

Endoscopic-assisted atraumatic coronary artery bypass

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Background

- ❁ Trauma of CABG can be minimized by robot assisted surgery (endoscopic LITA mobilization, 3-5mm port access)
- ❁ The advent of DES: the hybrid approach offers an attractive option for complete revascularization
- ❁ Further development: wide spread multivessel robot assisted CABG can be done routinely

EndoACAB & Hybrid approach

- ❁ The long term patency of PCI is relatively limited compared to LITA to LAD (20 year patency vs. ? years)
- ❁ Posterior and inferior vessels cannot be approached via minimally invasive approach
- ❁ The best of both worlds - Hybrid approach
 - ▣ *LITA to LAD*
 - ▣ *PCI with DES to posterior & inferior vessels*

Technique

- AESOP assisted LITA mobilization
- 3-5 cm Mini-thoracotomy
- OPCAB technique
- Minimal rib spreading
- Complementary procedure (Hybrid stenting)

Why Hybrid approach?

- Excellent long term patency of LITA to LAD (Unsurpassed by any alternative procedure)
- No pump related complications/Less trauma
- Complete revascularization
- No pain - minimal rib retraction
- Cosmetic considerations
- Less overall morbidity & shorter hospitalization

Robotic assisted mitral valve surgery

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Surgical Technique

- ✿ 5 cm "Mini" Thoracotomy
- ✿ Endoscopic assisted vision
- ✿ Voice activated robotic arm (AESOP 3000) to direct camera
- ✿ Cardiopulmonary bypass through femoral cannulation

Robotic Valvular Surgery

- ✿ Suture placement
- ✿ Chordae reconstruction
- ✿ Leaflet resection
- ✿ Knot tying
- ✿ Valve ring implantation
- ✿ Prosthetic valve implantation
- ✿ Tricuspid valve repair
- ✿ Ablative surgery for AF

Advantages of Robotic Assisted Valve Surgery

- "Solo" surgery without the need for additional assistance (cost efficient)
- Smaller incision
- Reduction in bleeding, ventilatory times, blood transfusions
- Faster recovery
- Good cosmetics