Inexperienced with EVH → work with cardiac PA's

• ↑ percutaneous procedures → ↓ GSV bypasses → ↓ volume to master

• If PA not available or small vein → Recommend OVH

• The PA ↓ the labor required of the vascular surgeon

• Close surveillance follow-up with arterial ultrasound and ABI/PVR

Thank You