Transanal total mesorectal excision

ta-TME

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Background

![Graph showing the changing relationship between total rectal excision and sphincter conservation. St. Mark's Hospital 1948 to 1987.](image)

**Figure 23-1.** The changing relationship between total rectal excision and sphincter conservation. St. Mark’s Hospital 1948 to 1987.

Courtesy of Prof. John Nicholls
TME - the principles

• Complete excision of the mesorectum (no conical effect)
• Clear DRM (> or 1 cm), CRM (> or = 1 mm)
• Pelvic nerve preservation
• Sphincter preservation
TME
TME
Open TME

Seminal vesicles
TME specimen
TME – surgical pathology

1 2 3

Courtesy of Prof. Christoph Maurer
TME – laparoscopic vs robotic approach

• Mini-invasive approach: visualization / exposure
  – fixed trocar positions, limited retraction, rectum manipulation,
  – prostate and pelvic bone

• Imprecise distal margin determination

• Distal stapling

• > 2 stapler firings, increased anastomotic leak rate

• Laparoscopic conversion rate up to 10 - 17 %, robotic up to 6 %

• Costs of the robotic system
Robotic TME in a man

Right pelvic plexus
TME - open perineal approach

• Limited distance and exposure, < 5cm
• Limited quality of resection
• Risk of specimen fragmentation
ta-TME - first paper in 2009

Surg Endosc
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NEW TECHNOLOGY

NOTES transanal rectal cancer resection using transanal endoscopic microsurgery and laparoscopic assistance

Patricia Sylla · David W. Rattner · Salvador Delgado · Antonio M. Lacy
ta-TME principles

Narrow pelvis is not a limitation

Excellent visualization of the residual tumor to choose distal margin for anastomosis

Dissection/mobilisation of the distal rectum under direct endoscopic vision

Single stapled anastomosis

Double approach abdominal and transanal

Transanal specimen extraction
Transanal TME

Courtesy of Dr. Nicolas Buchs
Transanal TME in a woman
ta-TME expected results

- Adequate oncological outcome with clear CRM and DRM
- Low conversion rate
- Reduced anatomoses leak rate
- Better pelvic nerve preservation
- Shorter operative time if two teams
- Caution: risk of urethral lesion, rectal perforation, air embolism
ta-TME international registry, 720 cases

Conversion rate lap -> open 6.3 %, perineal conversion rate 2.8 %

Overall leakage rate 6.3 % (laparoscopic 7 – 13 %)

CRM+ 2.4 % (laparoscopic 6.3 %, robotic 5.1 %)

3 urethral injuries during ta-TME

2 intraoperative rectal perforations and 12 at histological examination

Potential sexual function improvement by using transanal mesorectal approach for laparoscopic low rectal cancer excision

Arnaud Pontallier\textsuperscript{1,2} · Quentin Denost\textsuperscript{1,2} · Bart Van Geluwe\textsuperscript{1,2} · Jean-Philippe Adam\textsuperscript{1,2} · Bertrand Celerier\textsuperscript{1,2} · Eric Rullier\textsuperscript{1,2}

ta-TME in a man
Which technique for TME?
Hype Cycle and Technology Adoption Lifecycle Plotted together

- **Innovators**
- **Early Adopters**
- **Early Majority**
- **Late Majority**
- **Laggards**

"The Chasm"
Robotic ta-TME, the following step?