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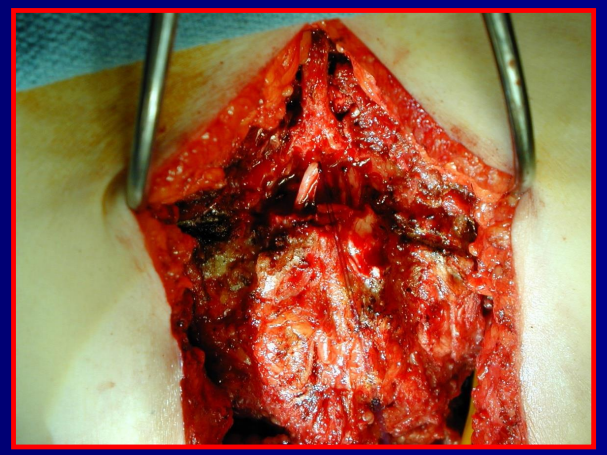
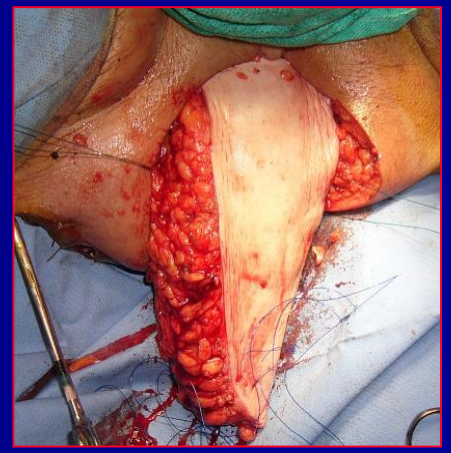
Recurrent and Locally Advanced Rectal Cancer Surgery

20th Annual Conference of the Egyptian Group of Colon and Rectal Surgeons

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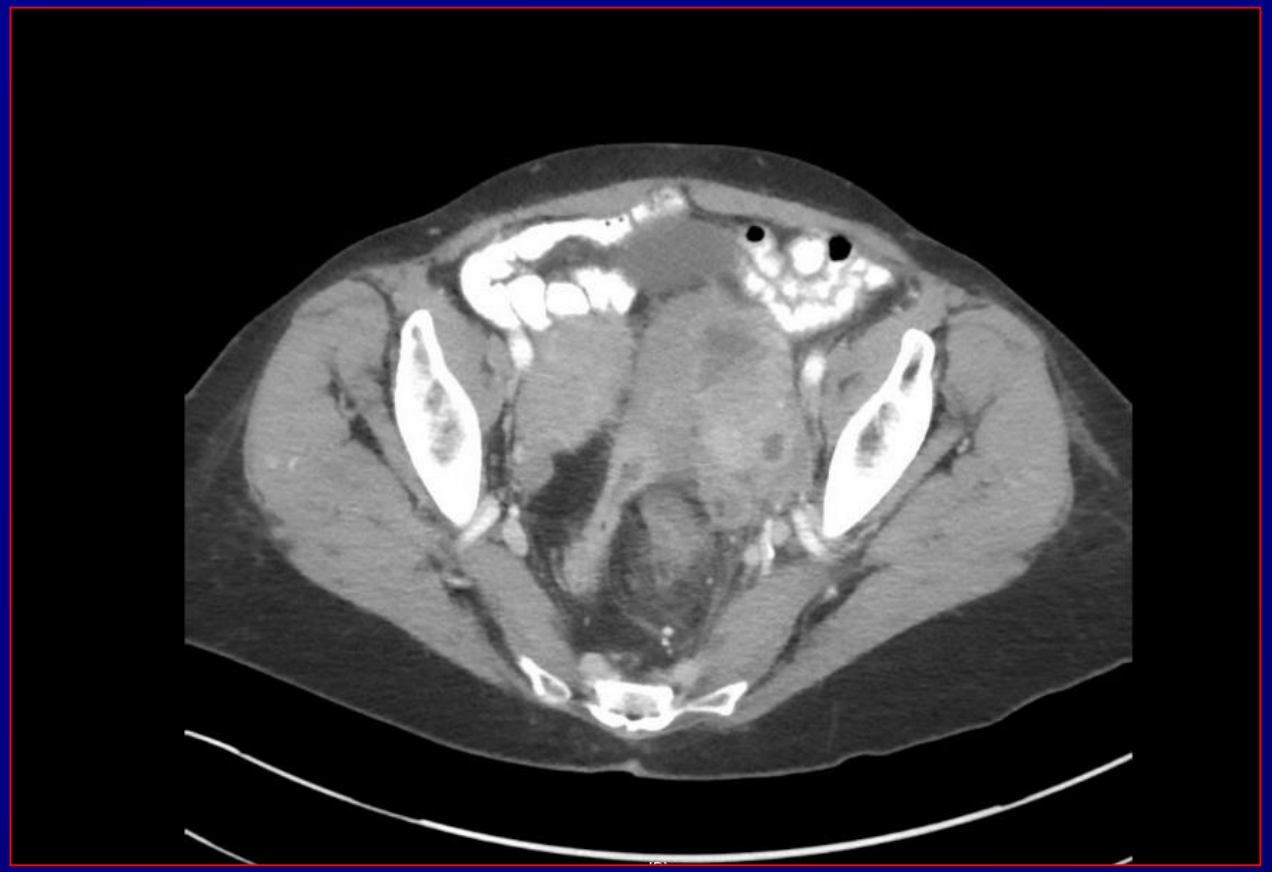
Case

- 67 year-old female with prior anterior resection for rectosigmoid CA with recurrent pain and LBO



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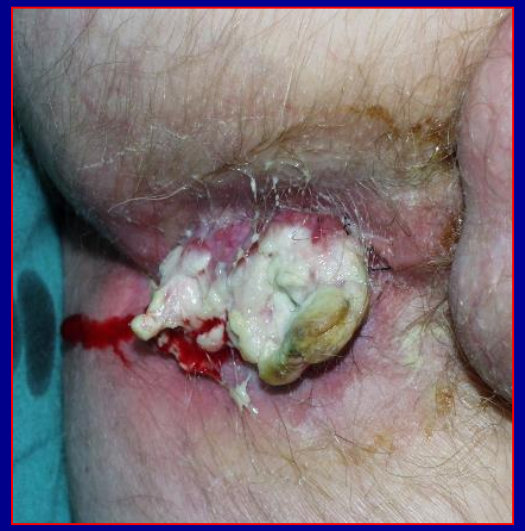
Questions to Ask

- Urgency of the situation?
- What was done surgically?
- Adjuvant therapy?
- Prior radiation?
- Anatomy of involvement
- Who do I need?
- Palliative or curative?
- Staged treatment?

Local Recurrence

- >5,000 patients/year in the USA
- If untreated:
  - median survival <12 months
  - Horrible complications
  - pelvic pain
- Most have exhausted other treatment options
- Many resectable at the time of diagnosis



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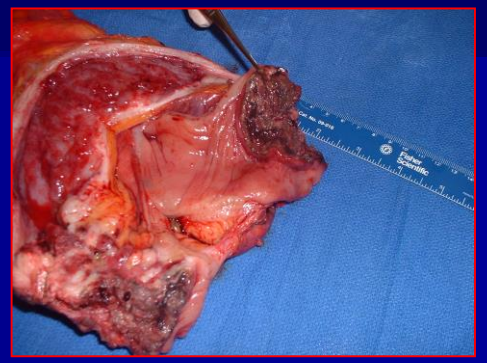
Recurrent Rectal CA - Candidates

- Pre-TME
  - Local recurrence rates were 20-30%
  - Primarily due to inadequate mesorectal resection



- 5-17% of patients will develop recurrent rectal cancer (RRCA)
  - Despite TME
  - Despite adjuvant therapy
- Approximately 50% of patients are potential candidates for surgical resection
  - Only 30-40% will achieve an R0 resection
  - ~ 20% patients with recurrent rectal cancer are surgical candidates for cure

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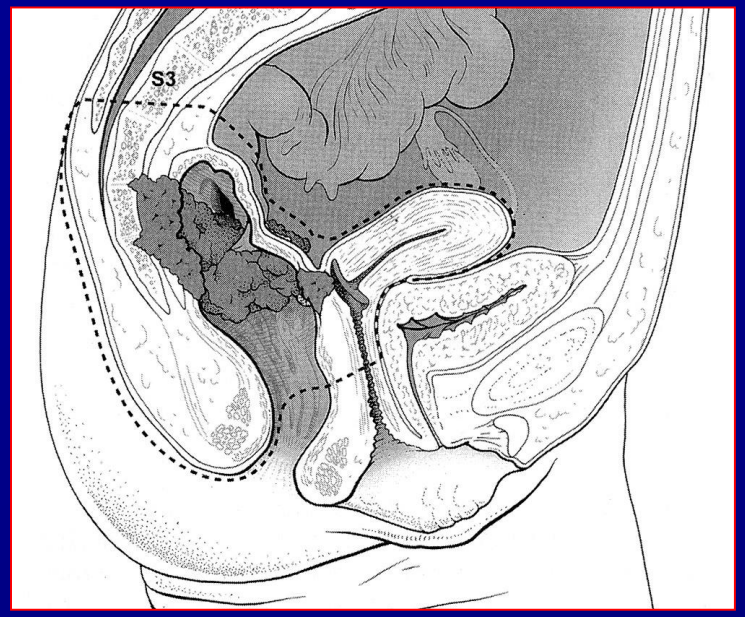
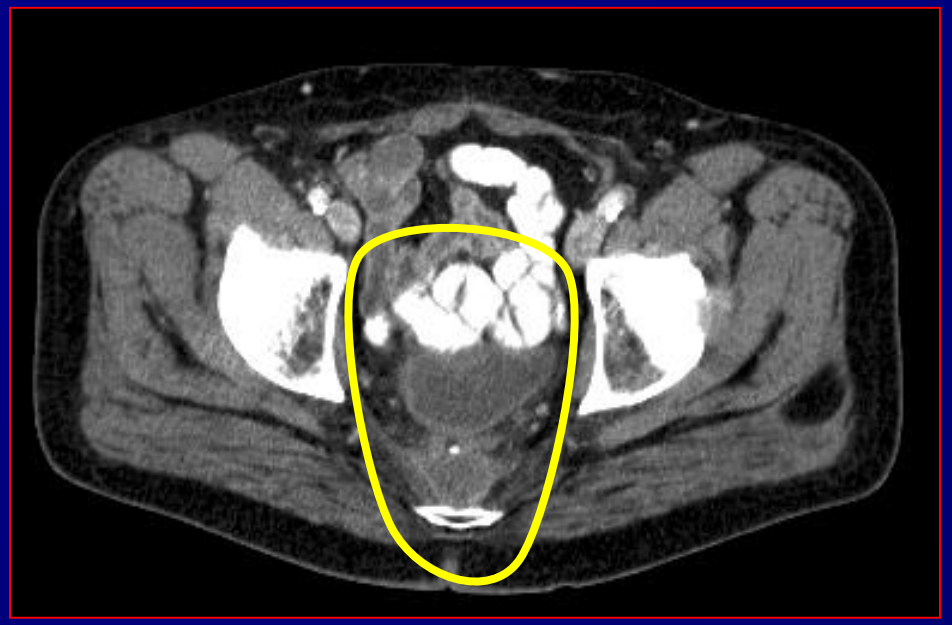
Anterior and Posterior Margins





Anterior: the urogenital organs

Posterior: sacrum, piriformis, sacral plexus

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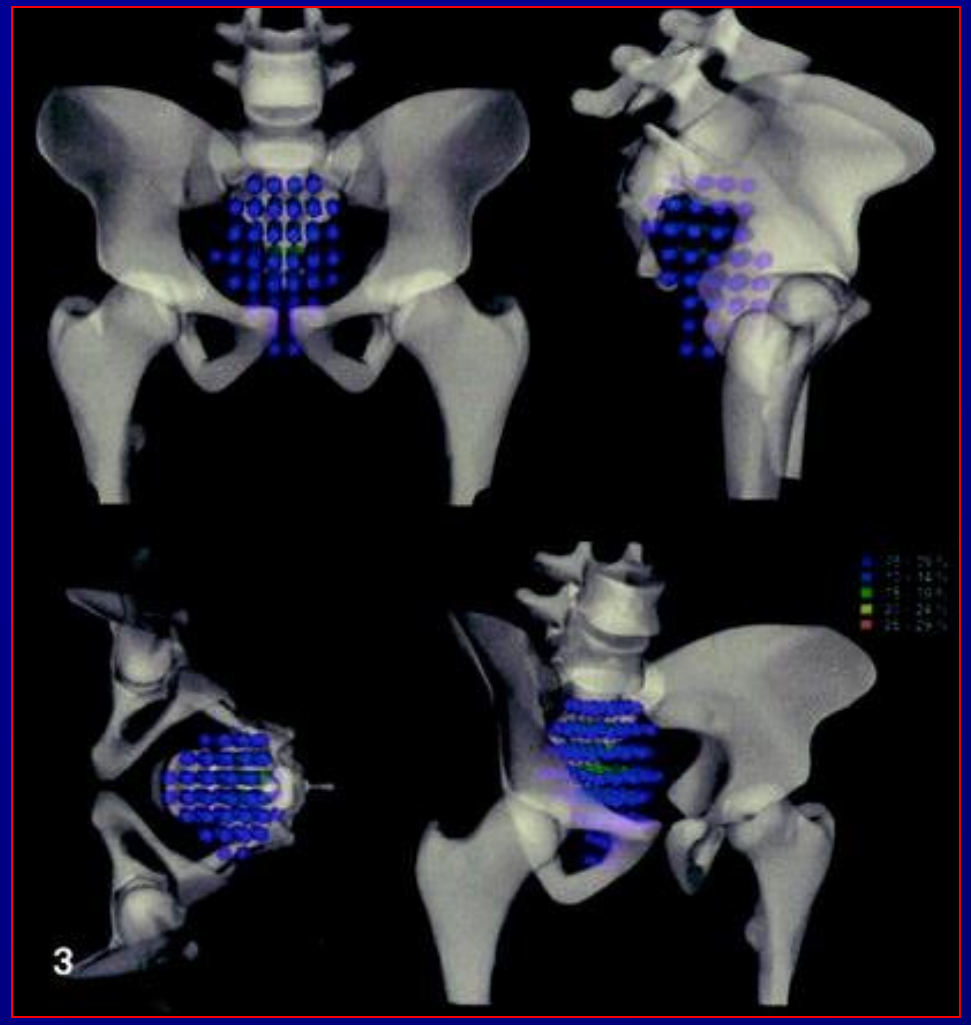
Pelvic Patterns of Recurrence



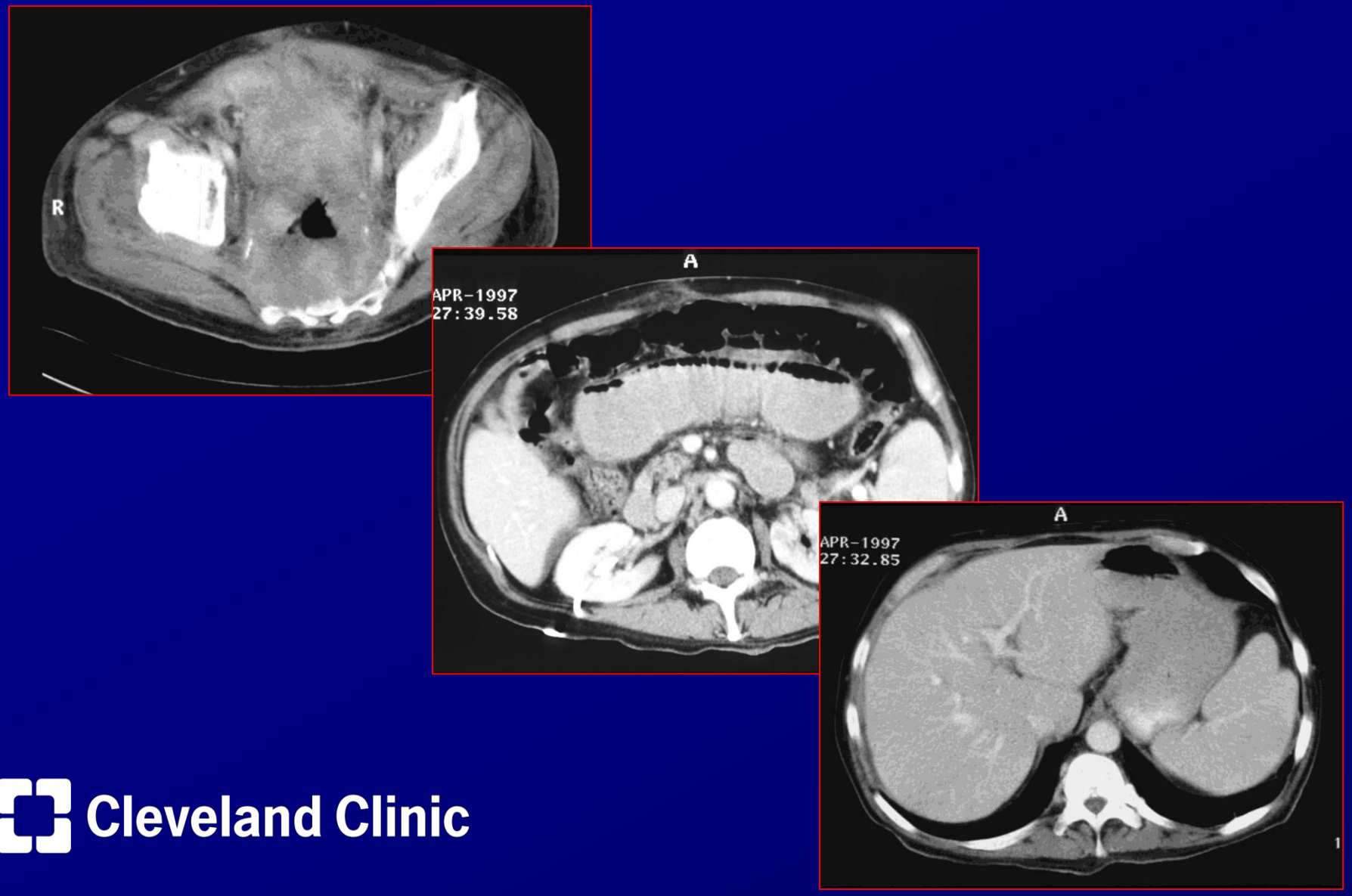
Most located in the posterior part of the bony pelvis

Fewer than 5% involve the pelvic side wall

Sacrum & Coccyx involved in 30%

Hocht et al, Int J Colorectal Disease 2003

Advanced Pelvic Recurrence



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What is a "Difficult Pelvic Dissection" in Recurrent Rectal Cancer?

- Distortion of anatomic planes
  - Inflammation
  - Scar tissue/adhesions
- Bleeding
- Injury to pelvic structures
  - Ureters
  - Bladder

- Multi-visceral involvement
- Local recurrence
  - After local excision
  - After radical excision

Neoplasia =
High stakes situation

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Strategic Planning

- Imaging
  - Know what you are getting yourself into!
- Team Building
  - Multidisciplinary surgical teams are better prepared
- Intra/pre-operative
  - Neoadjuvant therapy
  - Stents
- Reconstruction
  - Putting it back together

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The Team

- Radiology
- Pathology/Blood
- GYN-Onc
- Urology
- Vascular Surgery
- Orthopedics
- Surgical Oncology
- Neurosurgery
- Plastic Surgery
- Radiation Oncology
- Anesthesia
- Colorectal Surgery
- Medicine / Impact

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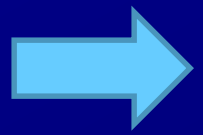
Planning Considerations

- 12% of rectal cancers extend beyond the mesorectum
- Postop chemoxrt doesn't prevent recurrence if circumferential margin is involved by tumor.
- R0 resection imperative



- Urinary System
- Male reproductive organs
- Female reproductive organs
- Small bowel
- Sacrum
- Pelvic side walls

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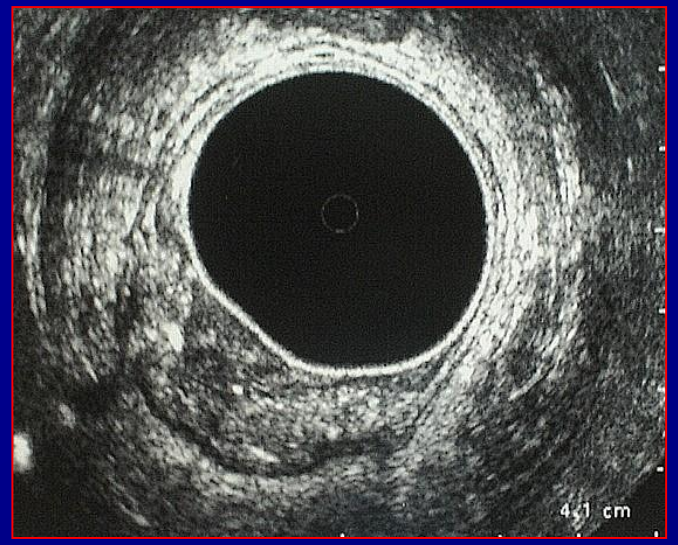
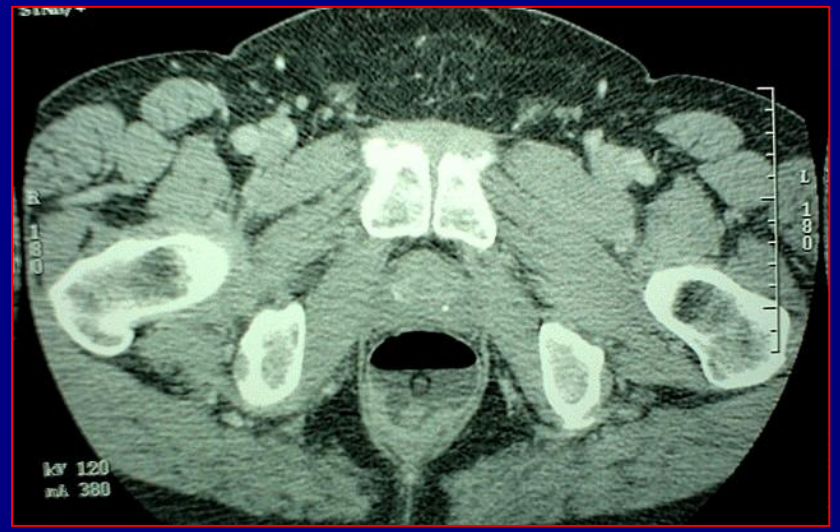
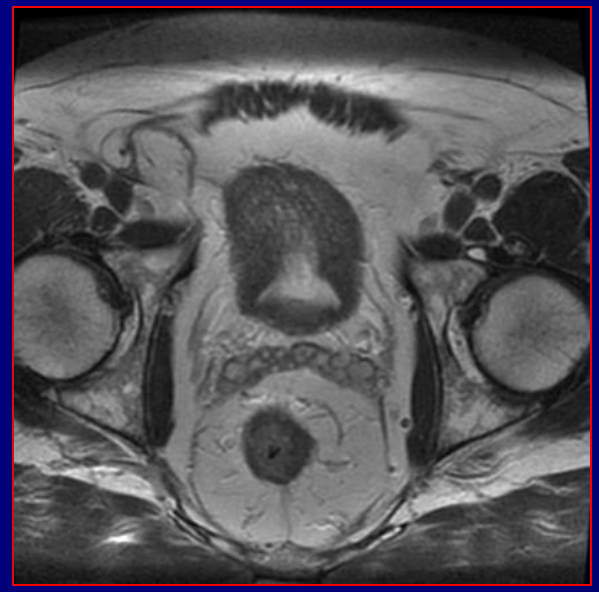
Preoperative Evaluation

- Confirm the diagnosis
- Exclude distant metastasis
- Assess resectability
- Evaluate operative risk

Preoperative Staging = Proper Patient Selection



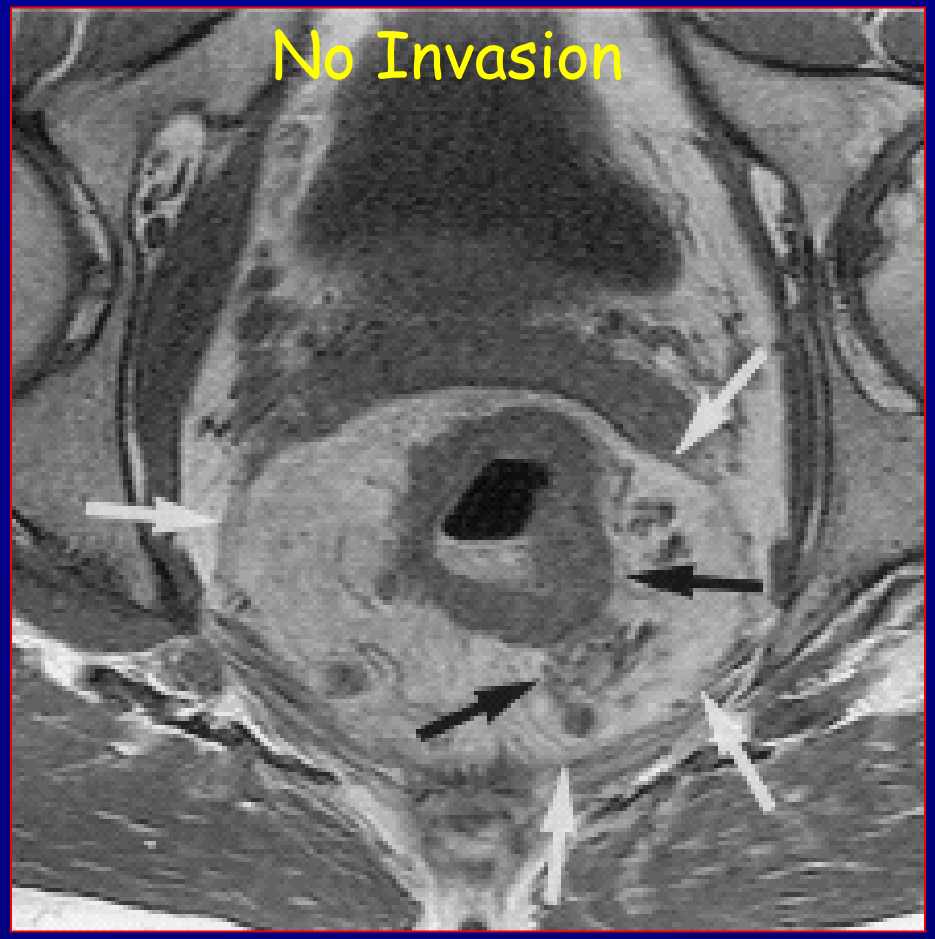


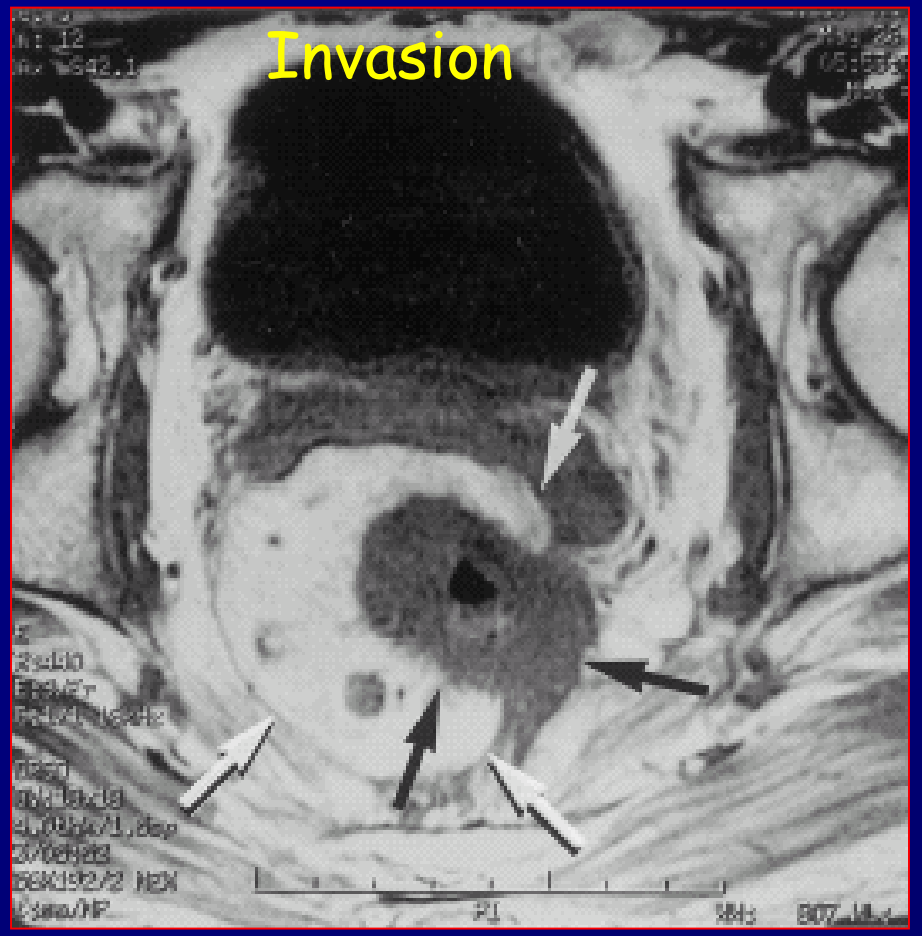


Limitations of Imaging Studies in Recurrent Rectal Cancer

- Most patients with recurrent rectal cancer received prior chemoradiation and/or prior surgery
- Preoperative images do not reliably predict postop pathology
  - Fibrosis vs tumor
- We still rely on imaging to help plan
  - Combining modalities may help mitigate the limitations of each one

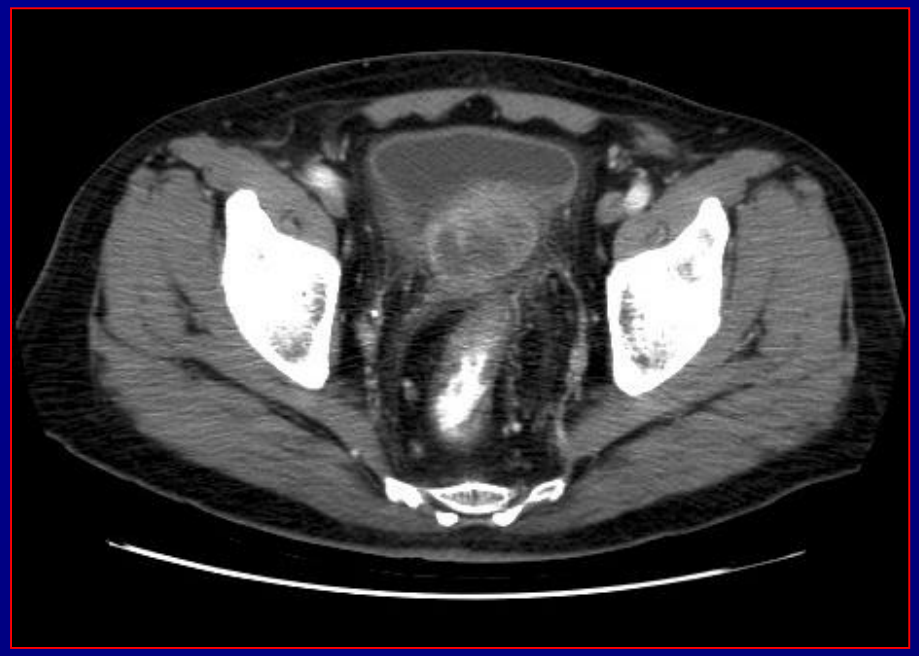
MRI to Look for Local Invasion



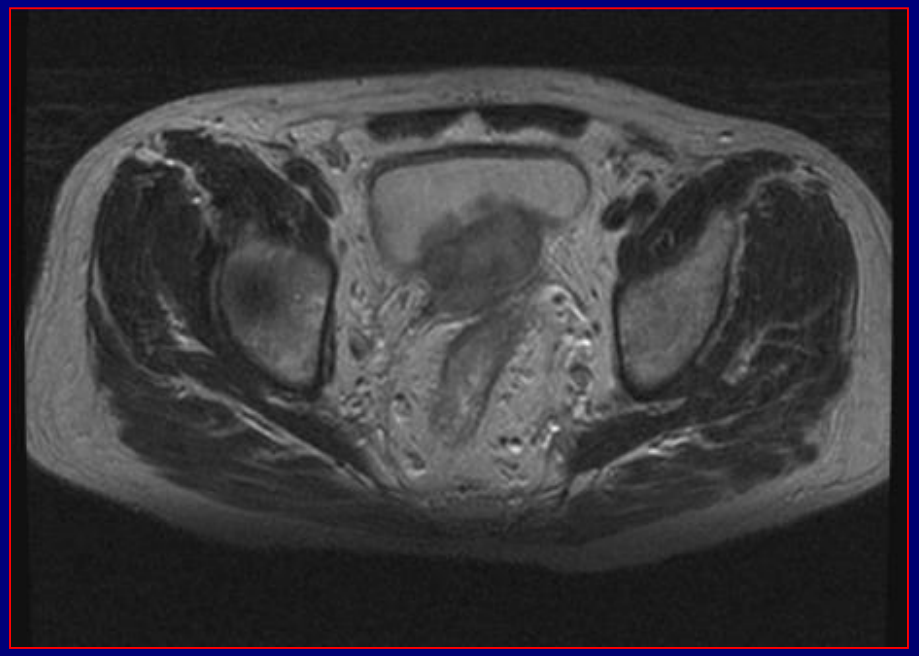


Tumor Infiltrating Bladder Imaging Importance

CT Scan



MRI



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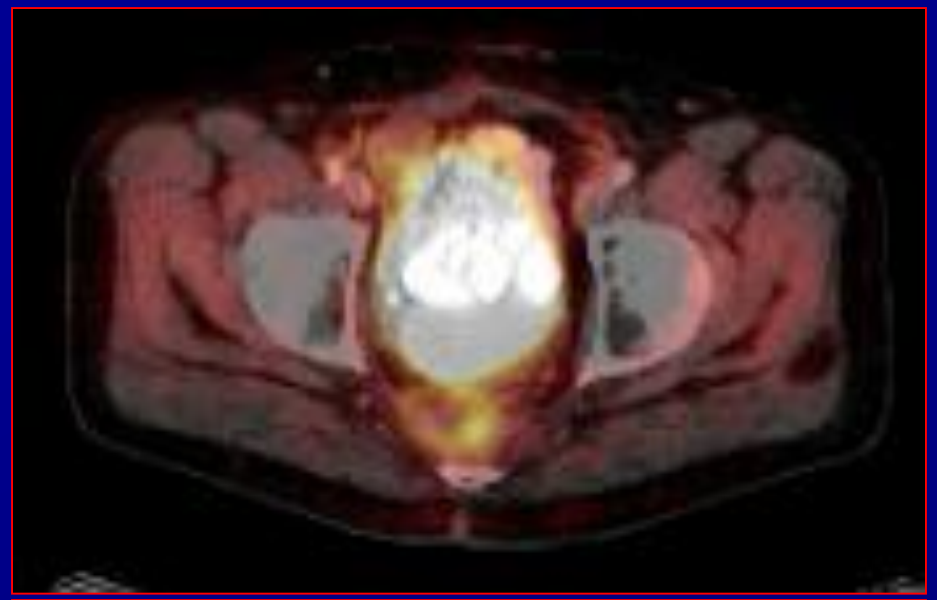
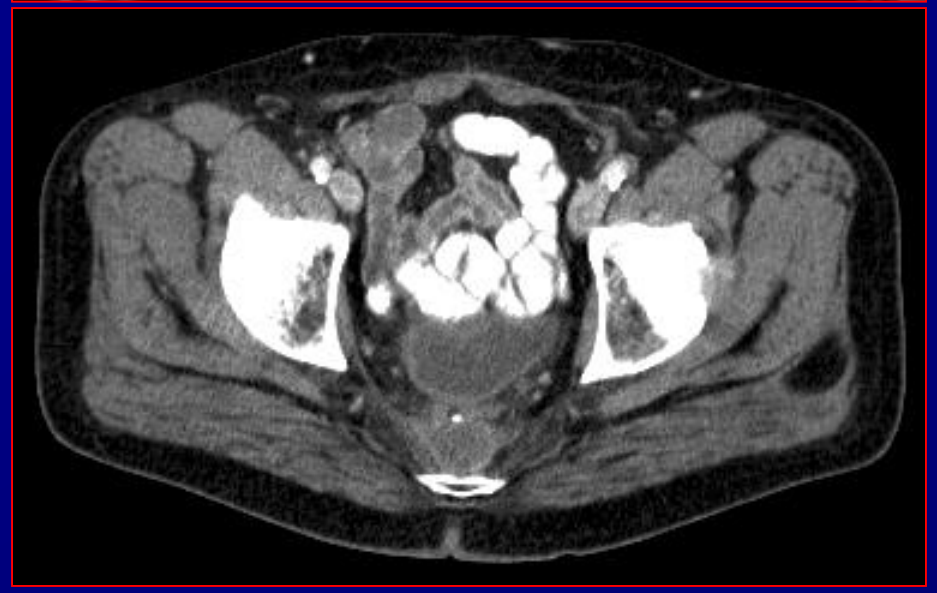
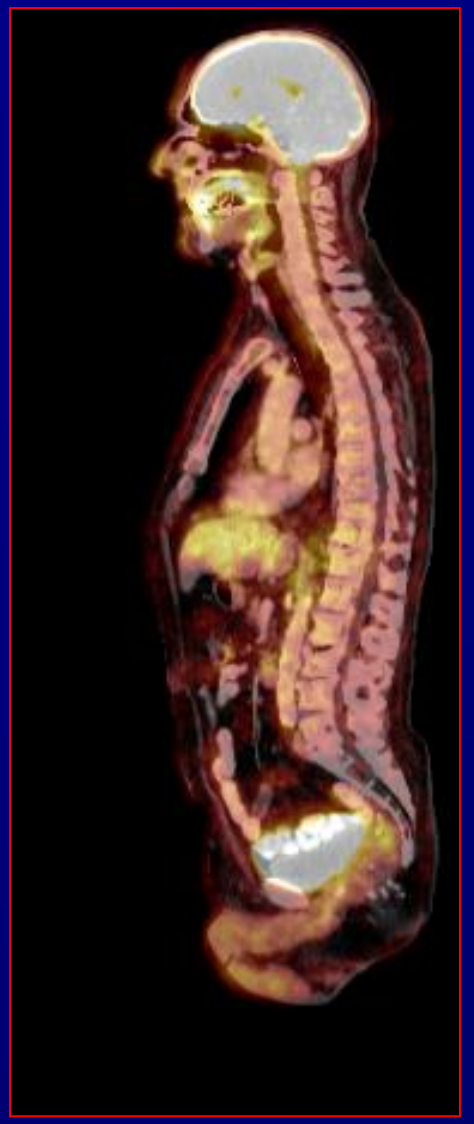
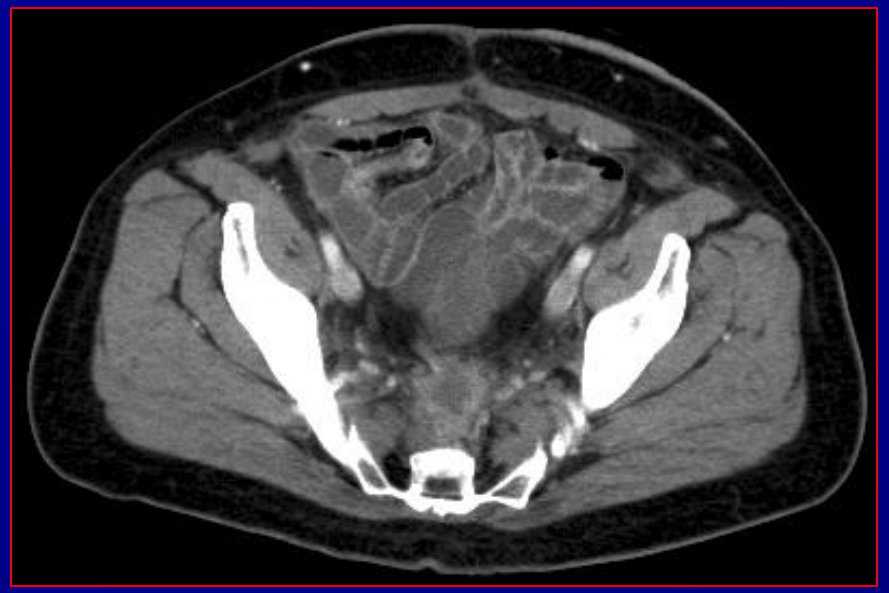
Upper Margin: Resectable Recurrence

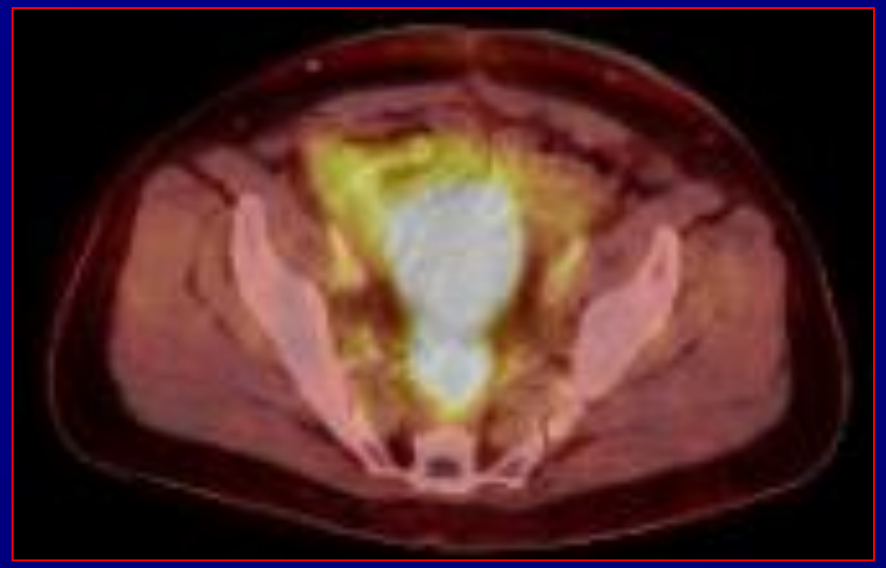


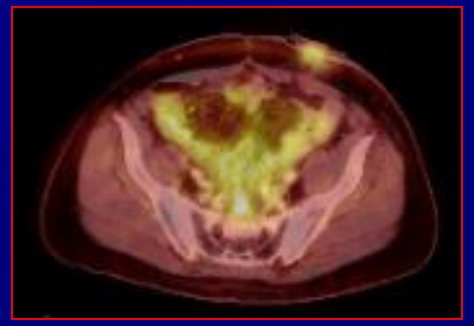


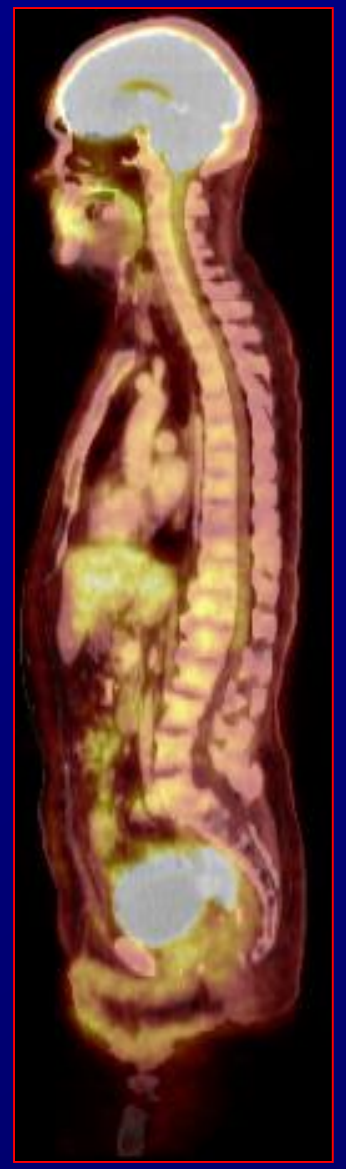


Upper Margin: Unresectable Recurrence



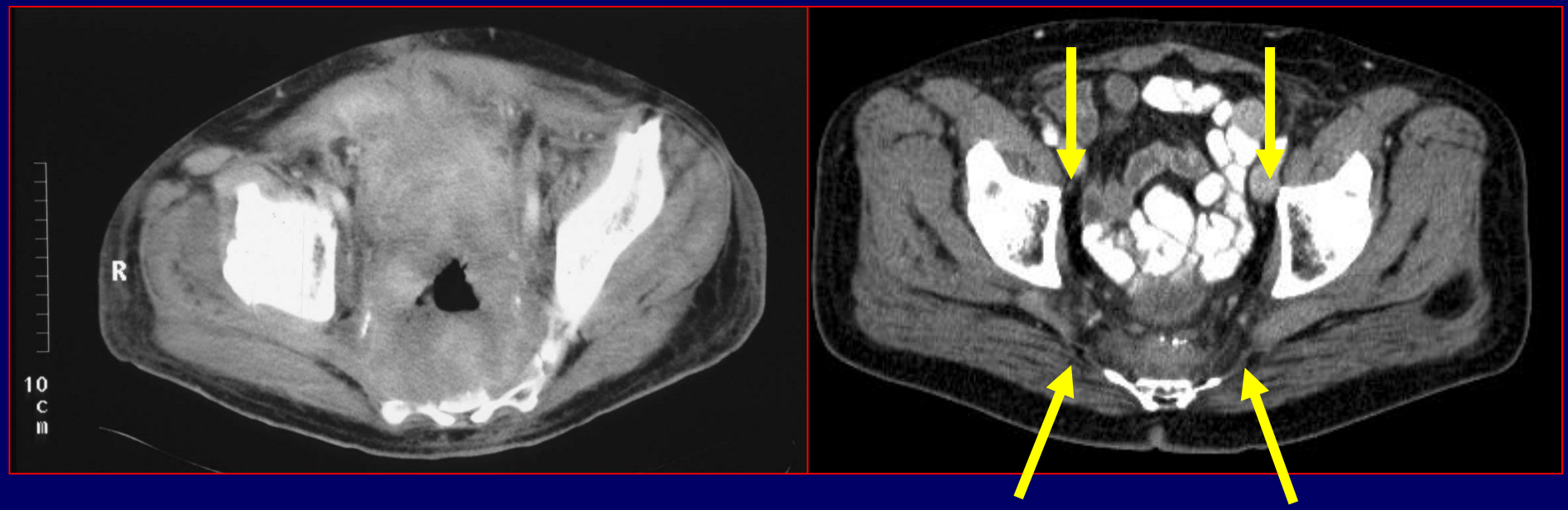






Lateral Margins

Lateral: ureters, iliac vessels, side wall



Involved

Free

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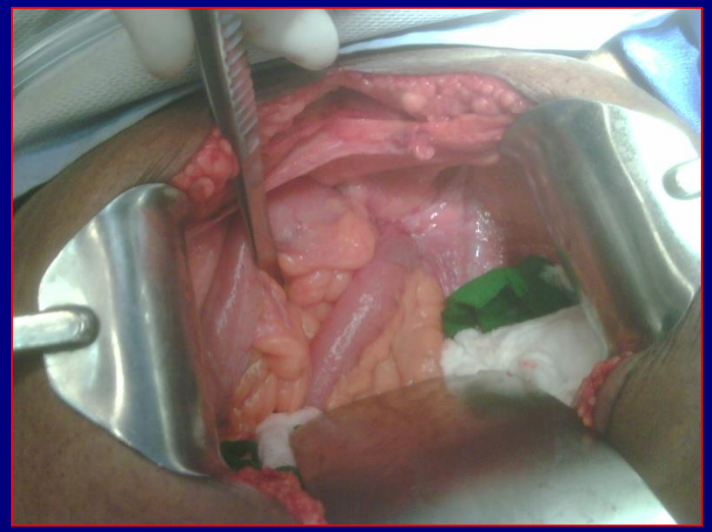
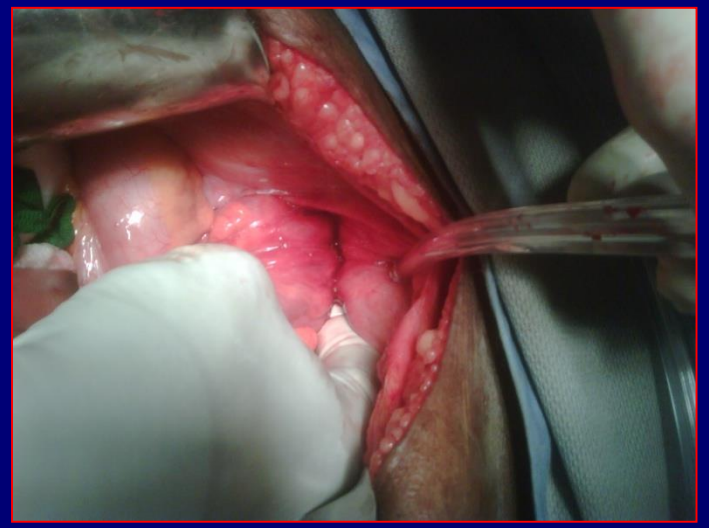
Preoperative Considerations

- Anatomic planes distorted from previous surgery
- Distinction between scar and tumor almost impossible
- Anatomic planes opened at original operation potentially involved by recurrence

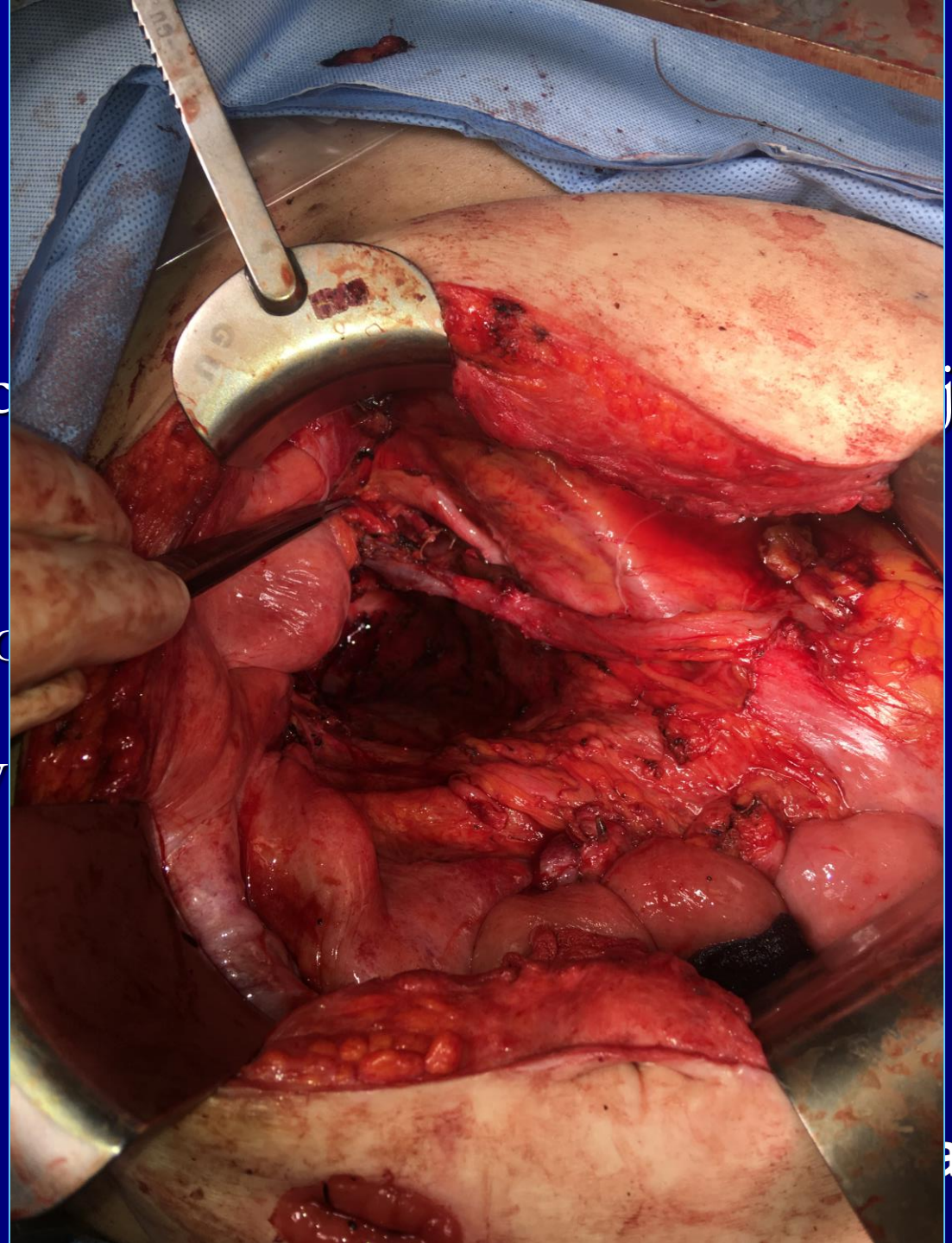
Operative Decisions

- Exclude intra-abdominal spread
- Assess resectability; if you think you can't remove the tumor, don't try
- Start dissection in planes that were normal on imaging
- Work around the tumor
- Avoid opening planes involved by tumor





- En-bloc … jacent organs
- Take fro …
- Identify …



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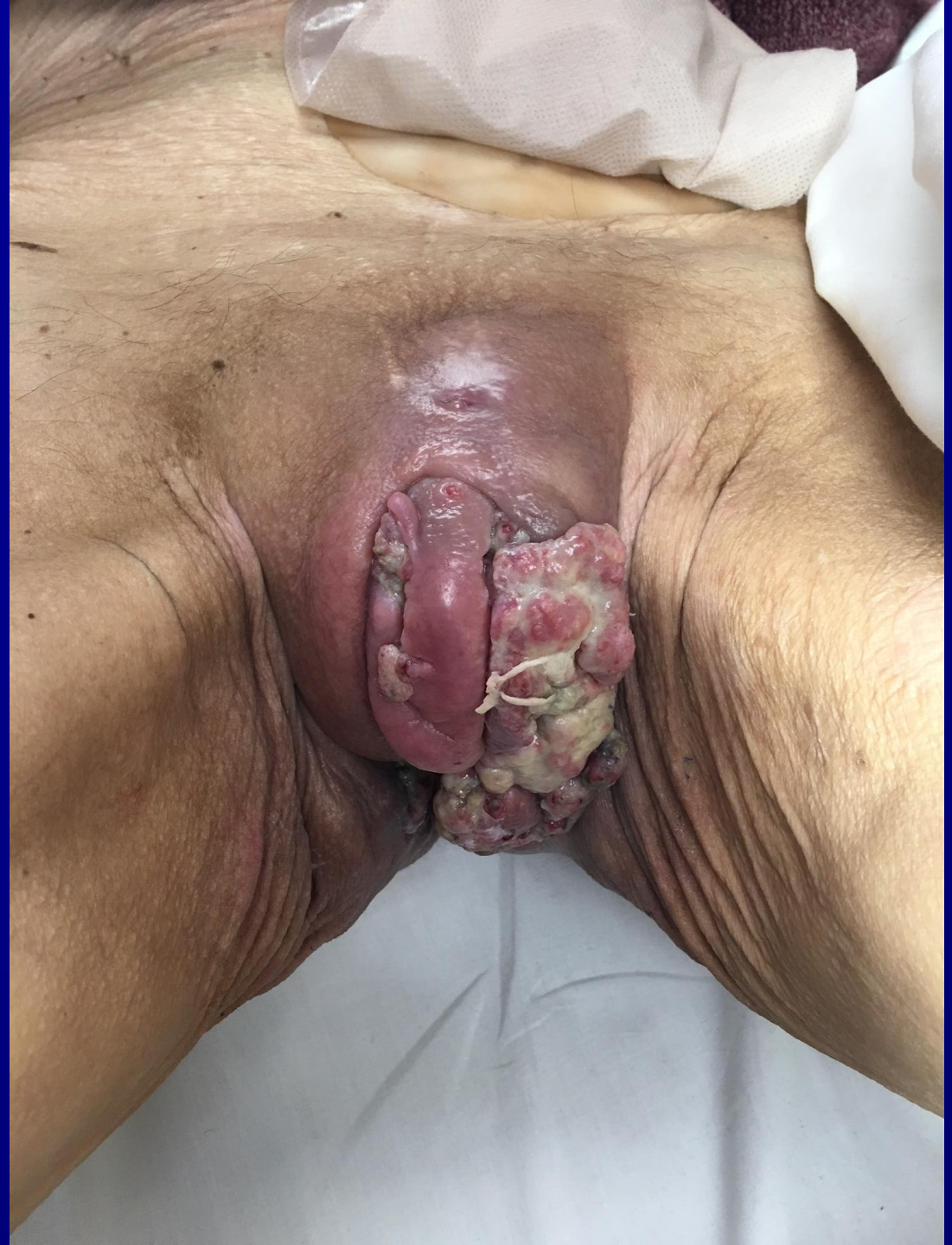

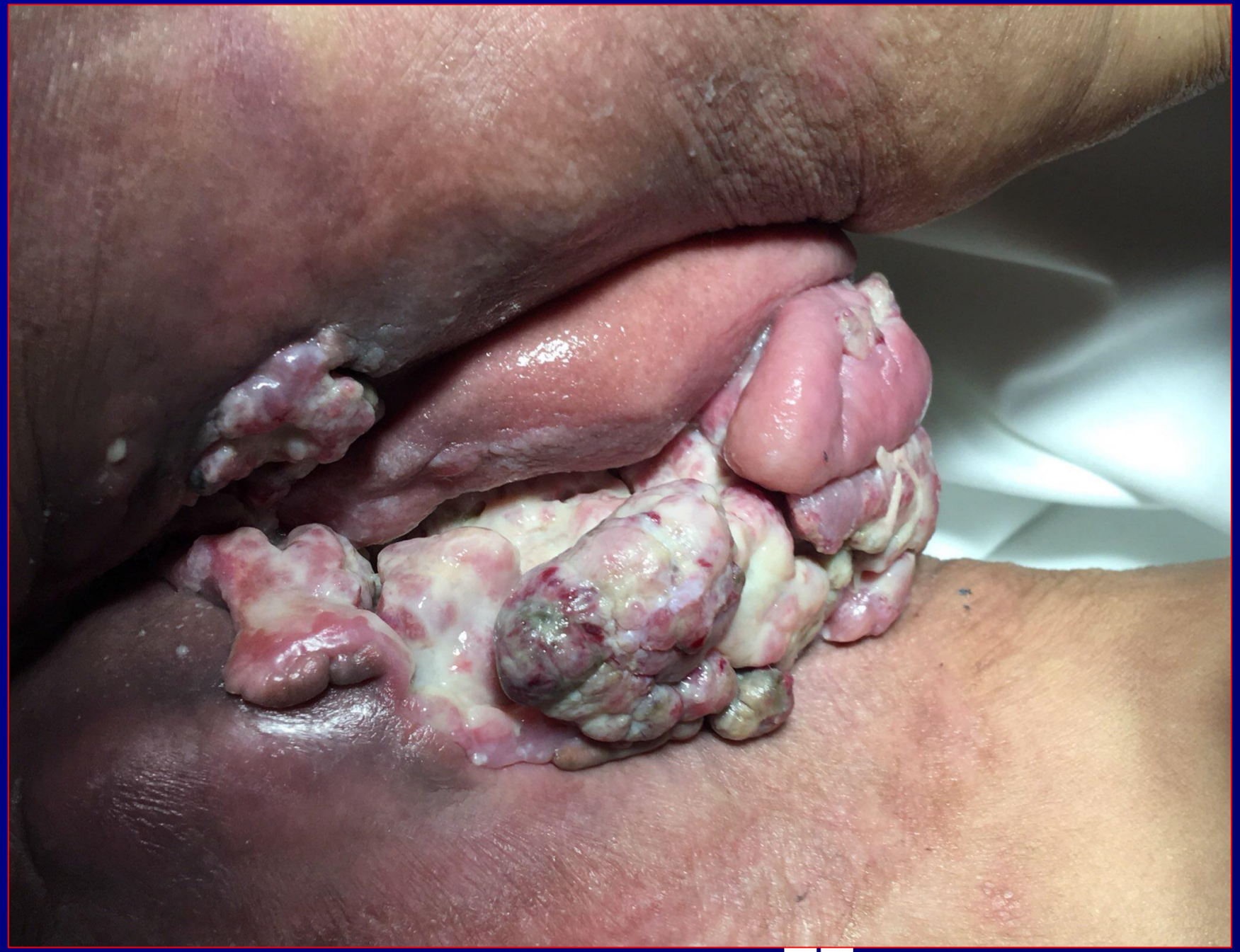

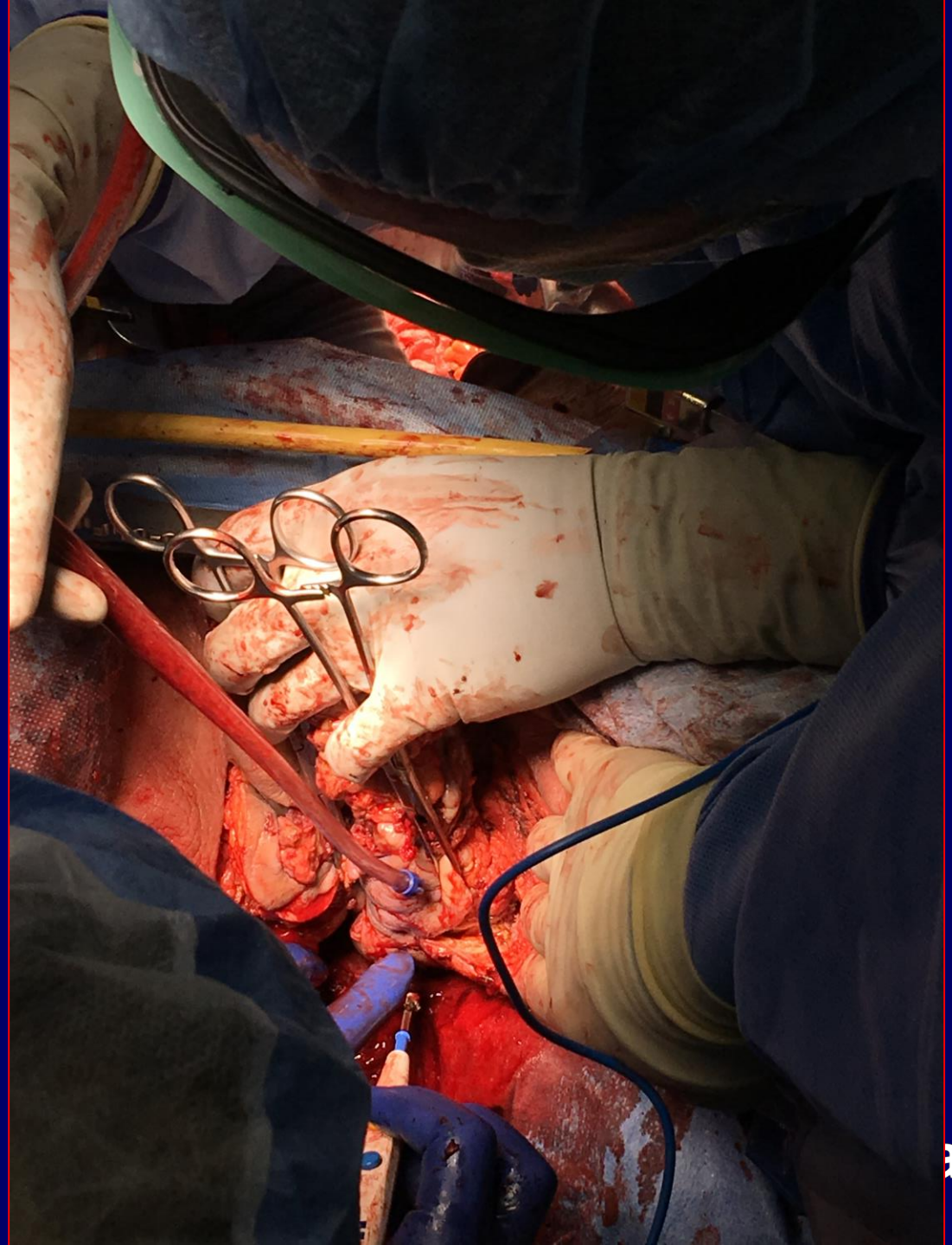

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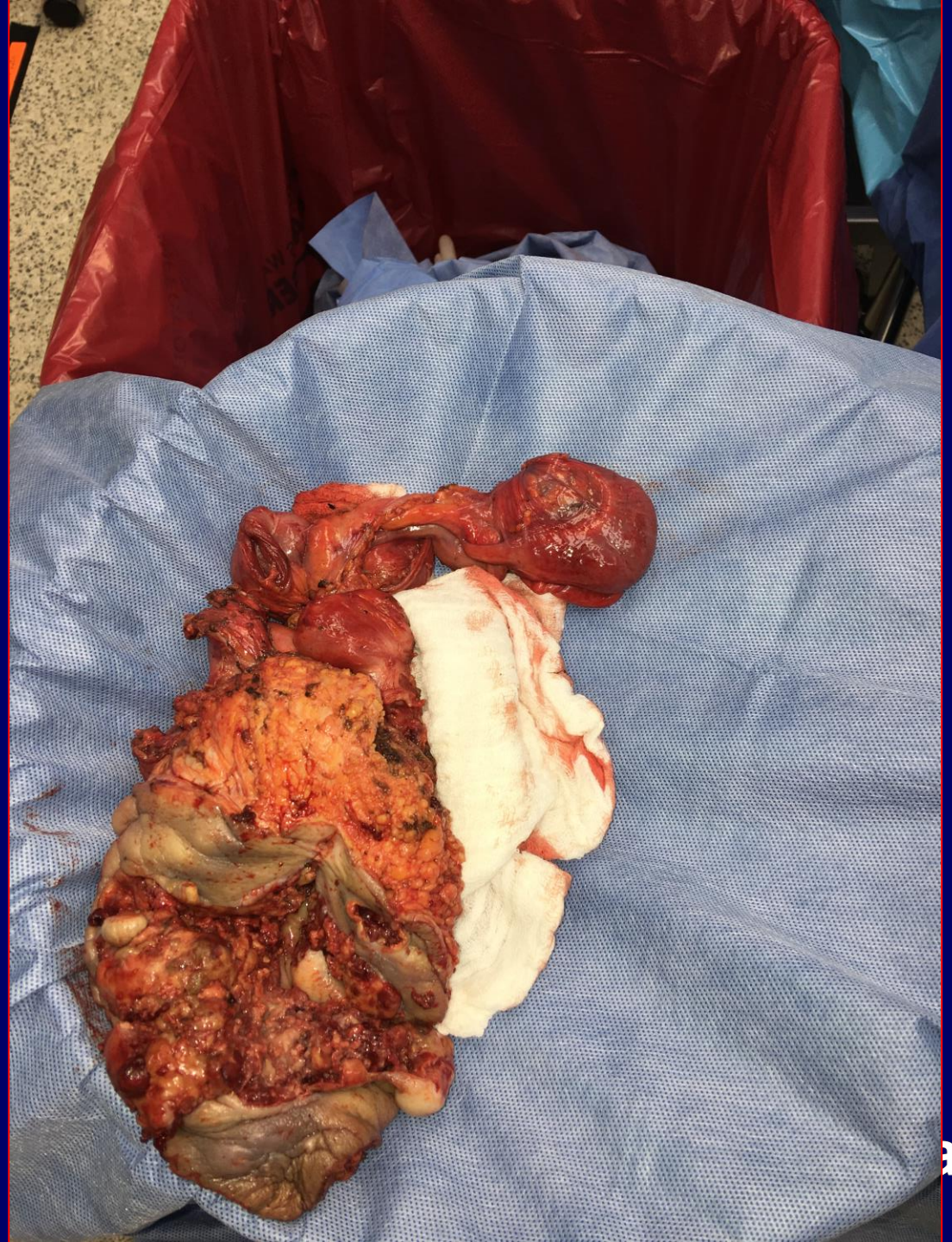

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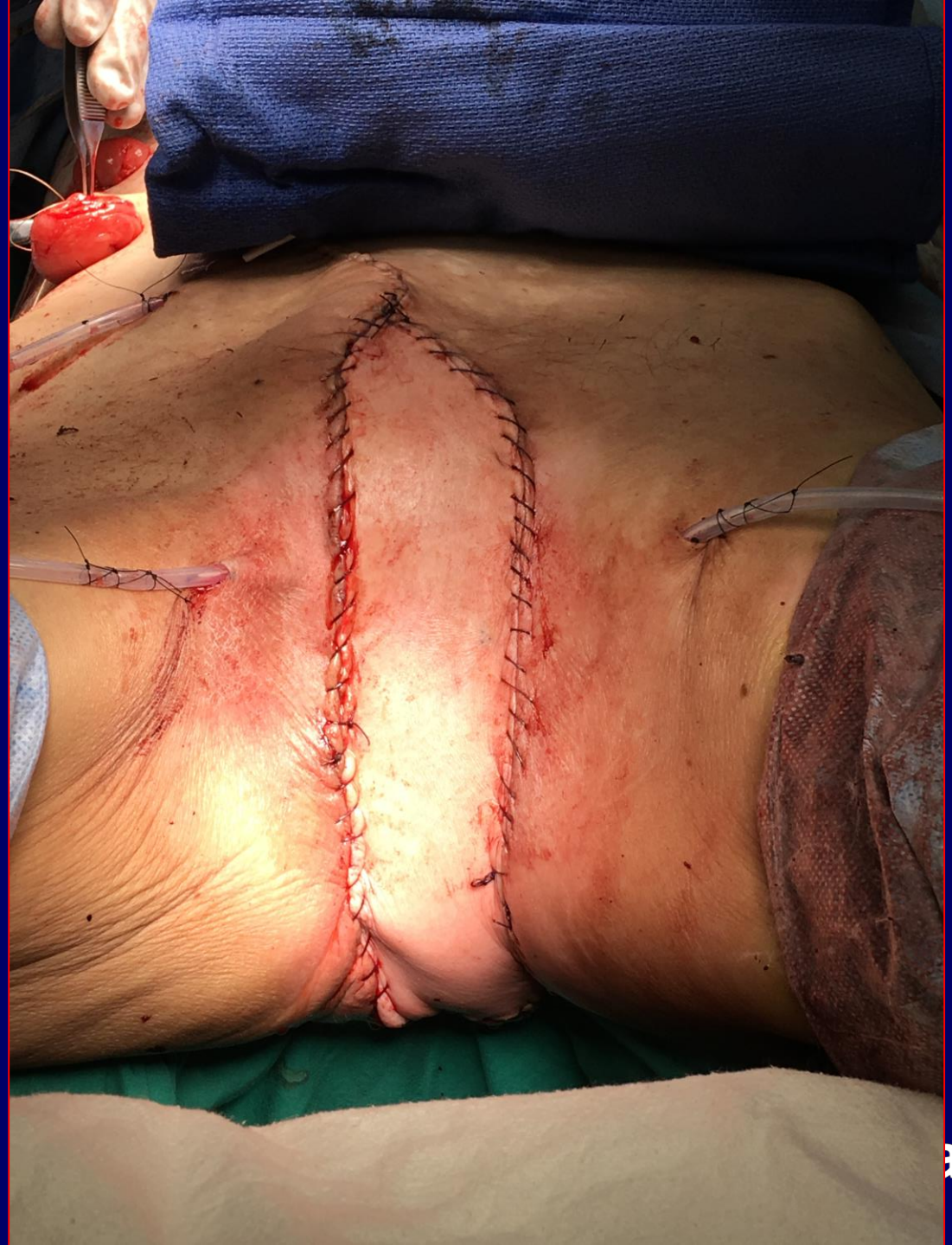

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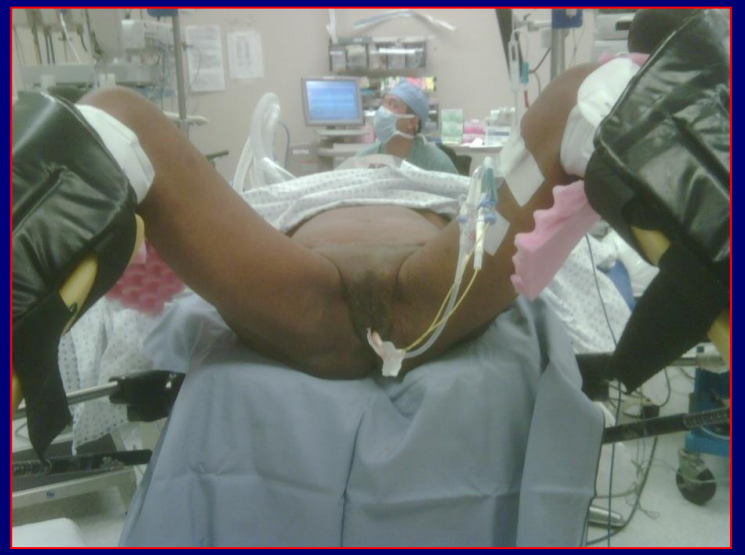
Management of the Urinary System

- Extensive resections often requires complex reconstruction and permanent urinary diversion
- Urinary leaks common after chemoradiation
- Complete cystectomy or prostatectomy better results than partial resection
- Ureteral stents helpful



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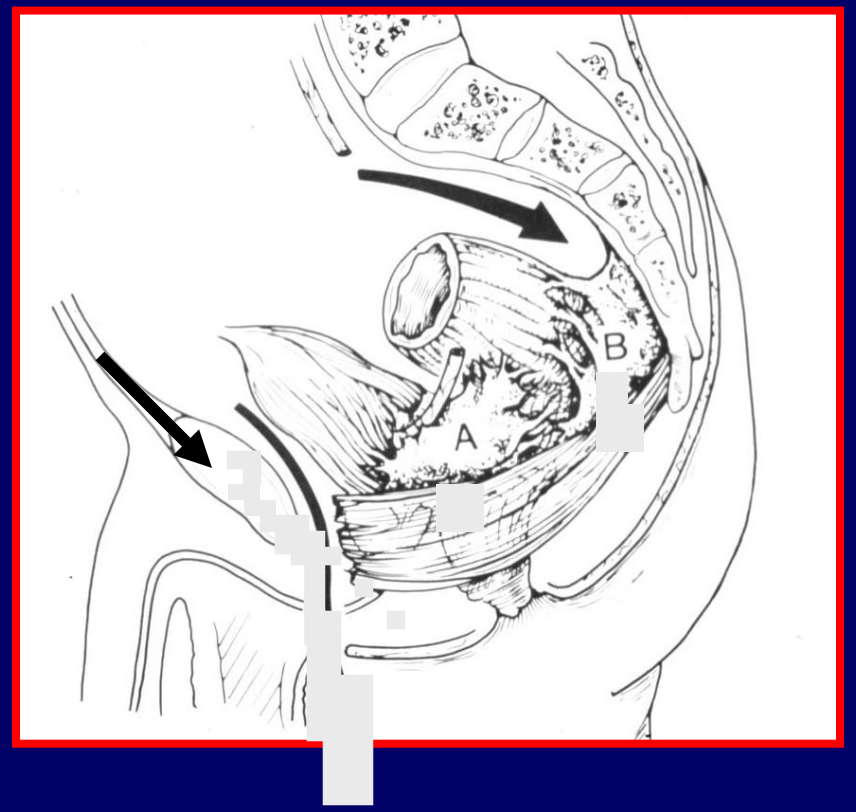
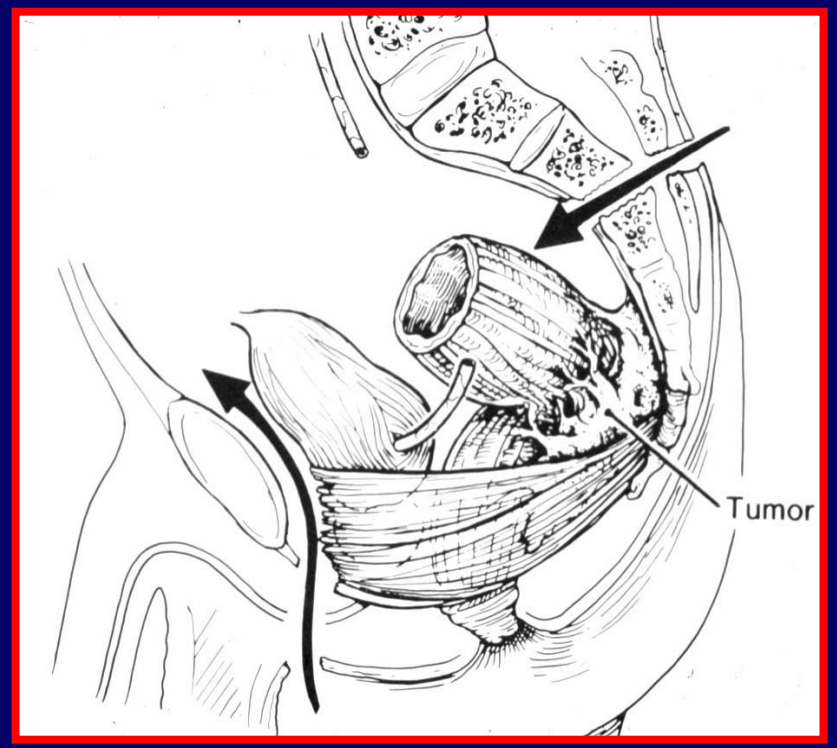
Pelvic Exenteration and Sacrectomy

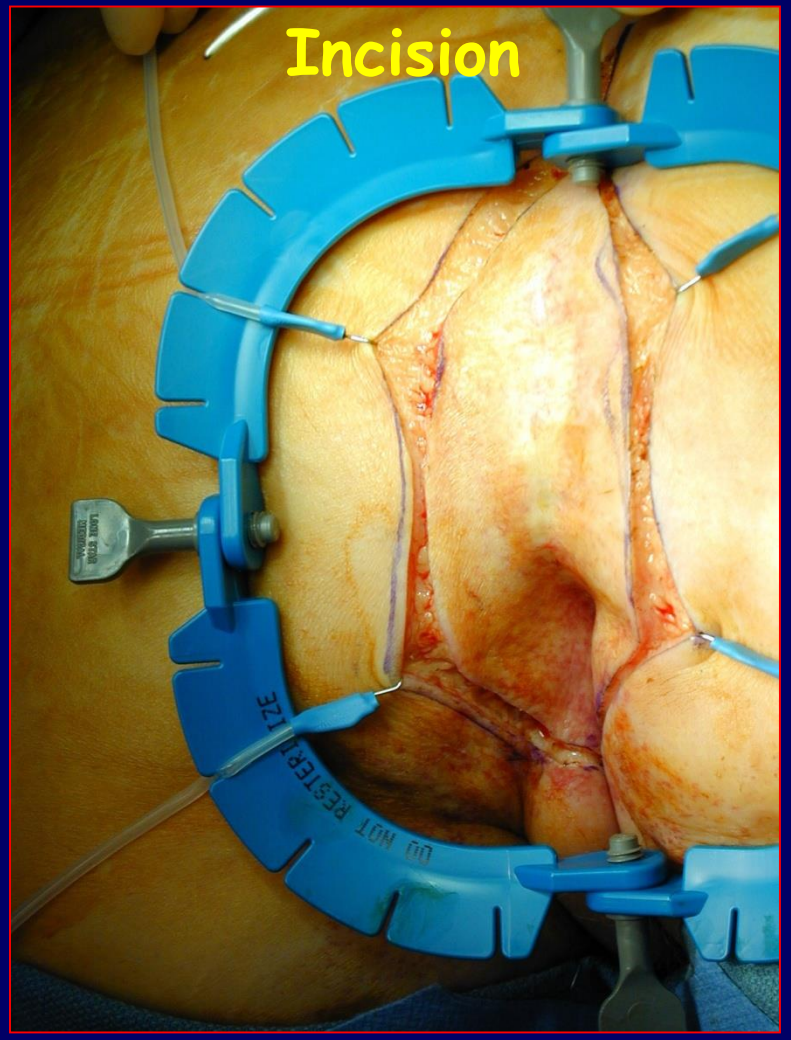
Abdominal approach

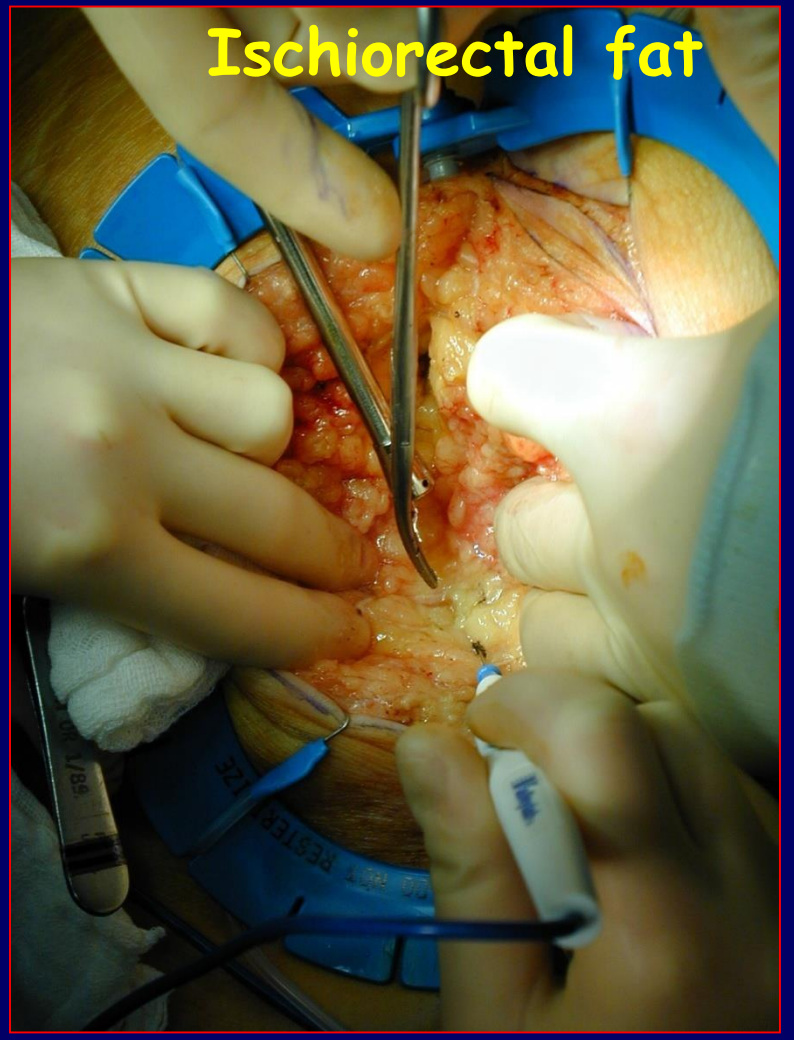


Perineal approach

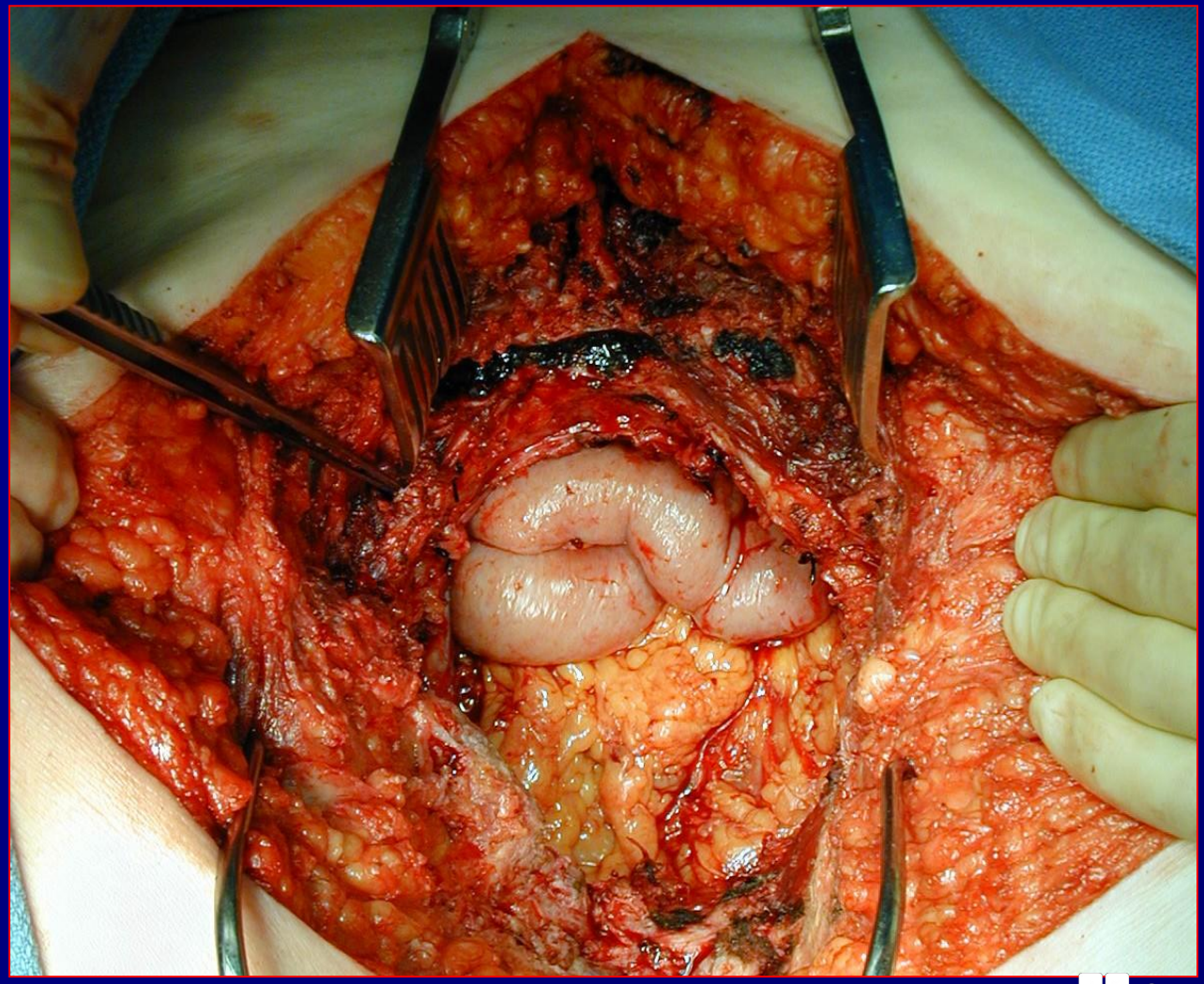


Perineal Dissection

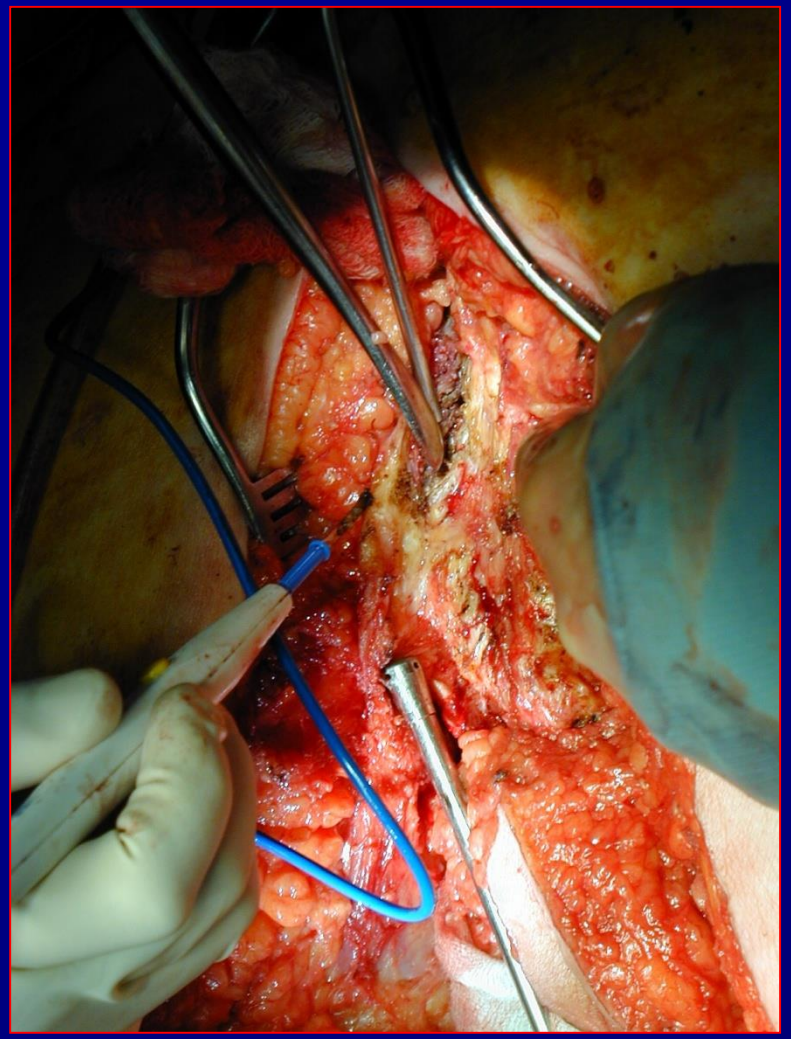




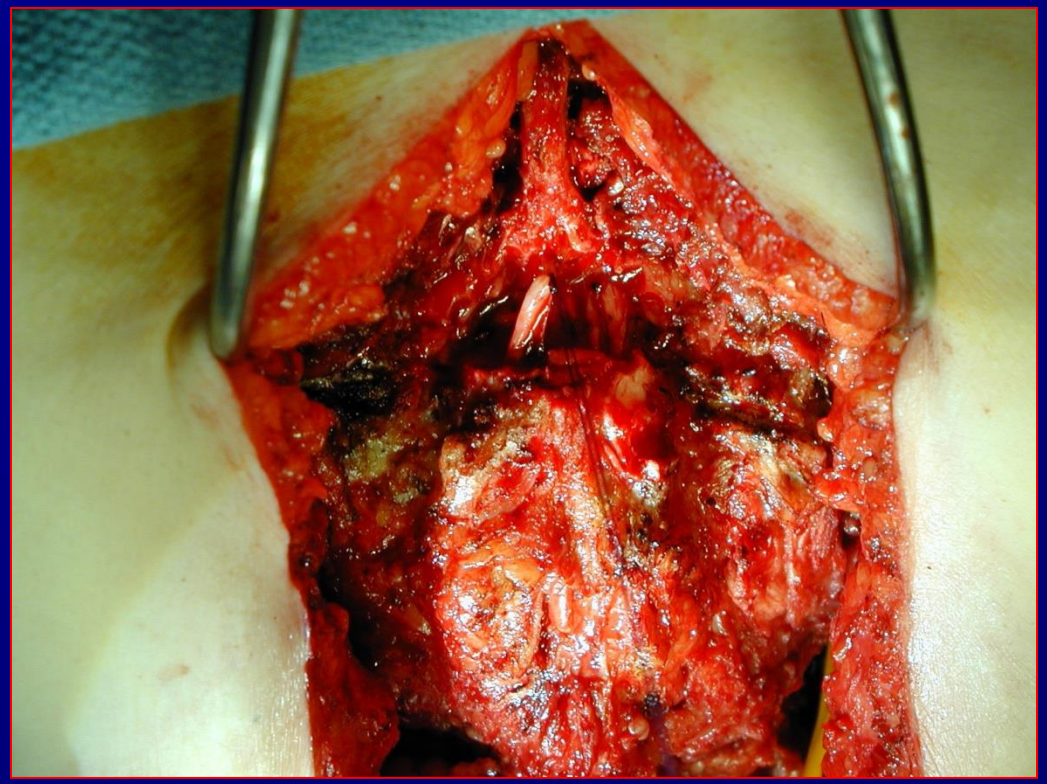
Sacral View



Periosteal Elevation



Laminectomy



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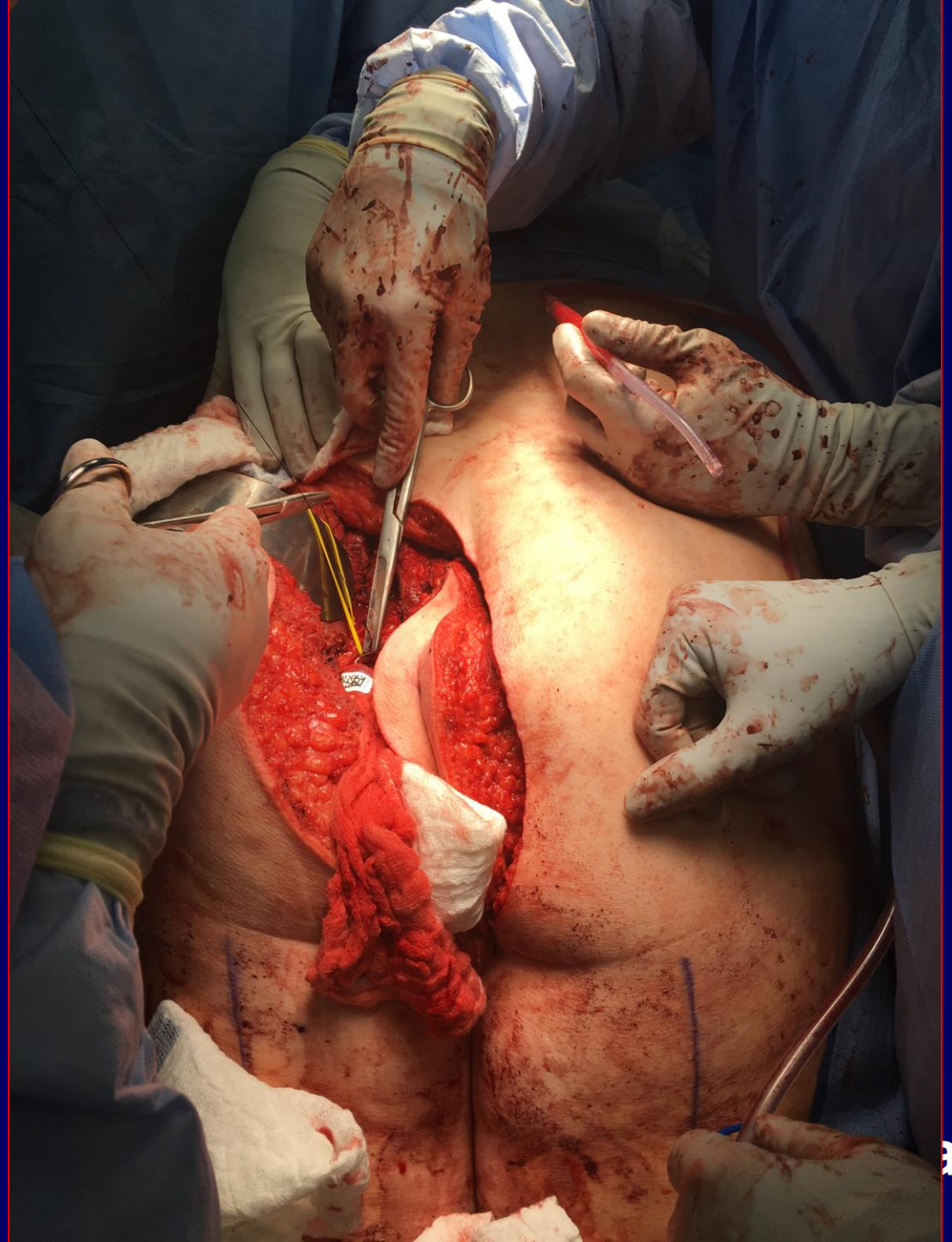

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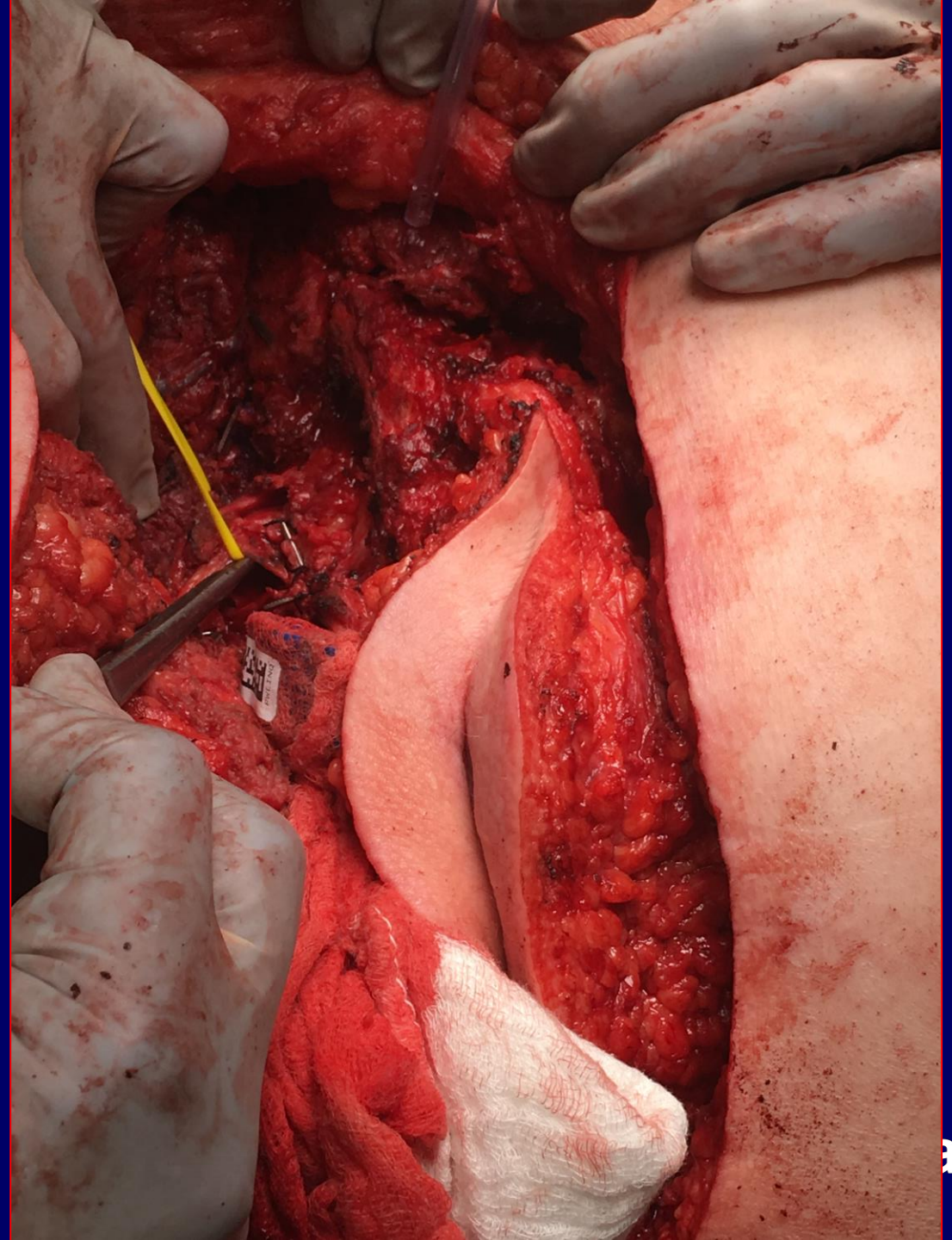

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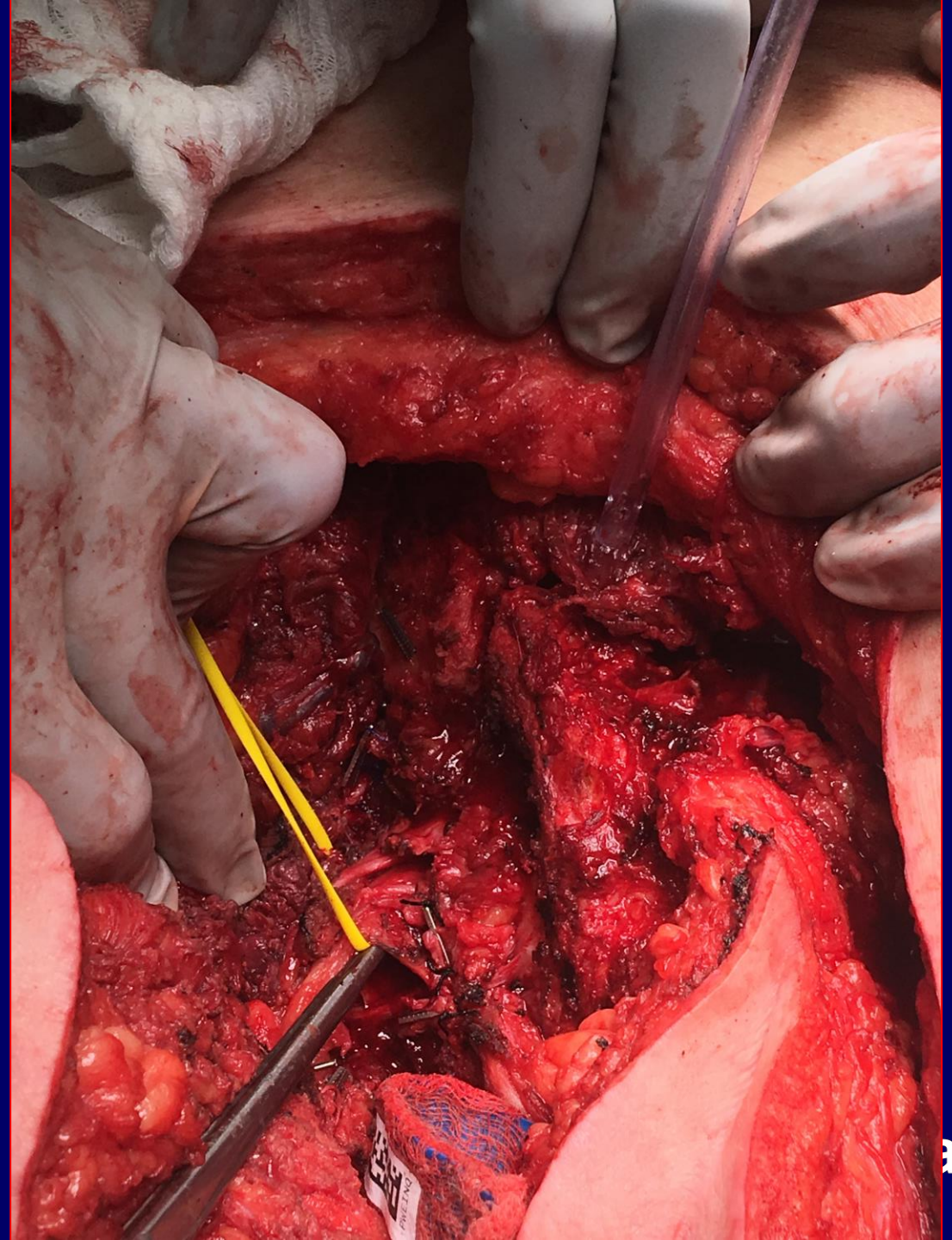

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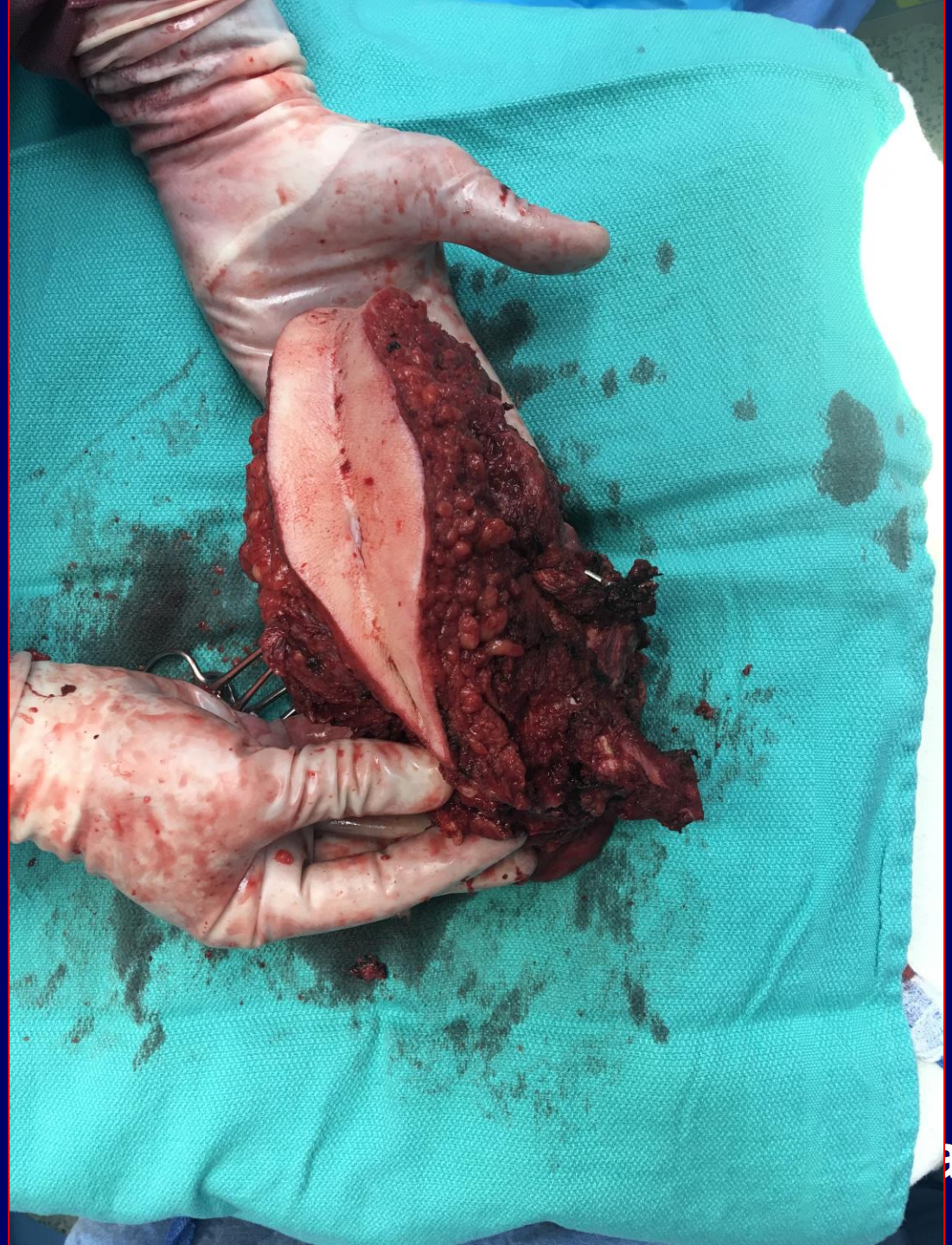

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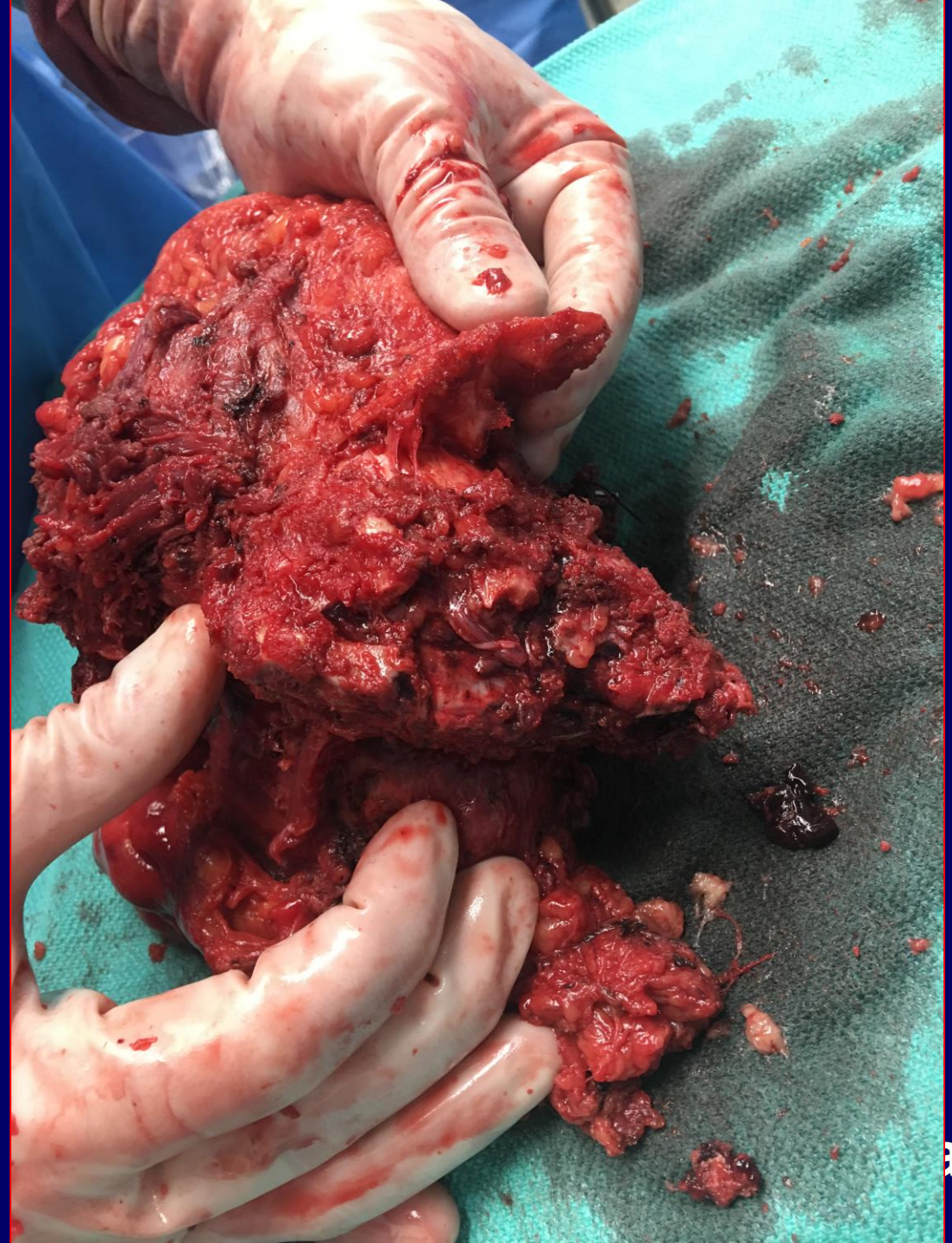

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Reported Outcomes

- 5-year survival
  - R0 resection: 37-60%
  - R1: 22%
  - R2: 10-14%
- Multimodality treatment
  - OS 31% vs. 24% in surgery alone
- Predictors of survival
  - ***R0 resection*** 
  - Multimodality treatment
  - Neoadjuvant radiation

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Author	Year	Number	R0 Resection	Morbidity (%)	Mortality (%)
Salo	1997	131	54	24	<1
Wanebo	1999	61	72	-	8
Garcia-Aguilar	2001	64	-	25	0
Hahnloser	2003	304	45	26	1
Moriya	2004	57	84	58	3
Vermass	2005	59 vs 33	64 vs 45	-	3 vs 0
Boyle	2005	64	37	35	2
Wiig	2006	150	44	46	<1
Maetani	2007	61	-	-	3
Heriot	2008	160	61	27	<1
Schurr	2008	72	51	15	9
Kusters	2009	170	54	-	7
You	2012	46	80	50	0
Bhangu	2014	100	78	53	0
Harris	2016	533	59	-	-
Tanaka	2017	180	74	66	1

Intra-operative Radiotherapy (IORT)

- Indications
  - Close R0 margins
  - Known microscopically positive margins
  - Grossly unresectable pelvic disease
  - After sacrectomy

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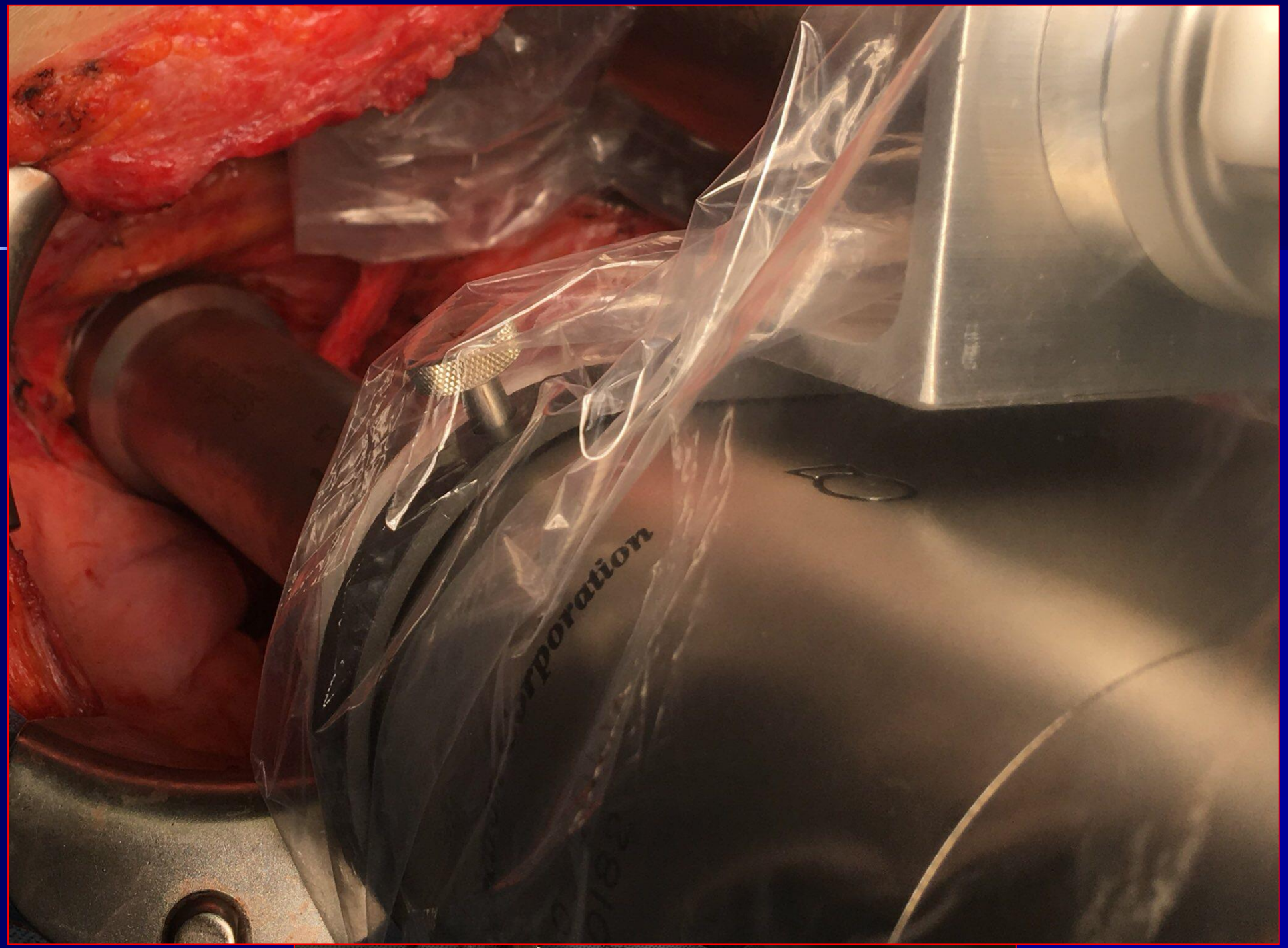
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Intra-operative Radiotherapy (IORT)

- *Controversial Data on efficacy*
- Improved Local control
  - Compared to surgery alone
  - No clear effect on overall survival
  - Treiber 2004, Vermaas 2005, Hyngstrom 2014, Brady 2017
- Others: No difference in Local control or Survival
  - Wiig 2002, Tan 2013
- Most studies too underpowered to make definitive conclusions

Indication	Dose (cGy)
Minimal Residual Disease	1000
Gross residual Disease (R1 - <2cm)	1500
Gross residual Disease (R2, >2cm)	2000

Conclusion

- High morbidity
- Potentially curable
- Multidisciplinary team is critical
- Long-term survival in recurrent disease is possible if:
  - recurrence is truly isolated
  - diagnosed early
  - treated aggressively
  - resected with negative margins

Cleveland Clinic

Department of Colorectal Surgery
Our Mission

To be leaders of Colorectal Surgery, rooted in our heritage, committed to the care of our patients, well-being of each other, and excellence in research, innovation, and education.

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Every life deserves world class care.