TaTME in Rectal CA: A Review and Update

by
John A. Griffin, MD, FACS, FASCRS
October 27, 2017
I have no disclosures!
Goals of Talk

> Learn more about taTME
  • Problem of Colorectal CA
  • History of Rectal CA
  • Recent Literature
> Technique of taTME
> TaTME literature
> Use of taTME
What is taTME?

> Transanal Total Mesorectal Excision (taTME)—an emerging sphincter sparing technology!
> Used in mid to low rectal CA
> Uses a combination of the latest technology
  • Laparoscopic (robotic) bowel resection technology
  • Transanal excision (TEMS and TAMIS) technology
  • Stapler technology
> Used in the narrow confines of the pelvis
  • Obese
  • Men
  • Distal lesions
Where did TaTME come from?

> Obese
  • Visceral
> Males
> Narrow pelvis
  • Android
> Mid to low rectal CAs
  • Distal 1/3
Problem of Colorectal CA

> BLUE STAR…not brown ribbon!
Problem of Colorectal CA

> Colorectal CA is the **THIRD** most common CA **diagnosed**

> ACS ESTIMATES for 2017:
  - 95,520 NEW cases of Colon CA
  - 39,910 NEW cases of Rectal CA

> Lifetime **RISK**
  - 4.7% (1 in 21) for men
  - 4.4% (1 in 23) for women
Problem of Colorectal CA

> 50,260 Colorectal CA related **DEATHS** in 2017
  - SECOND in women and THIRD in men

- Decreasing secondary to colonoscopy!
Problem of Colorectal CA

Based on data from SEER 18 2007–2013. Gray figures represent those who have died from colon and rectum cancer. Green figures represent those who have survived 5 years or more.

Percent Surviving 5 Years
64.9%
Problem of Colorectal CA

> Colonoscopy can prevent colorectal CA!

> **BUT** it can also diagnose it…the first step to treatment
Problem of Colorectal CA

> **STAGE** of the CA
  - Decides how to treat the CA
  - Determines success of the treatment

> **TNM System**
  - **T**—Tumor
  - **N**—Nodes
  - **M**—Metastasis

> Colon CA and Rectal CA are different!
# Problem of Colorectal CA

<table>
<thead>
<tr>
<th></th>
<th>COLON CA</th>
<th></th>
<th>RECTAL CA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage I</td>
<td>92%</td>
<td>Stage I</td>
<td>87%</td>
</tr>
<tr>
<td>Stage IIA</td>
<td>87%</td>
<td>Stage IIA</td>
<td>80%</td>
</tr>
<tr>
<td>Stage IIB</td>
<td>63%</td>
<td>Stage IIB</td>
<td>49%</td>
</tr>
<tr>
<td>Stage IIIA</td>
<td>89%</td>
<td>Stage IIIA</td>
<td>84%</td>
</tr>
<tr>
<td>Stage IIIB</td>
<td>69%</td>
<td>Stage IIIB</td>
<td>71%</td>
</tr>
<tr>
<td>Stage IIIC</td>
<td>53%</td>
<td>Stage IIIC</td>
<td>58%</td>
</tr>
<tr>
<td>Stage IV</td>
<td>11%</td>
<td>Stage IV</td>
<td>12%</td>
</tr>
</tbody>
</table>
Problem of Colorectal CA
Problem of Colorectal CA

Percent of Cases & 5-Year Relative Survival by Stage at Diagnosis: Colon and Rectum Cancer

SEER 18 2007–2013, All Races, Both Sexes by SEER Summary Stage 2000

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NATIONAL CANCER INSTITUTE
Surveillance, Epidemiology, and End Results Program
History of Rectal CA

> **FIRST** recorded surgical resection for rectal CA—1826—Jacques Lisfranc

> Before ANESTHESIA and ASCEPTIC techniques were developed

> Success measured by having the patient leave the hospital!

Mortality 100%
History of Rectal CA

> FIRST ANESTHESIA—1846—William Thomas Green Morton

> ASCEPTIC technique—1867—Joseph Lister
History of Rectal CA

> **FIRST** transabdominal resection—1879—Carl Guessenbauer (Henri Hartmann—Hartmann procedure!)

> Mortality 21%
> Recurrence 80%
History of Rectal CA

Sir Ernest Miles
A METHOD OF PERFORMING ABDOMINO- 
PERINEAL EXCISION FOR CARCINOMA 
OF THE RECTUM AND OF THE 
TERMINAL PORTION OF 
THE PELVIC COLON.

By W. Ernest Miles, F.R.C.S. Eng., L.R.C.P. Lond.,
SURGEON TO THE CANCER HOSPITAL, BROMPTON, S.W., AND 
TO THE GORDON HOSPITAL FOR DISEASES OF THE 
RECTUM, VAUXHALL BRIDGE ROAD, S.W.

Lancet 1908
History of Rectal CA

> **5 essentials** to APE (now APR)

> 1. Resection of the rectosigmoid
> 2. Resection of the mesorectum
> 3. Removal of the lymph nodes with the blood supply
> 4. Wide perineal resection with removal of the anus
> 5. Creation of a colostomy
History of Rectal CA

> Abdominoperineal resection (APR)—William Ernest Miles
History of Rectal CA

> Abdominoperineal resection (APR)—William Ernest Miles publication 1908

> Mortality 41.6% (up from 21%)
> Recurrence 29.5% (down from 80%)

> Replaced perineal excision…the previous standard of care!
History of Rectal CA

> **Sphincter preservation**
  - Questioned the morbidity
  - Questioned the need for all rectal cancers

> **FIRST** Anterior resection—Claude Dixon
  - 1939 5-year survival of 45-50% (vs 25-35%)
  - 1948 5-year survival 64%
  - Rectal CAs between 6cm and 20cm
    - Mortality of 2.6% (down from 41.6%)
History of Rectal CA

[Diagram of the rectum and anal canal with labels for Rectum, Dentate line, Anal Canal, Internal hemorrhoid, External hemorrhoid]
History of Rectal CA

> **FIRST** Low anterior resection (LAR)—1970—Alan Parks

  - Standard of care for lesions between dentate line and 6 cm
    - Coloanal anastomosis…
      - now **staplers**

  - Challenged distal margin
    - 5 cm
    - 2 cm

  - Standard of care!
History of Rectal CA

> Transabdominal transanal (TATA) proctosigmoidectomy—1982—Gerald Marks

> Combined abdominal and perineal approach to rectal CA by exploiting the natural plain
  • Internal anal sphincter
  • External anal sphincter
History of Rectal CA
History of Rectal CA

> **Total Mesorectal Excision (TME)** in 1982—R.J. Heald standardized the resection of Rectal CA
> 5-year survival 80% (64%)
> Recurrence 3.6% (29.5%)
> Standard of care!
History of Rectal CA

> **Circumferential Resection Margins (CRM)—1986—**
Quirke et al identified a 27% CRM + rate
- Secondary to “blunt dissection”
- 85% of CRM + PTs went on to develop local recurrences

> **Confirmed—2002—** Birbeck et al identified a rate of 28.2%
- CRM + 38.2% developed local recurrences
- CRM - 9.98% developed local recurrences
History of Rectal CA

> Ng et al showed the effect on 5-year survival—1993
  • CRM - 72%
    – Local recurrence of 84%
  • CRM + 29%
    – Local recurrence of 38%

> Mechanism—Havenga et al—1996
  • Recto-sacral fascia creates a double thickness structure…
    “sharp dissection” is now the standard of care!
History of Rectal CA
History of Rectal CA

> 1995—Enker et al—246 PTs and based results on stage
> Overall survival—74.2%
> 5-Year survival (previously 80%)
  • Stage II—86.4% (LRR 3.0%) (3.6%)
  • Stage III—64% (5.3%)
> 2000 UPDATE
  • Stage II—87.3% (LRR 2.5%)
  • Stage III—66.3% (10.5%)
# History of Rectal CA

## Standardized overall survivals

<table>
<thead>
<tr>
<th>Institution</th>
<th>Survival Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSKCC</td>
<td>69.6%</td>
</tr>
<tr>
<td>NHH</td>
<td>61.6%</td>
</tr>
<tr>
<td>NCC</td>
<td>75.3%</td>
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</table>

## Standardized local recurrences

<table>
<thead>
<tr>
<th>Institution</th>
<th>Recurrence Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>9.1%</td>
</tr>
<tr>
<td></td>
<td>3.5%</td>
</tr>
<tr>
<td></td>
<td>9.4%</td>
</tr>
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</table>

## NON Standardized

<table>
<thead>
<tr>
<th>Region</th>
<th>Recurrence Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norway</td>
<td>43.7%</td>
</tr>
<tr>
<td>CCCW</td>
<td>41.9%</td>
</tr>
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</table>

## NON Standardized

<table>
<thead>
<tr>
<th>Region</th>
<th>Recurrence Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>41.5%</td>
</tr>
<tr>
<td></td>
<td>38.8%</td>
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</tbody>
</table>

### 1999!
History of Rectal CA

> WHAT could possibly be left!

- Radiation
- Chemotherapy
- Laparoscopy
History of Rectal CA

> Radiation and Chemotherapy
  • Post-operative was the standard of care

> Dutch Colorectal Cancer Group
  • Pre-op XRT with TME compared to TME
  • No change in complications and survival BUT
  • Recurrences were 2.4% vs 8.2%

> German Rectal Cancer Study Group
  • Compared pre-op and post-op in locally advanced rectal CA
  • Improved local control without a survival difference
History of Rectal CA

> **Laparoscopy**—2002—Clinical Outcomes of Surgical Therapy (COST) Study Group—**Non-inferiority Study**

> Designed to test the hypothesis that the lap approach was as effective as and not worse than the open approach

- 48 Centers
- 66 Surgeons
- 435 lap cases vs 428 open cases
History of Rectal CA

> After 4.4 years of follow up short-term follow up favored the laparoscopic cases
  
  • **Conversion rate** of 21%
  • Length of stay 5.6 vs 6.4 days
  • Decreased analgesics
    IV 3.2 vs 4.0 days
    PO 1.9 vs 2.2 days

  No difference in survival and recurrence (at 3- and 5-years)!
History of Rectal CA

> Laparoscopy—2005—MRC CLASSICC trial group in UK—colon and rectal CAs
  • 273 lap cases vs 140 open cases
  • Conversion rate 29%
  • 2007 3-year survival and disease-free survival
  • 2010 5-year survival and disease-free survival
  • Both of these study showed worse outcomes with conversion!
Recent Literature

Effect of Laparoscopic-Assisted Resection vs Open Resection of Stage II or III Rectal Cancer on Pathologic Outcomes
The ACOSOG Z6051 Randomized Clinical Trial

James Fleshman, MD; Megan Branda, MS; Daniel J. Sargent, PhD; Anne Marie Boller, MD; Virgilio George, MD; Maher Abbas, MD; Walter R. Peters Jr, MD; Dipen Maun, MD; George Chang, MD; Alan Herline, MD; Alessandro Fichera, MD; Matthew Mutch, MD; Steven Wexner, MD; Mark Whiteford, MD; John Marks, MD; Elisa Birnbaum, MD; David Margolin, MD; David Larson, MD; Peter Marcello, MD; Mitchell Posner, MD; Thomas Read, MD; John Monson, MD; Sherry M. Wren, MD; Peter W. T. Pisters, MD; Heidi Nelson, MD
Recent Literature

Lap resection

> Safe and feasible

Oncologic efficacy

> Not definitively established

ACOSOG Z6051 RCT

> Determine whether lap resection for rectal CA is noninferior to open

> Composite pathology-based endpoint
  - TME completeness
  - Distal resection margin
  - CRM

JAMA.2015;314(13):1346-1355
Recent Literature

Inclusion

> 18 years or older
> BMI 34 or less
> Performance score less than 3
  - Eastern Cooperative Oncology Group
> Histological AdenoCA at or below 12cm
  - Rigid proctoscopy
> Clinical stage II, IIIA, or IIIB
  - MRI or ERUS
> Neoadjuvant therapy

JAMA.2015;314(13):1346-1355
Recent Literature

October 2008 to September 2013

> 462 PTs were evaluable
  • LAR 76.7%
  • APR 23.3%

> TME completeness 93.5%
  • Complete 77.1%
  • Nearly Complete 16.5%

> Distal resection margin 98%

> CRM 90%

JAMA.2015;314(13):1346-1355
Recent Literature

October 2008 to September 2013

> 462 PTs were evaluable
  - LAR 76.7%
  - APR 23.3%

> TME completeness 93.5%
  - Complete 77.1%
  - Nearly Complete 16.5%

> Distal resection margin 98%

> CRM 90%

JAMA.2015;314(13):1346-1355
Recent Literature

Conversion 11%

Time
> Lap 266.2 minutes
> Open 220.6

Success
> Lap 81.7%
> Open 86.9%

Recent Literature

NOT significant

> “…failed to meet criterion for noninferiority for pathologic outcomes”

Confirmed with a review of the top 10 accruing surgeons
> 271 patients
> Lower success in 8 out of 10

JAMA.2015;314(13):1346-1355
Recent Literature

JAMA.2015;314(13):1356-1363
JAMA.2015;314(13):1346-1355
Recent Literature

Effect of Laparoscopic-Assisted Resection vs Open Resection on Pathological Outcomes in Rectal Cancer
The ALaCaRT Randomized Clinical Trial

Andrew R. L. Stevenson, MB BS, FRACS; Michael J. Solomon, MB BCh, MSc, FRCSI, FRACS;
John W. Lumley, MBBS, FRACS; Peter Hewett, MB BS, FRACS; Andrew D. Clouston, MB BS, PhD, FRCPA;
Val J. Gebski, MStat; Lucy Davies, MSc; Kate Wilson, BA, MPH; Wendy Hague, MB BS, PhD, MBA;
John Simes, BSc (Med), MB BS, SM, FRACP, MD; for the ALaCaRT Investigators

JAMA.2015;314(13):131:1356-1363
JAMA.2015;314(13):1346-1355
Recent Literature

**ALaCaRT**

> Australasian Laparoscopic Cancer of the Rectum Trial

**Advantages of lap**

> Morbidity and LOS

> Not necessarily oncologic

**Aim**

> Determine whether lap rectal resection was noninferior to open

*JAMA.2015;314(13):131:1356-1363*
Recent Literature

Inclusion

> 18 years or older
> Histologic AdenoCA within 15cm
> Performance status score of 2 or less
  • Life expectancy of at least 12 weeks
> T1 to 3 tumors
  • T4 excluded but M1 not excluded
> Neoadjuvant therapy was optional
> Noninferiority declared for difference
  • 8% (instead of 6%)

JAMA.2015;314(13):131:1356-1363
Recent Literature

March 2010 to November 2014
> 475 PTs

Success 85% overall
> Lap 82%
> Open 89%

Conversion 9%
Leak 7%

JAMA.2015;314(13):131:1356-1363
Recent Literature

Complete TME (nearly not included)
> Lap 87%
> Open 92%

CRM
> Lap 93%
> Open 97%

Distal margin 99% in both

*JAMA.2015;314(13):131:1356-1363*
Recent Literature

Post hoc test for superiority
> STILL favored open

Excluding T4
> Lap 83%
> Open 89%

According to treatment received
> Lap 83%
> Open 87%
Recent Literature

Other significant findings

Time
> 210 vs 190 minutes

EBL
> 100 vs 150ml

Incision length
> 6.0 vs 18.0cm

ROBF
> 1 vs 2 days

JAMA.2015;314(13):131:1356-1363
Recent Literature

Noninferiority NOT established

“The inability to establish noninferiority suggests surgeons should be cautious”

Lap less successful in:
> Neoadjuvant therapy
> Larger T3
> Higher BMI

JAMA.2015;314(13):131:1356-1363
Recent Literature

Noninferiority NOT established

“The inability to establish noninferiority suggests surgeons should be cautious (with laparoscopic cases)”

WHY?
What happens if we return to the anatomy?
What options do we have?

JAMA.2015;314(13):131:1356-1363
Anatomy

Horizontal portion of rectum

Rectum of Male in Situ

- Sigmoïd mesocolon
- Sigmoïd colon
- Recto-sigmoid junction
- Recto-vesical recess
- Peritoneal reflection
- Seminal vesicle
- Rectovesical ('Denonvilliers') fascia
- Rectum and pelvic fascia
- Coccyx
- Levator ani muscle (pelvis)
- Poborectalis part of levator ani
- Deep external anal sphincter
- Superficial external anal sphincter
- Subcutaneous external anal sphincter muscle
- Superficial perineal (Calleis') fascia
- Pubococcygeus (pubo-coccygeal) muscle (not shown)
- Inferior rectal (nervous) plexus
- Inferior hemorrhoidal (nervous) plexus
- Ductus deferens (cut)
- Ureter (cut)
- Urinary bladder
- Prostate
- Prostateal gland
- Central tendon of perineum
- Urogenital diaphragm
- Ischiocavernosus muscle and investing (Balfour's) fascia (partly cut away)
- Superficial transverse perineal muscle and investing fascia
- External oblique muscle (not shown)
- External oblique fascia (not shown)
- Rectus abdominis muscle (not shown)
- External rectus abdominis fascia (not shown)
- Internal oblique muscle (not shown)
- Internal oblique fascia (not shown)
- Transversus abdominis muscle (not shown)
- Transversus abdominis fascia (not shown)
- Rectus sheath (not shown)
- Transversalis fascia (not shown)
- Subcutaneous fat (not shown)

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Anatomy

Rectum of Male in Situ

- Sigmoid mesocolon
- Sigmoid colon
- Rectosigmoid junction
- Rectovaginal recess
- Peritoneal reflection
- Seminal vesicle
- Prostate
- Urethra (cut)
- Ureter (cut)
- Ureterovesical junction
- Urinary bladder
- Central tendon of penis
- Ischiocavernosus muscle and investing (Bulbospongiosus) fascia (partially cut away)
- Superficial transverse perineal muscle and investing fascia
- External anal sphincter
- Subcutaneous external anal sphincter muscle
- Superficial perineal (Colles') fascia
- Deep external anal sphincter
- Perineal part of levator ani
- Coccyx
- Median sacral crest
- Masseteric fascia
- Rectum and pelvic fascia
- Rectovesical (‘Denonvilliers’) fascia

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Anatomy

Rectum of Male in Situ

- Sigmoid mesocolon
- Sigmoid colon
- Rectosigmoid junction
- Rectovesical recess
- Symphysis pubis (pelvis)
- Coccyx
- Levator ani muscle (pelvis)
- Pelvicis part of levator ani
- Deep external anal sphincter
- Superficial external anal sphincter
- Subcutaneous external anal sphincter muscle
- Superficial perineal (Colles') fascia
- Ductus (ure) deferens (ext)
- Ureter (cut)
- Urinary bladder
- Prostate
- Central tendon of perineum
- Urogenital diaphragm
- Ischiocavernous muscle and investing (Balfour's) fascia (partially cut away)
- Superficial transverse perineal muscle and investing fascia

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Anatomy

Rectum of Male in Situ

- Sigmoid mesocolon
- Sigmoid colon
- Rectosigmoid junction
- Rectoviseral recess
- Peritoneal reflection
- Seminal vesicle
- Rectovesical (‘Duenhoffer’s’) fascia
- Rectum and rectal fascia
- Coccyx
- Levator ani muscle (pelvis)
- Poborectalis part of levator ani
- Deep external anal sphincter
- Superficial external anal sphincter
  - Subcutaneous external anal sphincter muscle
  - Superficial perineal (Colles’) fascia
  - Deep perineal (Colles’) fascia

- Ductus (ure) deferens (cut)
- Ureter (cut)
- Urinary bladder
- Prostate
- Central tendon of perineum
- Urogenital diaphragm
- Ischiocavernous muscle and investing (Balkema’s) fascia (partially cut away)
- Superficial transverse perineal muscle and investing fascia
Lap TME Resection
Lap TME Resection
Perineal TME Resection

**Rectum of Male in Situ**

- Sigmoid mesocolon
- Sigmoid colon
- Recto-sigmoid junction
- Rectovesical space
- Peritoneal recess
- Serosal recess
- Pelvic fascia
- Recto-vesical fascia
- Deep external anal sphincter
- Subcutaneous external anal sphincter
- Superficial perineal muscle
- Subcutaneous external anal sphincter
- Rectocolic fascia
- Prostatic fascia
- Recessus rectovesical
- Ureter (left)
- Ureter (right)
- Urethra
- Bladder (left)
- Bladder (right)
- Rectal fascia
- Vagina (left)
- Vagina (right)
- Uterus
- Sigmoid colon base (left)
- Sigmoid colon base (right)
- Sigmoid mesocolon
- Free rectal fascia layer
- Pelvic lymph nodes
- Sigmoid mesocolon

**Perineal TME Resection**
Perineal TME Resection

Rectum of Male in Situ

- Sigmoid mesocolon
- Rectosigmoid junction
- Rectoanal interspace
- Ureter (pelvic segment)
- Prostate
- Seminal vesicle
- Bladder
- Rectum and rectal fascia
- Levator ani
- Pubococcygeus
- Puborectalis muscle of Hesheari
- Deep external anal sphincter
- Deep external anal sphincter muscle
- Subcutaneous perineal fat
- Superficial perineal muscle
- Inguinal ligament
- Pubic symphysis
- Bladder neck
- Urethra
- External iliac veins
- Obturator internus muscle
- Iliacus
- Cauda equina
- Sacrum
- Coccyx
- Superficial perineal fat
- Perineal raphe

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Wouldn’t it be great to get to it from both directions!

> OPTIONS for laparoscopic cases (from above)
  - Open
  - Robotic

> OPTIONS (from below)
  - TATA
  - TEMS
  - TAMIS
TEMS

> Transanal endoscopic microsurgery (TEMS)—1984—Buess invented for the removal of infraperitoneal rectal polyps (and early cancers)
  • Rigid platform
  • and difficult!

Origins of TEMS
Professor Gerhard Buess
TAMIS

> Transanal minimally invasive surgery (TAMIS)
> TAMIS—Gelpoint Path
> Flexible platform with more mobility
Laparoscopic TATA (with TME) meets TEMS (TAMIS)!

> Transabdominal transanal (TATA) proctosigmoidectomy—1982—Gerald Marks

> Combined abdominal and perineal approach to rectal CA

> Laparoscopic proctectomy with taTME!
How is it done?

> 2 Set ups in the OR
  • Laparoscopic for abdominal
  • TaTME for perineal

Simple instruments

> Same as for a lap chole
  and a “platform”

Insufflation

> Continuous flow systems
How is it done?

**Two Surgeons vs One Surgeon**

> Set up in the OR
  
  • Same

**Outomes of a Single Surgeon-Based Ta-TME for Rectal CA (J Gastrointest Cancer 2017 Jul 13 electronic)**

> 27 cases
  
  > BMI 27.2
  
  > OR time 283 minutes
  
  > Complete and near complete mesorectums in 67% and 33%
  
  > LN harvest 26
  
  > Morbidity 33%  
  
  Adequate…safe and feasible!
TaTME Technique

5 Steps for standardization—Dr. Joep Knol

1. Perform a pursestring

> Gas tight
  • Pneumorectum

> Seal lumen
  • Washout
  • Contamination
TaTME Technique

2. Marking the line of dissection

> Future rectotomy
  • Sets distal margin
> Mark 6 o’clock
  • Sets orientation
> Start 5 o’clock
  • 7 o’clock if left handed
TaTME Technique

3. Full thickness dissection for $360^0$

> Establish TME plane
  • Sets CRM
TaTME Technique

4. Order of dissection

> Posterior
  • Anococcygeal ligament
to TME plane

> Anterior
  • Denonvillier’s fascia
    – Front
    – Back
  • Rectovaginal septum

> Lateral (be flexible
    and avoid pursestring)
TaTME Technique

WHAT A VIEW!
TaTME Technique

ENTRY POINT!

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Oct. 27, 2017
TaTME Technique

5. Extraction and reanastomosis

> Transanal

> Handsewn

> Staped
  • Red rubber

> Transabdominal

> Staped
  • EEA
  • Hemorrhoid Stapler
TaTME Technique
TaTME Technique
TaTME Technique
TaTME Technique

46 y/o Male with Rectal CA 4cm from verge that is 3/4 circumference of rectum and mostly posterior, ASA II, BMI 34, and MRI shows T3bN0M0

Colorectal Disease Journal, May 10, 2014, Roel Hompes, MD from Oxford University Hospital, Oxford, UK
TaTME Literature

Results of 272 TaTME Cases

> Rectal CA 233
  - Nov 2011 to Feb 2016
  - One conversion (0.6%)
  - Mean time 147.9 minutes
  - CRM
    - Positive 8.6% (Mid 7.3% and Low 10.9%)
  - Mesorectal Quality
    - Complete 95.4%
    - Almost Complete 1.7%
    - Incomplete 1.7%
TaTME Literature

Complications (32.2%)
> Leaks 6.9% (S Mid 11 and Low 1)

> Collection 3.4% (S Mid 1 and Low 5)

> Recurrence 12%
  • Local 5.2%
  • Systemic 7.1%

TaTME Literature

BUT there are TaTME Specific Complications…

5 urethral 0.07%
2 bladder 0.002%
1 vagina 0.001%

Don’t Learn At Home!
Transanal total mesorectal excision (taTME) for rectal cancer: a systematic review and meta-analysis of oncological and perioperative outcomes compared with laparoscopic total mesorectal excision

Bin Ma†, Peng Gao†, Yongxi Song, Cong Zhang, Changwang Zhang, Longyi Wang, Hongpeng Liu and Zhenning Wang*
TaTME Literature

> Meta-analysis to compare the oncological and perioperative outcomes of taTME and laTME
> 923 initially identified studies
> 11 potentially relevant studies
  • 3 abstracts
  • 1 protocol
> 7 remaining studies with 573 patients

BMC Cancer (2016) 16:380 (Ma et al)
TaTME Literature

Quality of TME
- TaTME-higher

Lymph node yield
- comparable

CRM (complete remission excluded)(depth)
- TaTME-greater

Distal margin (length)
- comparable

+ CRM
- TaTME-less

+ Distal margin
- comparable

BMC Cancer (2016) 16:380 (Ma et al)
TaTME Literature

Operative time
  taTME-shorter

Conversions
  taTME-lower

LOS
  comparable

SF mobilization
  taTME-more

Complications
  taTME-lower

BMC Cancer (2016) 16:380 (Ma et al)
TaTME Literature

**ACOSOG Z6051** and **AlaCaRT**

Failed to meet the criterion for noninferiority for pathologic outcomes

Explanation

Proctectomy very difficult in a deep pelvis with in-line instruments

**TaTME**

Defines the distal resection margin more precisely

There is better visualization of the distal rectum

Allows deep pelvic dissection without difficult retraction

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BMC Cancer (2016) 16:380 (Ma et al)
TaTME Literature

Quality of TME

<table>
<thead>
<tr>
<th>Complete</th>
<th>Complete and incomplete</th>
</tr>
</thead>
<tbody>
<tr>
<td>taTME 83.4%</td>
<td>95.3%</td>
</tr>
<tr>
<td>lTaTME 73.4%</td>
<td>88.2%</td>
</tr>
</tbody>
</table>

Does not necessarily convert to longer survivals!

BMC Cancer (2016) 16:380 (Ma et al)
Comparison of short-term clinical outcomes between transanal and laparoscopic total mesorectal excision for the treatment of mid and low rectal cancer: A meta-analysis

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Accepted 5 September 2016
Available online 19 September 2016

EJSO 42 (2016) 1841-1850
TaTME Literature

> Meta-analysis to evaluate the feasibility, safety, and short-term clinical outcomes of TaTME vs LapTME for mid to low rectal CA

> 209 TaTME vs 257 LapTME PTs

> TaTME showed
  • Longer CRM
  • More complete CRM
  • Lower rates of positive CRM
  • Less OR time

EJSO 42 (2016) 1841-1850
TaTME Literature

Dr. John Monson

“Putting it ALL in Perspective”
TaTME Literature

In the modern era quality is based on:

Quality of TME (and lymph node yield)
CRM
Distal margin

Annals Surgery 2016;20(10)
Response to Letter
TaTME Literature

Challenging

Conventional TME
Cross-stapling of the distal rectum

TaTME
Eliminates need for cross-stapling
Increases precision of the distal margin
Facilitates transabdominal dissection
Shortens time of surgery

Annals Surgery 2016;20(10)
Response to Letter
Conclusion

So…what is the role of taTME?
Conclusion

We already do a pretty good job...
Conclusion

We already do a pretty good job…

but there is always room for improvement…

Anatomically
Pathologically
Oncologically
Conclusion

Selectively?

> Obese
> Males
> Narrow pelvis
> Mid to low rectal CAs
  • Distal ½ to 1/3
> Define close distal margin
> Protect CRM in laparoscopic cases
Thank-you!

John A. Griffin, MD, FACS FASCRS
References

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