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
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