



Endoscopic Radial Artery Harvesting With Reusable Retractor and Open CO₂ System

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BACKGROUND

Radial artery harvesting is a part of multiarterial coronary artery bypass grafting (CABG). Traditional open methods are associated with larger incisions, greater morbidity, and prolonged recovery. We demonstrate a sustainable and reproducible endoscopic harvesting technique using a reusable retractor and open CO₂ system.

METHODS

Between September 2019 and May 2025, 188 radial arteries were harvested endoscopically.



Instruments for endoscopic radial artery harvesting

Key steps included:

- Patient arm abducted at 90°
- Tourniquet inflated to 250 mmHg
- 2 cm skin incision proximal to the wrist
- Use of reusable endoscopic retractor and LigaSure for dissection
- CO₂ insufflation for optimal visualization
- Distal control with endoloop and long scissors, avoiding extra incisions
- Arteries stored in papaverine-verapamil solution prior to grafting

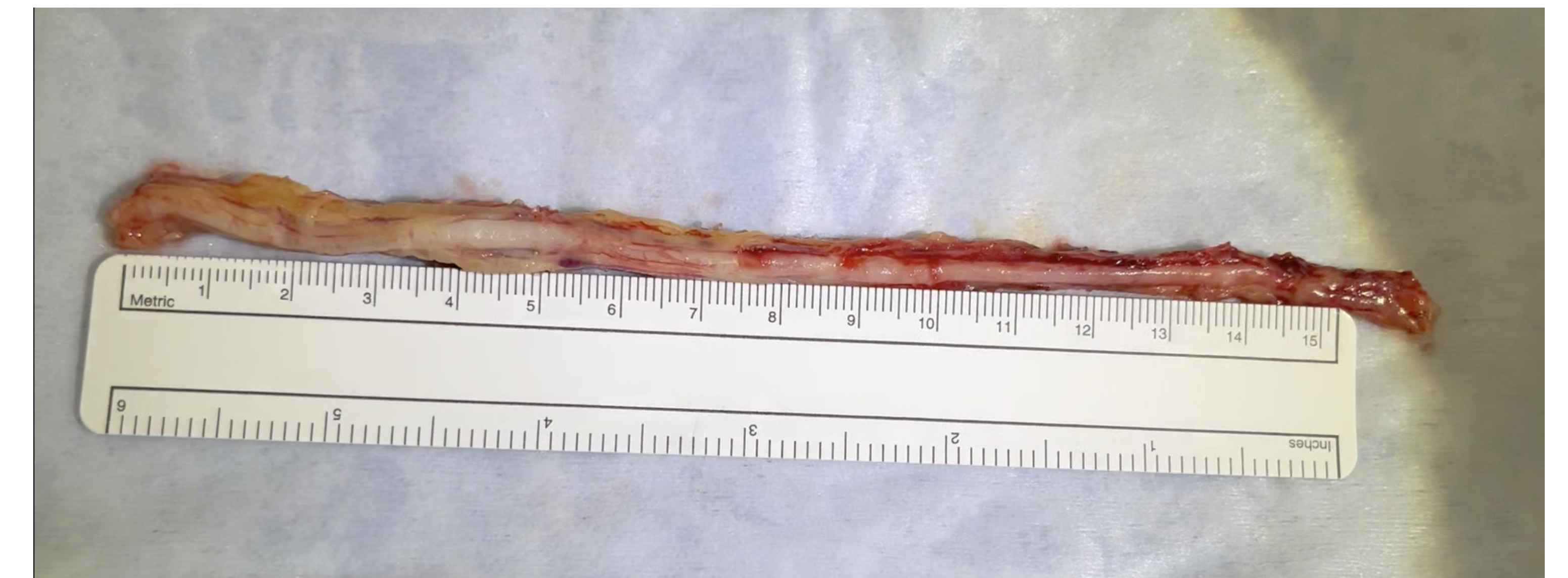
Harvested radial arteries consistently exceeded 15 cm in length, with harvesting time under 20 minutes.



Patient after TCRAT-CABG & ERAH

RESULTS

There were no intraoperative or postoperative complications. The technique proved reproducible and safe, with minimal trauma and excellent visualization. All grafts were successfully used for CABG without harvest-site morbidity.



Radial artery after harvesting

CONCLUSIONS

Endoscopic radial artery harvesting with a reusable retractor and open CO₂ system offers:

- Reduced tissue trauma and improved cosmesis
- Enhanced efficiency and graft quality
- Lower cost due to reusable instruments
- Elimination of unnecessary additional incisions

This technique combines safety, reproducibility, and sustainability—making it an attractive alternative to disposable endoscopic kits and open harvesting.