COLORECTAL SURGERY

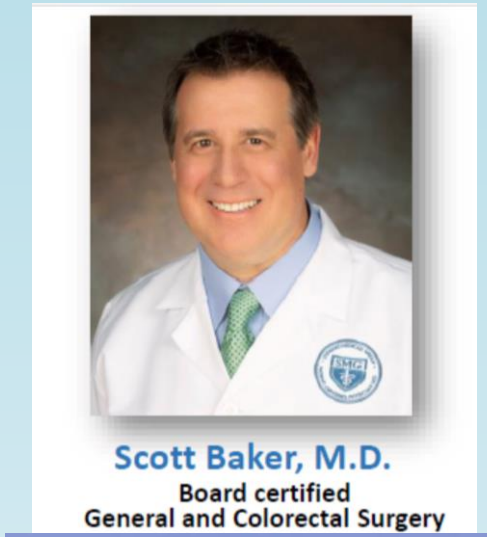
"WHAT'S NEW IN MY SPECIALTY"

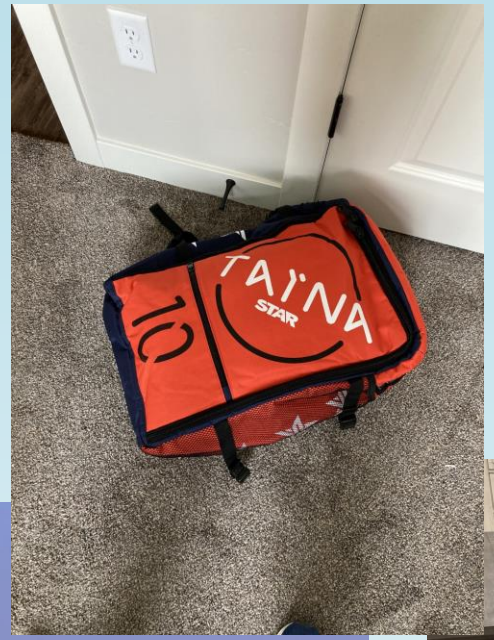
SCOTT BAKER MD FACS, FASCRS

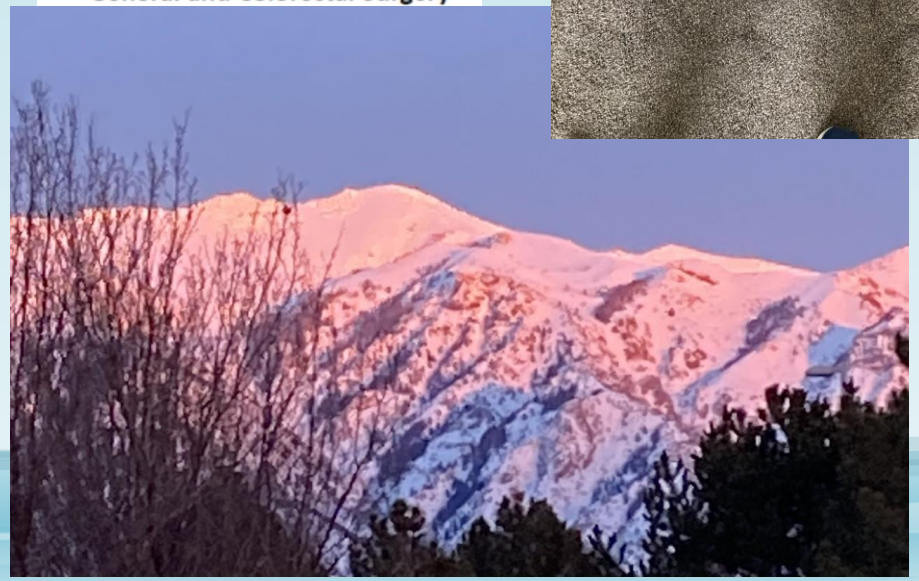
PARTICIPANTS WILL BE ABLE TO:

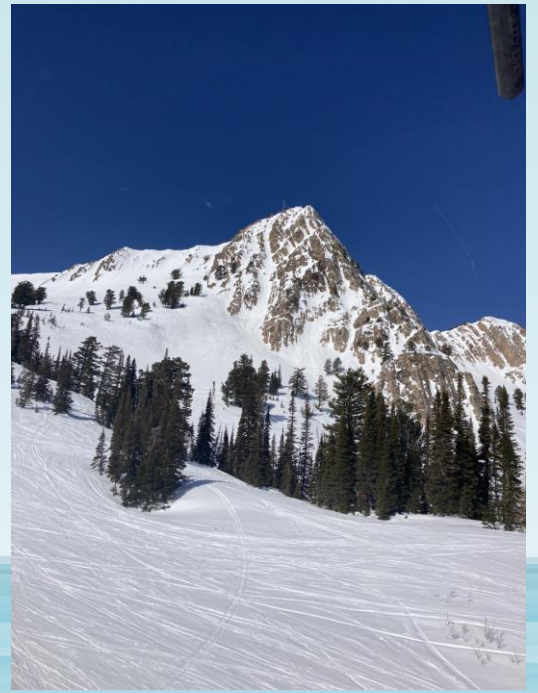
- Be familiar with robotics in colorectal surgery
- Understand current status of “Watch and Wait” approach to rectal cancer
- Be familiar with the current data for Neoadjuvant therapy

SCOTT BAKER MD so.....?









Scott Baker MD

- Board Certified in General Surgery
- Board Certified in Colorectal Surgery
- 20 years in practice
- Experience in all aspects of care for Colorectal Surgery
- Minimally invasive surgery

COLORECTAL SURGERY ?

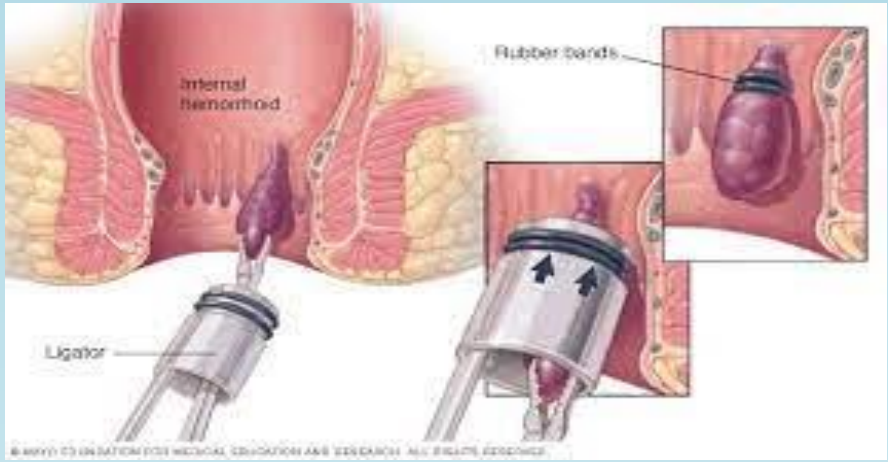
- Specialization in the surgical management of Colon and Rectal Care; Includes Anorectal Disease
- Additional year of fellowship after general surgery residency
- Board certification and examination
- Colon and rectal cancer
- Inflammatory bowel disease; Cohn's and Ulcerative Colitis
- Diverticulitis other benign disease, rectal prolapse
- Anorectal disease

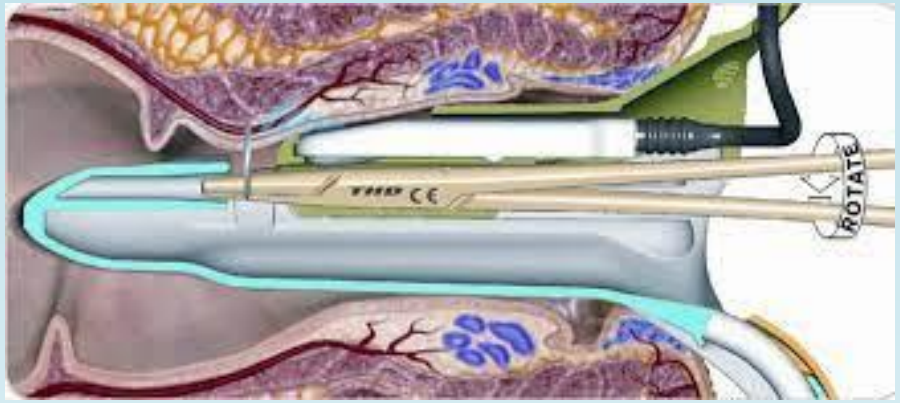
COLORECTAL SURGERY - *Current*

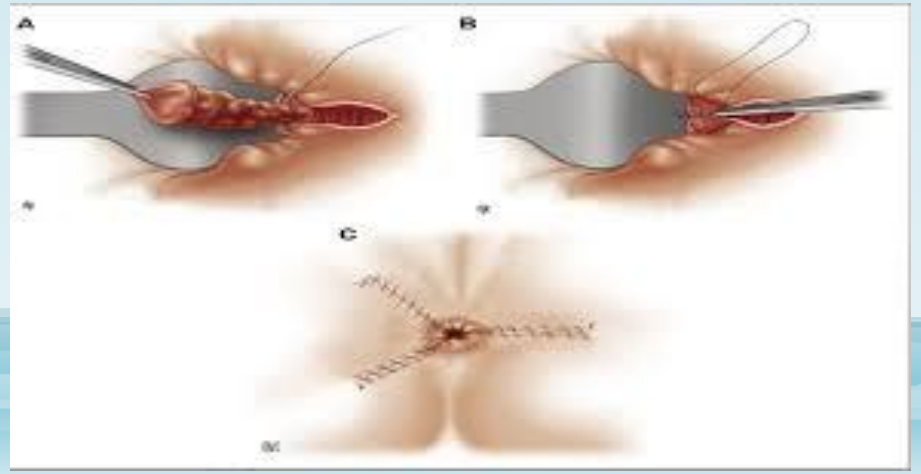
- Anorectal
- Diverticular Disease
- Inflammatory Bowel Disease
- Cancer

Hemorrhoids

- Anatomy
- Treatment
  - Non-surgical
  - Intermediate therapy
    - Banding
    - HET
    - Sclerotherapy, cold therapy – not in US
  - Surgical
    - Ferguson Hemorrhoidectomy
    - THD
    - PPH

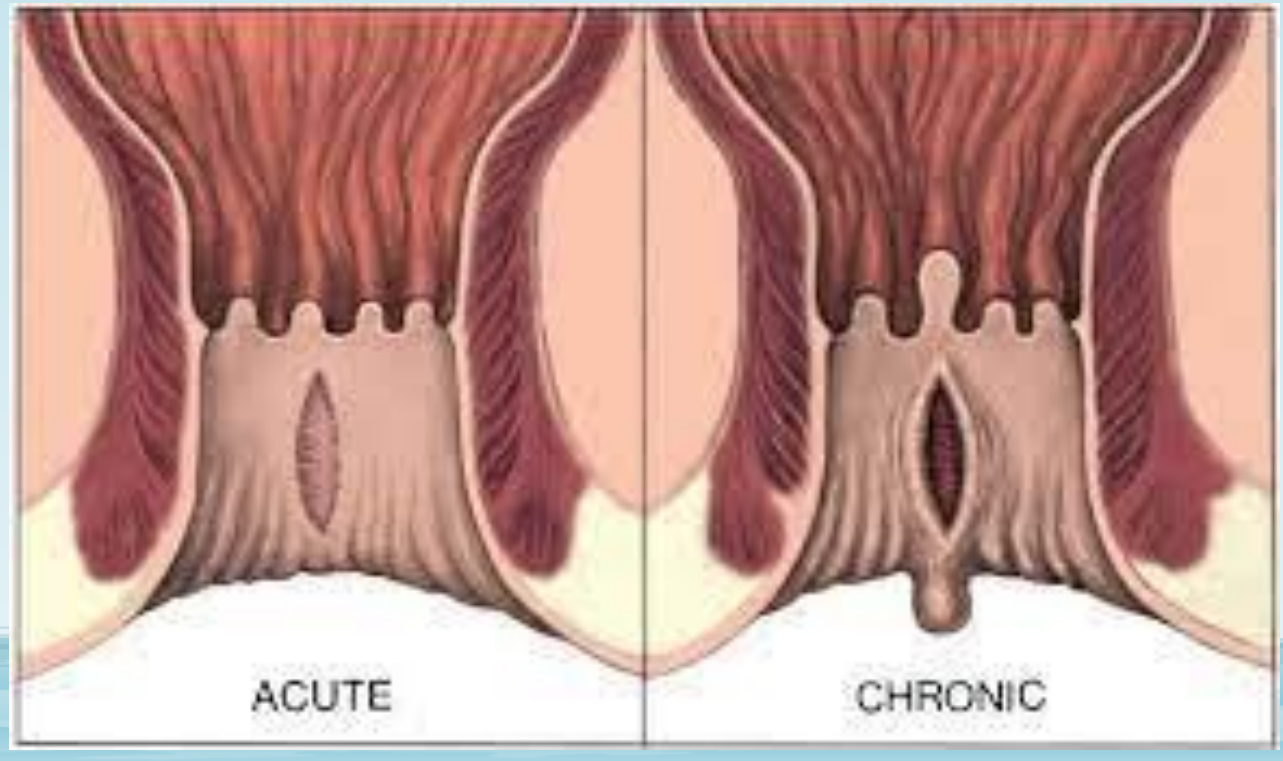






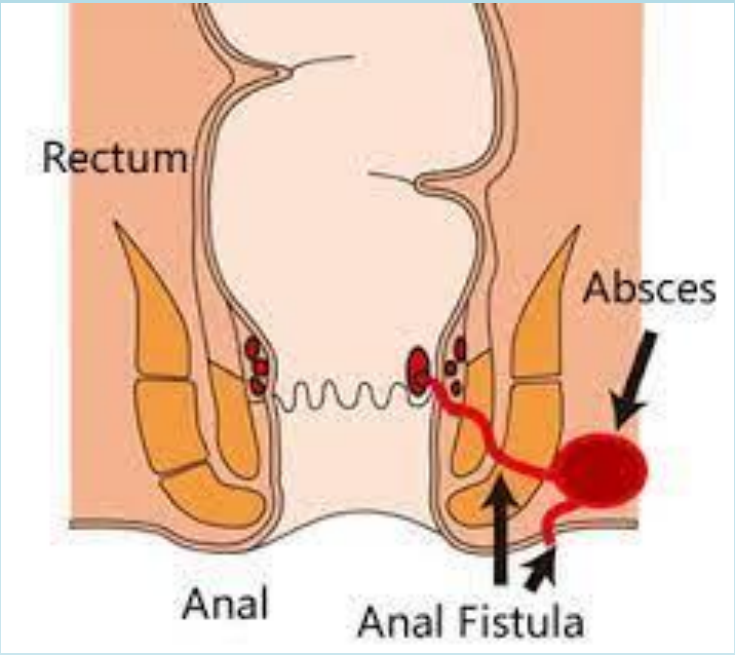
Anal Fissure

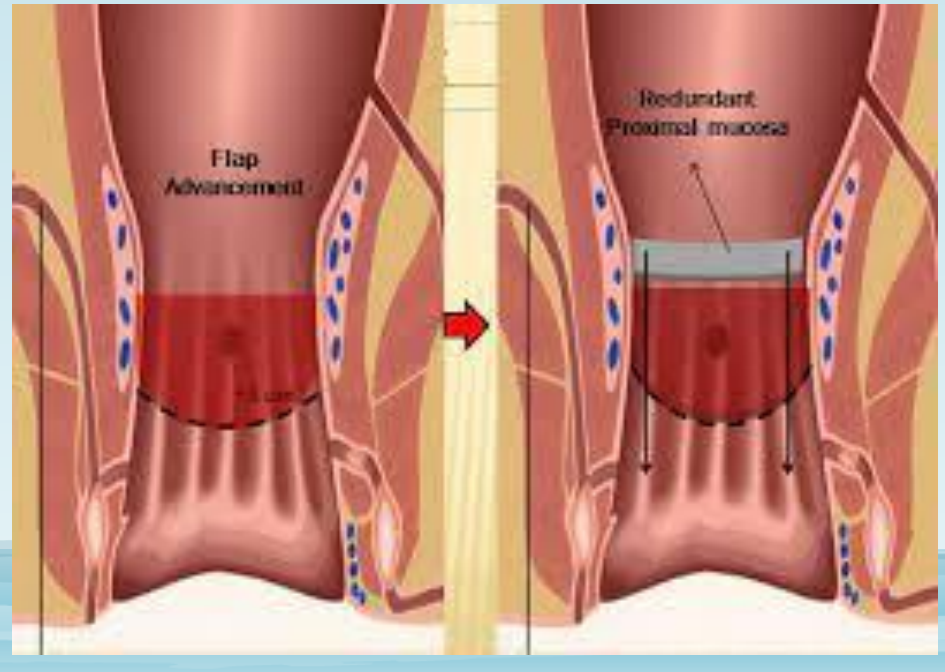
- Pain with bowel movements
- Small amount of bleeding
- Occasional sentinel pile, confused with hemorrhoid
- Fiber
- Nitroglycerine cream
- Calcium channel blocker
- Botox
- Sphincterotomy



Abscess/Fistula

- 40-60% abscesses go onto anal fistula
- Drain abscess
- Fistulas – many options few fixes
- Glue, plug, sphincterotomy, LIFT, MAF
- MAF best results 85% success rate





DIVERTICULITIS

- History of Management
- Last 20 years
  - Surgery -- move away from surgery -- return to surgical intervention
- NEW recommendations by the ASCRS

CLINICAL PRACTICE GUIDELINES

The American Society of Colon and Rectal Surgeons Clinical Practice Guidelines for the Treatment of Left-Sided Colonic Diverticulitis

Jason Hall, M.D., M.P.H.[1] • Karin Hardiman, M.D., Ph.D.[2] • Sang Lee, M.D.[3]
Amy Lightner, M.D.[4] • Luca Stocchi, M.D.[5] • Ian M. Paquette, M.D.[6]
Scott R. Steele, M.D., M.B.A.[4] • Daniel L. Feingold, M.D.[7] • Prepared on behalf of the Clinical Practice Guidelines Committee of the American Society of Colon and Rectal Surgeons

1 Section of Colon and Rectal Surgery, Boston Medical Center, Boston University School of Medicine, Boston, Massachusetts
2 Division of Gastrointestinal Surgery, University of Alabama at Birmingham, Birmingham, Alabama
3 Division of Colon and Rectal Surgery, USC Keck School of Medicine, Los Angeles, California
4 Department of Colorectal Surgery, Cleveland Clinic Cleveland, Cleveland, Ohio
5 Division of Colorectal Surgery, Mayo Clinic Florida, Jacksonville, Florida
6 Division of Colon and Rectal Surgery, University of Cincinnati, Cincinnati, Ohio
7 Section of Colorectal Surgery, Rutgers University, New Brunswick, New Jersey

DIVERTICULITIS

- Elective surgical resection recommended after recovery of complicated diverticulitis. 1B
  - Abscess and fistula

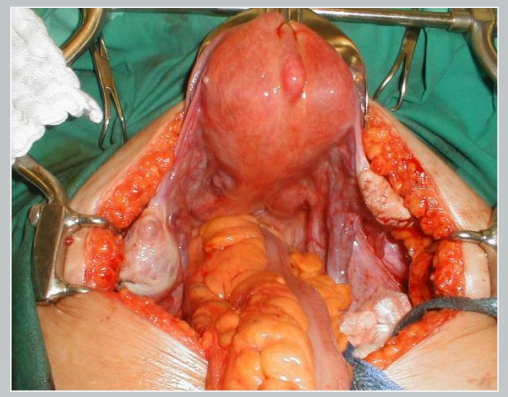
- Elective resection is not recommended based on age. 1B
- Elective resection for non-complicated diverticular disease is individualized. 1C

Cancer - Multidiscipline Approach

- Oncologist, Surgeons, Pathologist, Radiologist, Radiation Oncologist, **Nurse Navigators**, Other Providers
- Removing silo approach and working together
- Follow standardized recommendations NCCN
- Recommended by the commission on cancer
- NAPRC
- Many individuals involved, team approach
- Conference with presentation
- Better outcomes and patient care

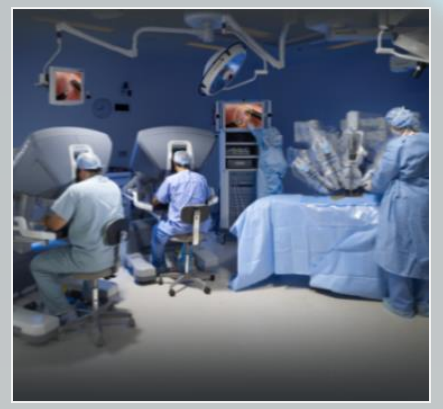
Colorectal Cancer and Robotics

Advancement Towards Less Invasive Surgery



Abdominal (Open) Surgery

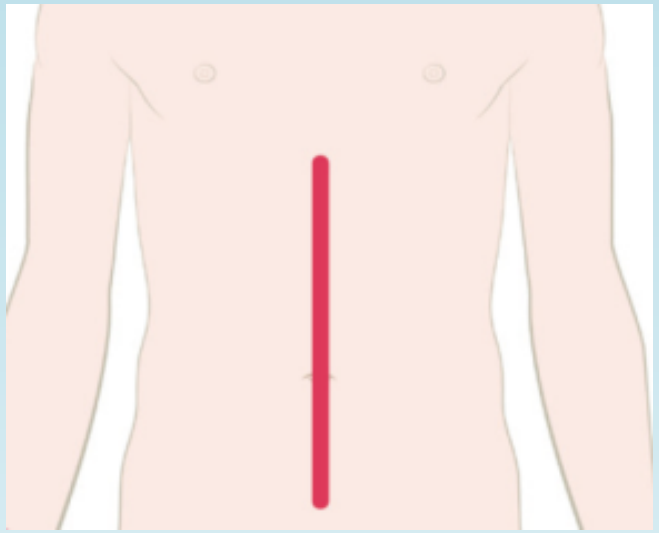
Laparoscopic Surgery

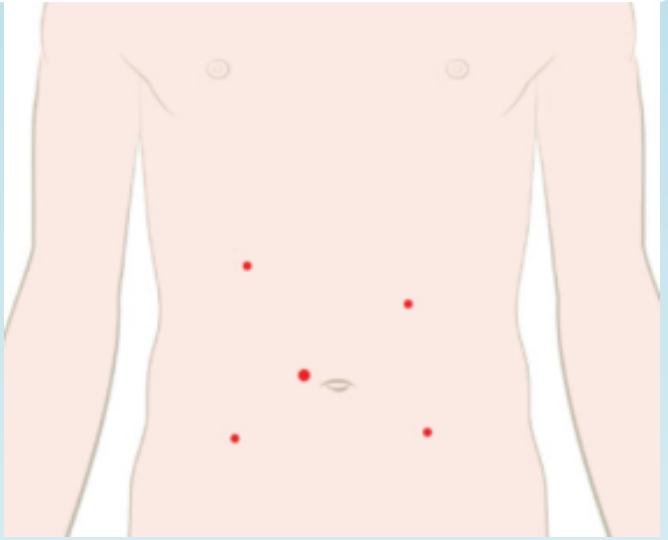


***da Vinci*® Surgery**

Incisions

Colectomy





One Large Incision

Open Colectomy

Multiple Small Incisions

da Vinci® Colectomy
or
Traditional Laparoscopic Colectomy

Multi-Port *da Vinci*® Surgery

Offers:

- 3-5 Small Incisions
- The Surgeon Controls Every Move of the Instruments
- Stable & Clear Visualization
  - 3DHD immersive view with up to 10x zoom
- Added Precision & Dexterity
  - Wristed instruments with 7 degrees of motion
  - Hand movements are scaled down
  - Hand tremors are reduced
- Dual Console Option Enhances Collaboration and Training

da Vinci® Surgery:
Over 2 Million Procedures Worldwide

High Definition 3D Vision
- Surgeon-controlled
- Stable and immersive view
- Up to 10x zoom

Precision & Dexterity
- Mimics surgeon's hands
- Scales down movements
- With tremor filtration

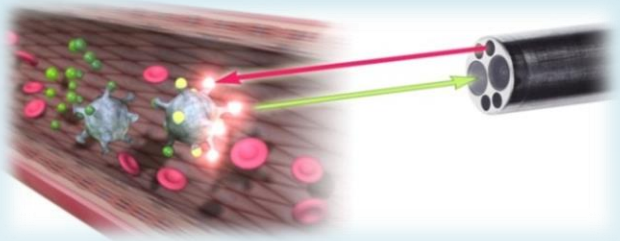
Intuitive® Motion
- Advanced software enables intuitive control (instead of cross-handed)

Advanced Visualization = Added Precision

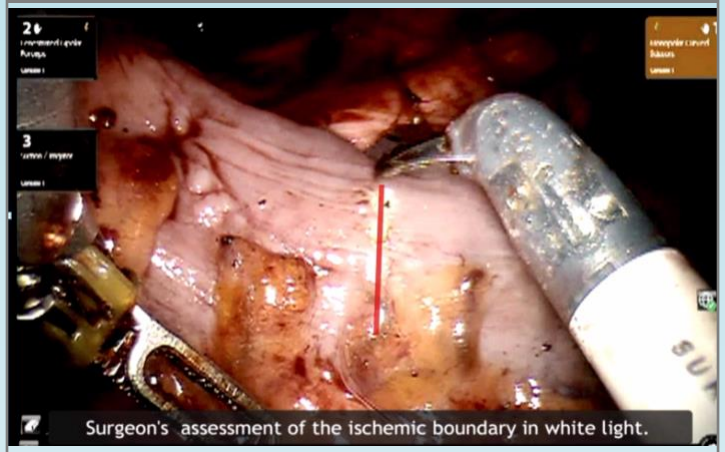
with 3DHD + Firefly™ Fluorescence Imaging

Integrated Advanced Imaging:

- Real-time “night vision”
- Visualization of vessels and critical anatomy
- Solid organ and soft tissue perfusion



Robotic-Assisted Lower Anterior Resection



Firefly™ Fluorescence Imaging is cleared for commercial distribution in the U.S. for visual assessment of vessels, blood flow and related tissue perfusion using near-infrared imaging.

Dr. Barker

6/28/21

Right Colectomy

– unresectable polyp-cecum

RN Emily, Tim

CST Destiny

	TOT	IN	OUT
TO		7:41	
INC	100 mins	7:48	9:28
PORT	85 mins	7:53	9:18
DOCK	71 mins	7:58	9:09
CONSOLE	68 mins	801	9:09

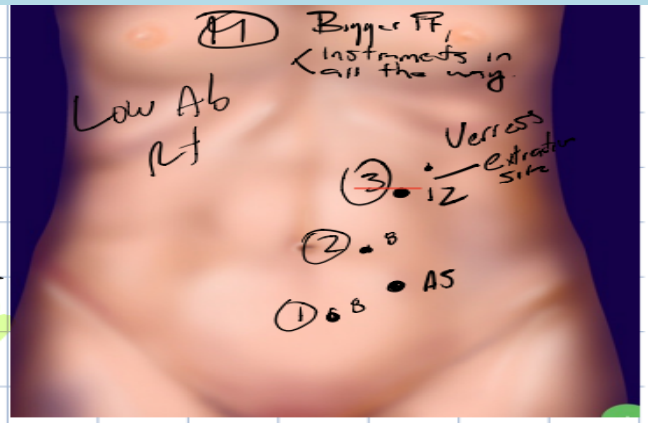
3x Blue

1 x White

ICG Ready

3.0ml

Admin – 8:45



* Wavy grasper for assist

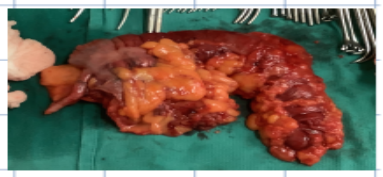


Table -7° Trend/Left

Time	1	2	3	4	Step
8:01	FenBP	30°	MCS	Ø	ID ileocolic pedicle / duodenum
8:06			SFGO W		Transect ICP, Fire 8:07
8:08			MCS		M→L dissection bump BP 4, C/C 4
8:28			VSE		Continuing dissection, very fatty omentum
			SFGO B		Mobilizing, ICG 8:45 ICG perforators
8:46			SFGO B		Transecting ileum, Fire 8:48
8:52					Transecting ascending colon 8:50 ICG perfusion ✓
8:52			MND		Stay suture (2) 3-0 Vycril (Cut to 6") 3-0 vycril SH
8:55			MCS		Enterotomy creation, TI then AC
8:56			SFGO B		Assist grab, stay suture w/ needle driver Isoperistaltic Common channel creation, Fire (Blue) 8:58
8:57			MND		3-0 V-LOC 6" 180 V-20, common channel closure bottom to top to bottom 9:08
					Alexis in 9:12 (3) LUQ, specimen out 9:20 ovarian

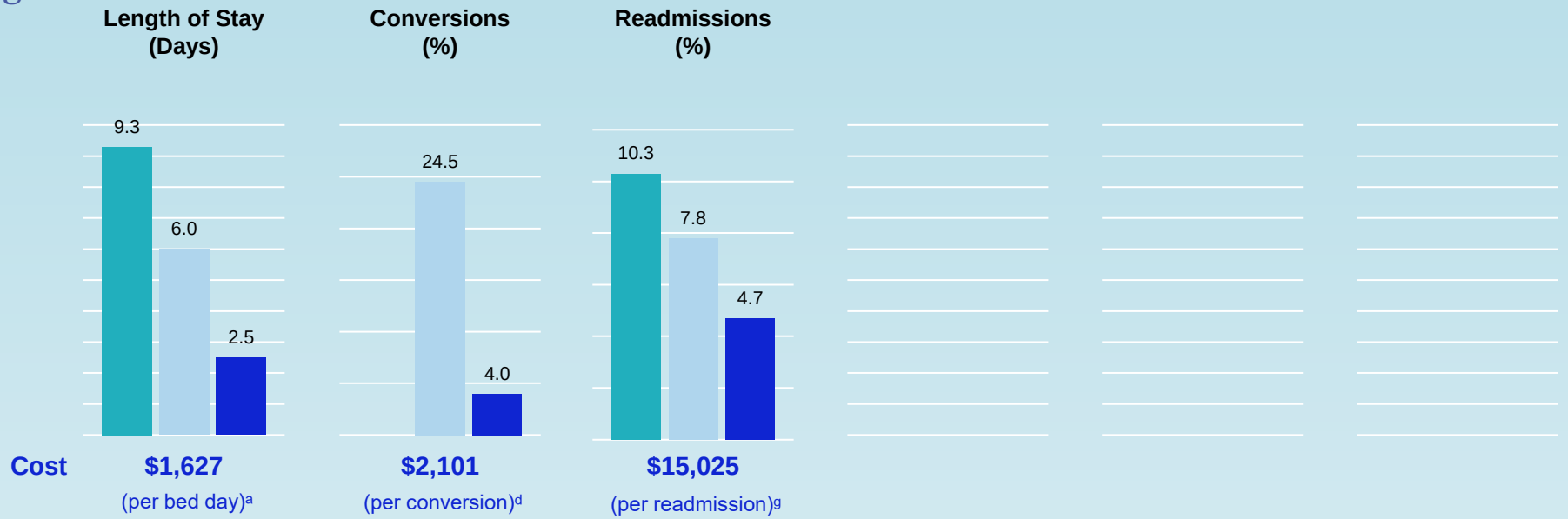
105

Clinical outcomes and estimated cost avoidance (National Data)

Colon Resection - Right

Open
Lap
da Vinci RAS

Dr. Scott Baker MD *
Colon Resection - Right



Estimated Cost Avoidance Per Procedure

$11,905 vs. Open
$6,591 vs. Lap

Estimated Total Cost Avoidance

$250,005 vs. Open
$138,411 vs. Lap

Please see background information slide for additional details on these data points.

*Dr. Scott Baker MD provided data for Colon Resection - Right at Davis Hospital & Medical Center, da Vinci: 4/2017 - 3/2018. Outcome measures reported in this presentation are selected based on the surgeon's interests and availability of relevant data. Reference: Benlice C, et al. (2016) Int J Med Robot. doi: 10.1002/rcs.1783. Epub 2016 Oct 21. Reported outcomes apply to elective colon resections of all types, including total, left, and right colectomy, for any indication. If reported here, SSI rate from Benlice, et al applies only to superficial and deep SSI, while authors also reported organ/space SSI in their publication.

Data presented for robotic-assisted surgery reflect a single surgeon experience. Reported outcomes may or may not reflect typical patient or surgeon experience. A summary of a peer reviewed study based on large patient populations is available in this presentation and represents additional patient or surgeon experiences. The surgeon's results reported here may or may not be reproducible and are not generalizable. The data are not collected under formalized study. This data comparison is not case matched for patient complexity and/or disease status and may not be comparable across these surgical modalities. DATA ARE NOT PEER REVIEWED AND ARE NOT PUBLISHED. As such, this data presentation should be considered as informational only and is not conclusive. Cost estimates have been independently generated by Intuitive Surgical using cost modeling methodology based on national averages and have not been published or peer-reviewed.

COLORECTAL SURGERY – *On the Horizon*

- ANORECTAL – continued approach to improve instrumentation

- BENIGN DISEASE

  - Continued movement towards minimally invasive techniques, robotics and minimal trauma

  - Removal of specimens thru natural orifices, ex anus

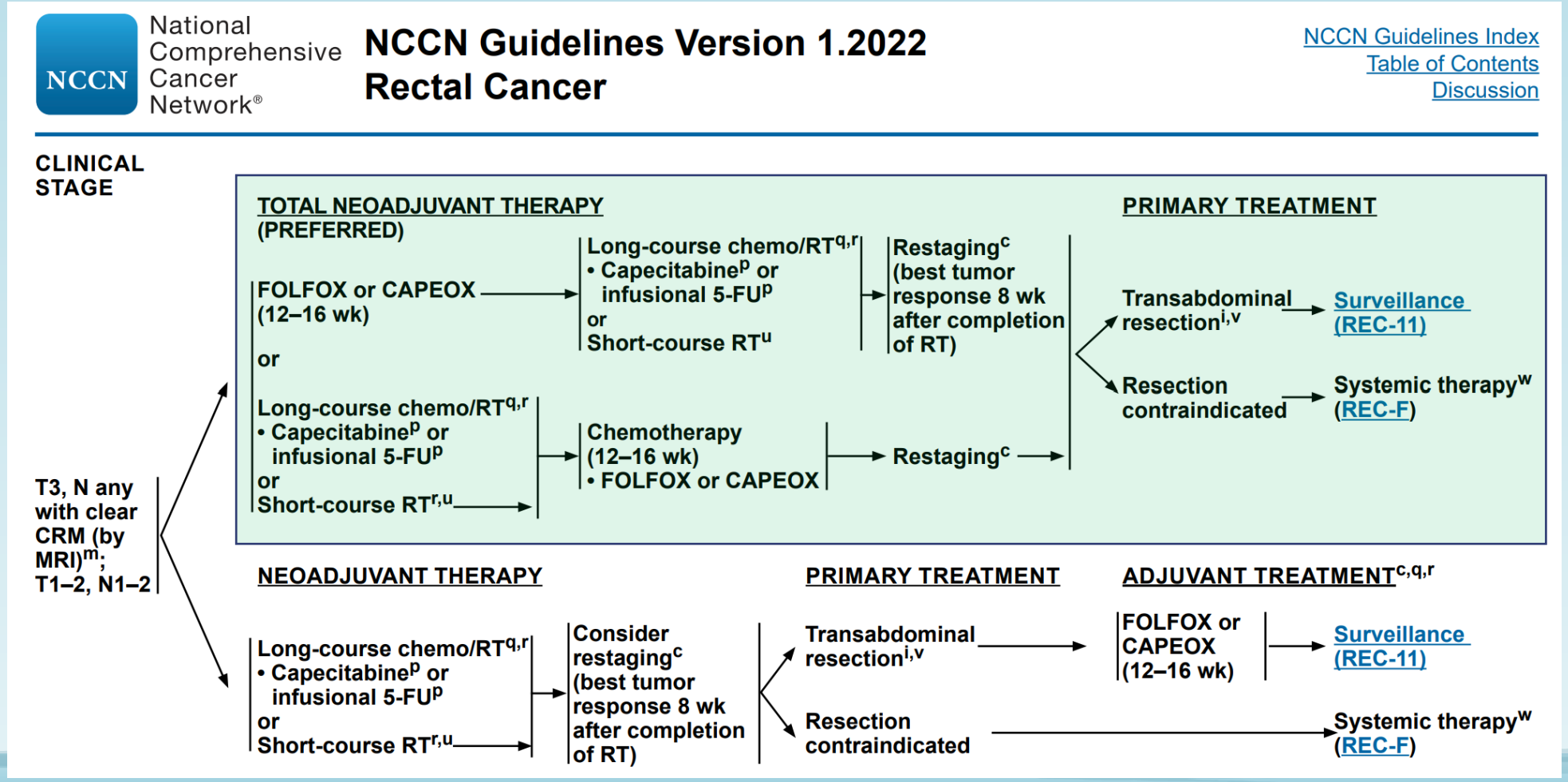
  - Move toward outpatient surgery with close follow-up for major surgeries

COLORECTAL SURGERY – *On the Horizon*

- CANCER
- Colon Cancer moving to total mesocolon resection to improve patient outcomes
- Rectal Cancer. Exciting results with Total Neoadjuvant Therapy
- Approach to Complete Clinical Responders “watch and wait”

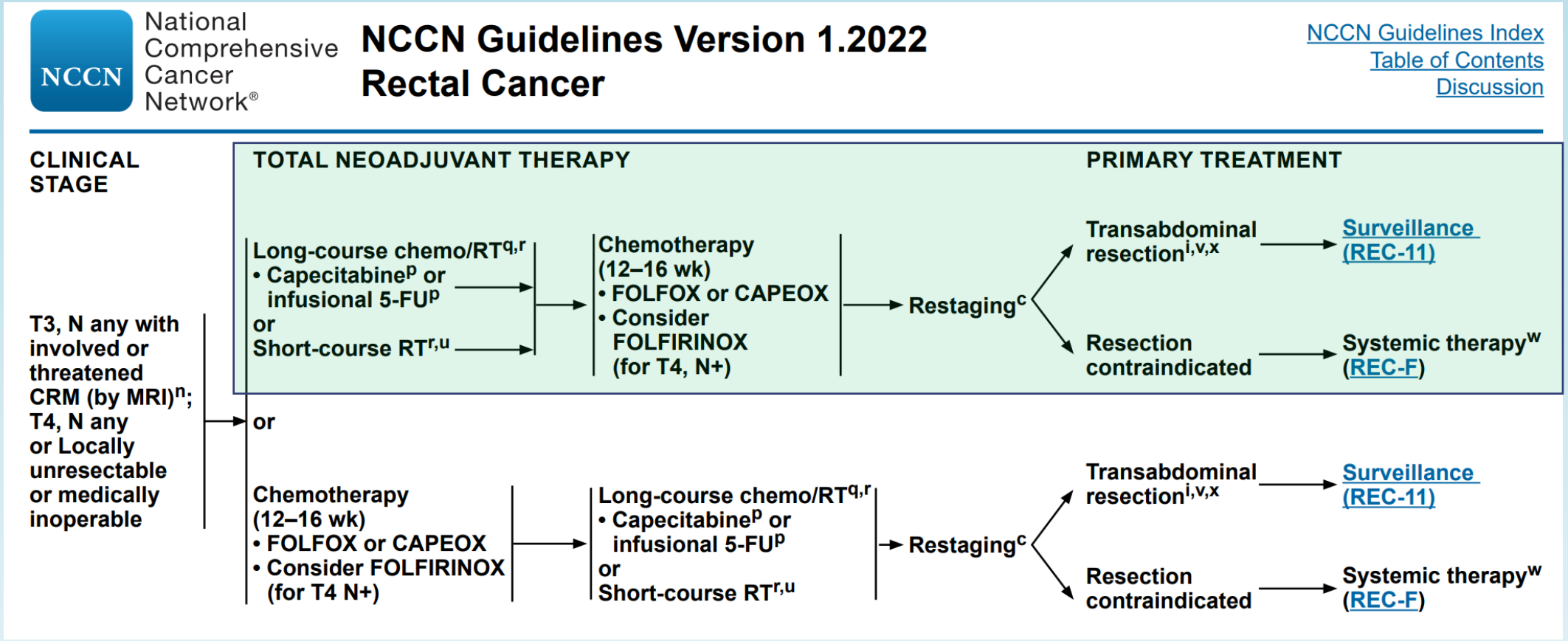
- TRAINING
- Push to train members to become leaders and many training modules to demonstrate approaches
- New education modules to train and interact with members on techniques for resection etc.

TOTAL NEOADJUVANT THERAPY



Improves Pathologic Complete response, DFS and OS in multicenter analysis

TOTAL NEOADJUVANT THERAPY



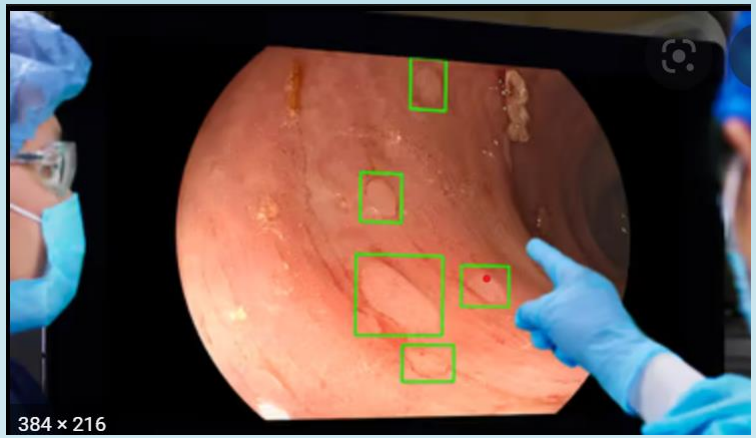
Improves Pathologic Complete response, DFS and OS in multicenter analysis

“WATCH AND WAIT”

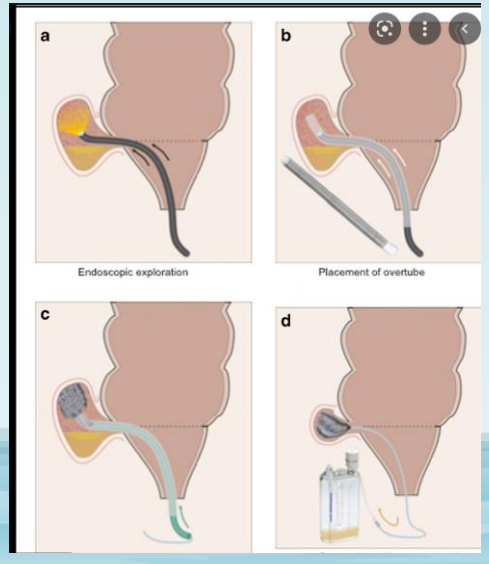
- NO surgical intervention; watch and wait
- Complete Clinical Responder. No evidence of the disease remains
- Needs eval with bx, MRI and endoscopic evaluation
- Seeing increased rates with TNT approach
- Slightly lower DFS and OS compared to surgical resection group
- Some reports recurrence is NOT more aggressive some with more advanced disease

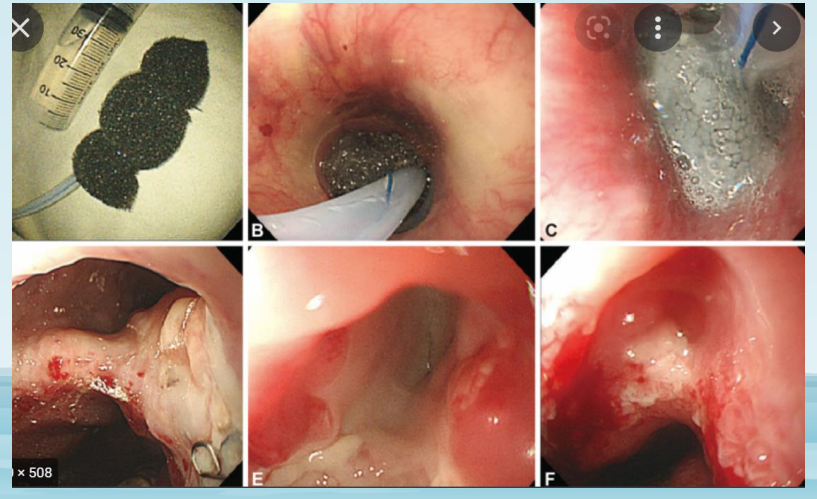
COLORECTAL SURGERY - *Future*

- A I colonoscopy



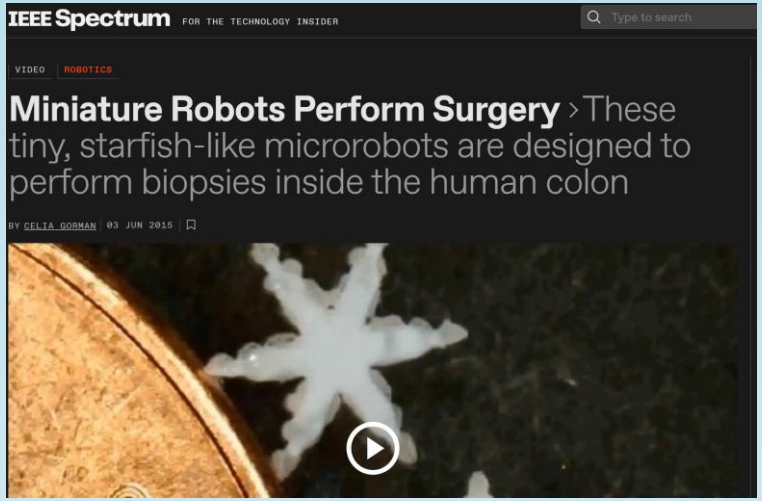
- Endoluminal wound vac





COLORECTAL SURGERY - *Future*

- Microbots



- Monitoring of movements and the utilization of this data for improved outcomes

- Wearables

Wearable Technology for Assessment and Surgical Assistance in Minimally Invasive Surgery

WRITTEN BY

Juan A. Sánchez-Margallo, José Castillo Rabazo, Carlos Plaza de Miguel, Peter Gloor, David Durán Rey, Manuel Ramón González-Portillo, Isabel López Agudelo and Francisco M. Sánchez-Margallo

Submitted: September 8th, 2021, Reviewed: September 24th, 2021, Published: October 18th, 2021

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Questions?