

Cytoreductive Surgery for Advanced Ovarian Cancer: Pelvis - *En bloc pelvic resection*



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Disclosure

- *No relevant conflict of interest to disclose.*

Pelvic Exenteration for Locally Advanced/Recurrent Ovarian Cancer

HUGH R.K. BARBER AND ALEXANDER BRUNSCHWIG

Memorial Hospital for Cancer and Allied Disease, New York, New York

Surgery 1965; 58: 935-937.

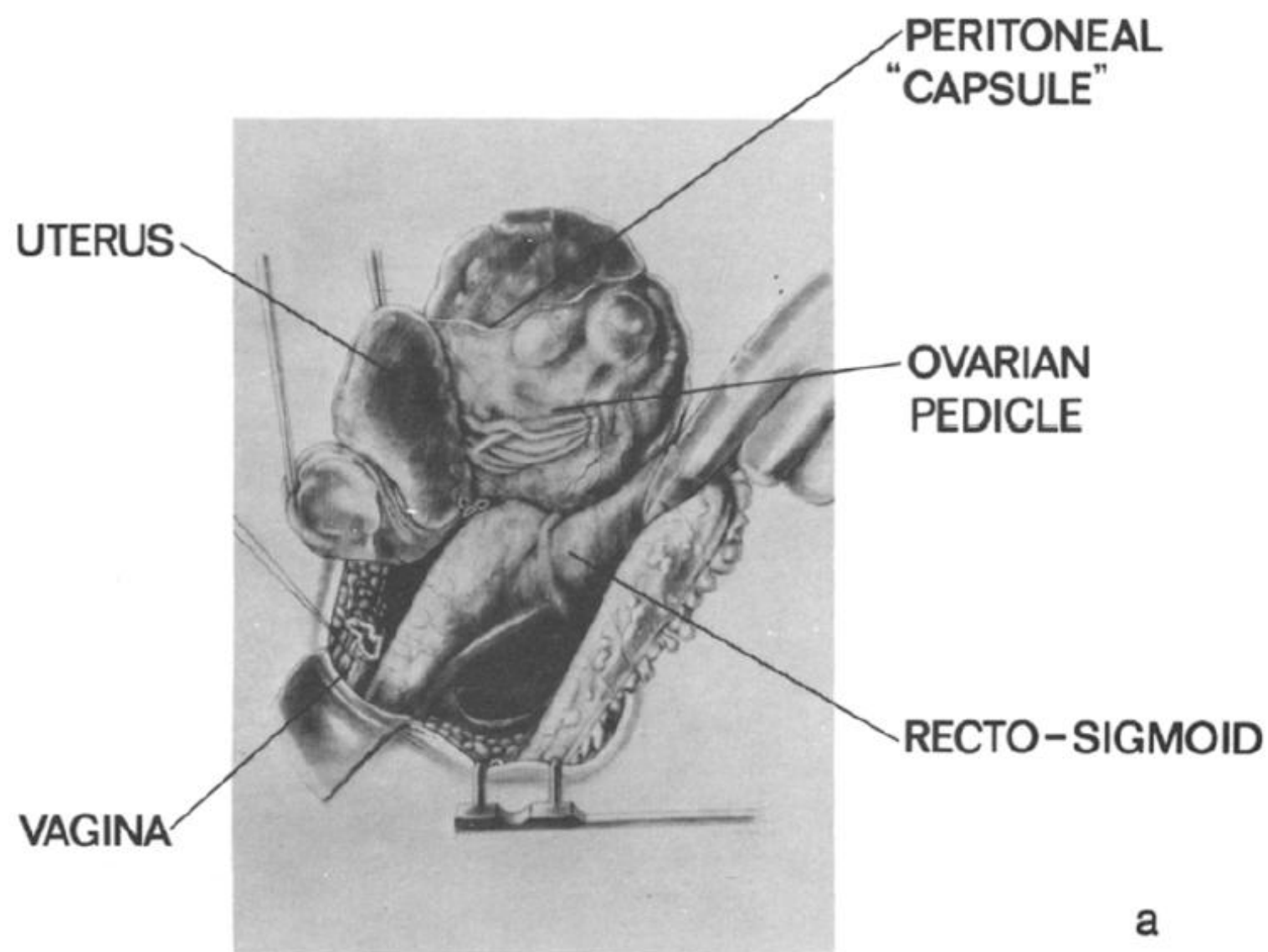
- Review of **22 cases** 1947-1962
- Prior surgery or irradiation in 21 cases
- TPE in 19 cases, APE in 3 cases
- **Overall survival at 5-years = 7%**
- **Peri-operative mortality rate = 22.7%**

Surgical Treatment of Ovarian Cancer

C. N. HUDSON, FRCS, FRCOC

AND

M. CHIR, FRCS, FRCOG



En bloc pelvic resection terminology

- Radical oophorectomy
- En bloc rectosigmoid colectomy (en bloc low anterior resection)
- Reverse hysterocolposigmoidectomy
- Complete parietal and visceral peritonectomy of the pelvis
- En bloc pelvic peritoneal resection of the pelvic viscera
- Stripping of pelvic peritoneum with rectosigmoidectomy
- Modified posterior pelvic exenteration

Berek, 1984; Sonnendecker, 1989; Eisenkop, 1991; Soper, 1991; Barnes, 1991; Bridges, 1993; Sugarbaker, 1996; de la Cuesta, 1996; Clayton, 2002; Bristow, 2003; Chi, 2005; Aletti, 2006; Park, 2006

Indications for en bloc pelvic resection with rectosigmoid colectomy

- 1) Gross & frozen section evidence of ovarian cancer
- 2) Extensive, confluent tumor involving adnexae and peritoneum, cul-de-sac, posterior uterine surface, and rectosigmoid colon
- 3) Complete disease removal not possible with TAH-BSO and piecemeal dissection
- 4) Optimal (no gross) residual disease achievable
- 5) No medical contraindication

Role of Rectosigmoidectomy and Stripping of Pelvic Peritoneum in Outcomes of Patients with Advanced Ovarian Cancer

Giovanni D Aletti, MD, Karl C Podratz, MD, PhD, FACS, Monica B Jones, MD, William A Cliby, MD, FACS

J Am Coll Surg 2006;203:521–526.

- Stage IIIC/IV EOC + CDS tumor (n=209)
5-year Overall Survival

SoP (n=77)	37%
RS (n=57)	39%
neither (n=75)	6% (p<0.0001)

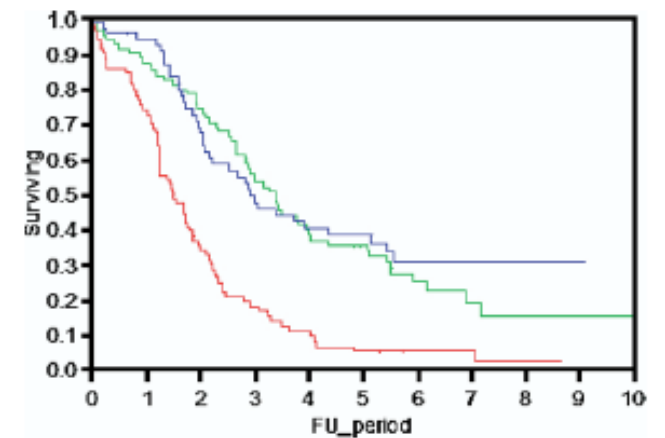


Figure 1. Kaplan-Meier curves in Stage IIIC-IV ovarian cancer patients with cul-de-sac involvement (n = 209), stratified by performance of the following operations: 0 (red line), none; 1 (green line), stripping of the pelvic peritoneum; 2 (blue line), rectosigmoidectomy (p < 0.001, log-rank). FU, followup (yr).

- Subgroup – no gross residual disease
5-year Overall Survival

SoP	50%
RS	89% (p=0.04)

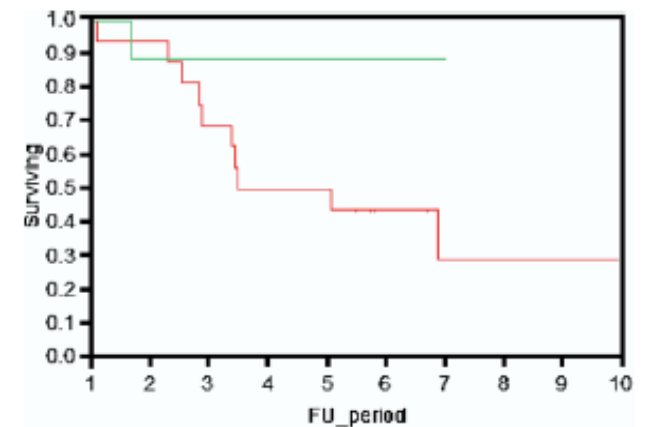


Figure 3. Kaplan-Meier curves in IIIC-IV ovarian cancer patients with cul-de-sac involvement and no gross residual disease (microscopic only) (n = 25), stratified by performance of the following operations: 1 (red line), stripping of the pelvic peritoneum (n = 16); 2 (green line), rectosigmoidectomy (n = 9, p = 0.04, log-rank). No marked difference was observed in the initial extent of upper abdominal disease in these two groups. FU, followup (yr).

Is the Decision for Colorectal Resection Justified by Histopathologic Findings: A Prospective Study of 100 Patients with Advanced Ovarian Cancer

Hermann Hertel, M.D., Herbert Diebolder, M.D., Jörg Herrmann, M.D., Christhardt Köhler, M.D., Rosemarie Kühne-Heid, M.D.,* Marc Possover, M.D., and Achim Schneider, M.D., MPH¹

*Department of Gynecology and *Institute of Pathology, Friedrich-Schiller-University of Jena, Bachstrasse 18, D-07740 Jena, Germany*

Gynecologic Oncology 83, 481–484 (2001)

- Stage IIIC EOC + RS Colectomy (n=100)
- Pathologic findings
 - Tumor involving RS colon in 73% (negative in 27%)

serosa 28%

muscularis 31%

mucosa 14%

<u>Resection Margins</u>	
Negative	85%
Micro Positive	11%
Gross Positive	4%

- Pelvic recurrence

- Optimal pelvic resection 4.7% (n=85)
- Suboptimal pelvic resection 60% (n=15)

Role of en bloc pelvic resection and extensive abdominal surgical procedures as part of maximal cytoreductive surgery in advanced ovarian cancer

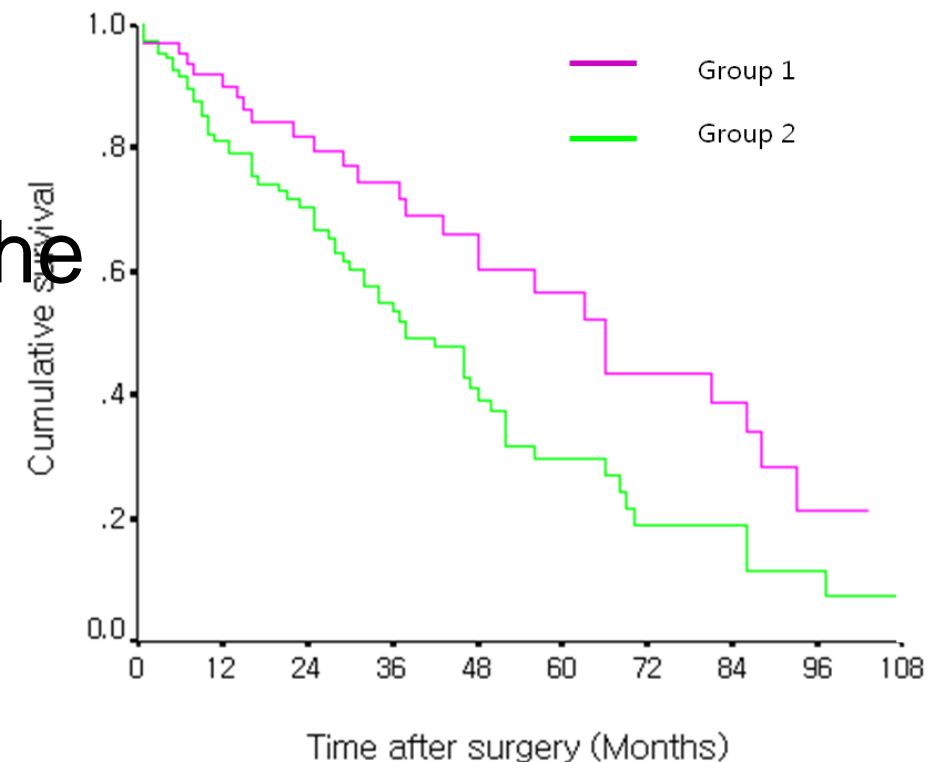
Suk-Joon Chang¹, Robert E. Bristow², Hee-Sug Ryu¹

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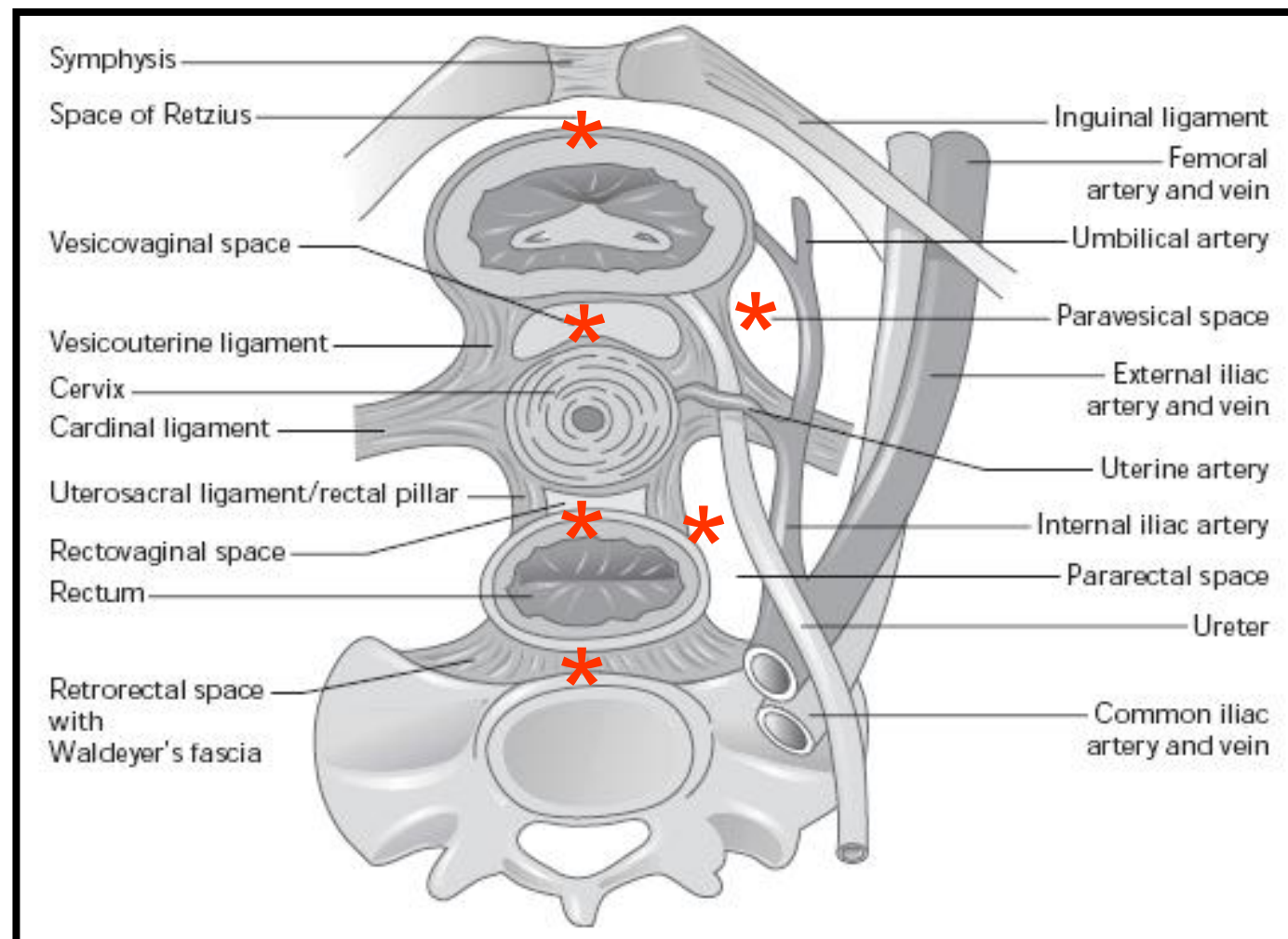
(In Press, 2014)

- 179 consecutive ovarian cancer patients
 - FIGO stage IIIC-IV
 - tumors extensively infiltrating into adjacent pelvic organs and obliterating the cul-de-sac
- Two groups
 - Group 1: En bloc pelvic resection
 - Group 2: Simple pelvic surgery



Key steps in en bloc pelvic resection

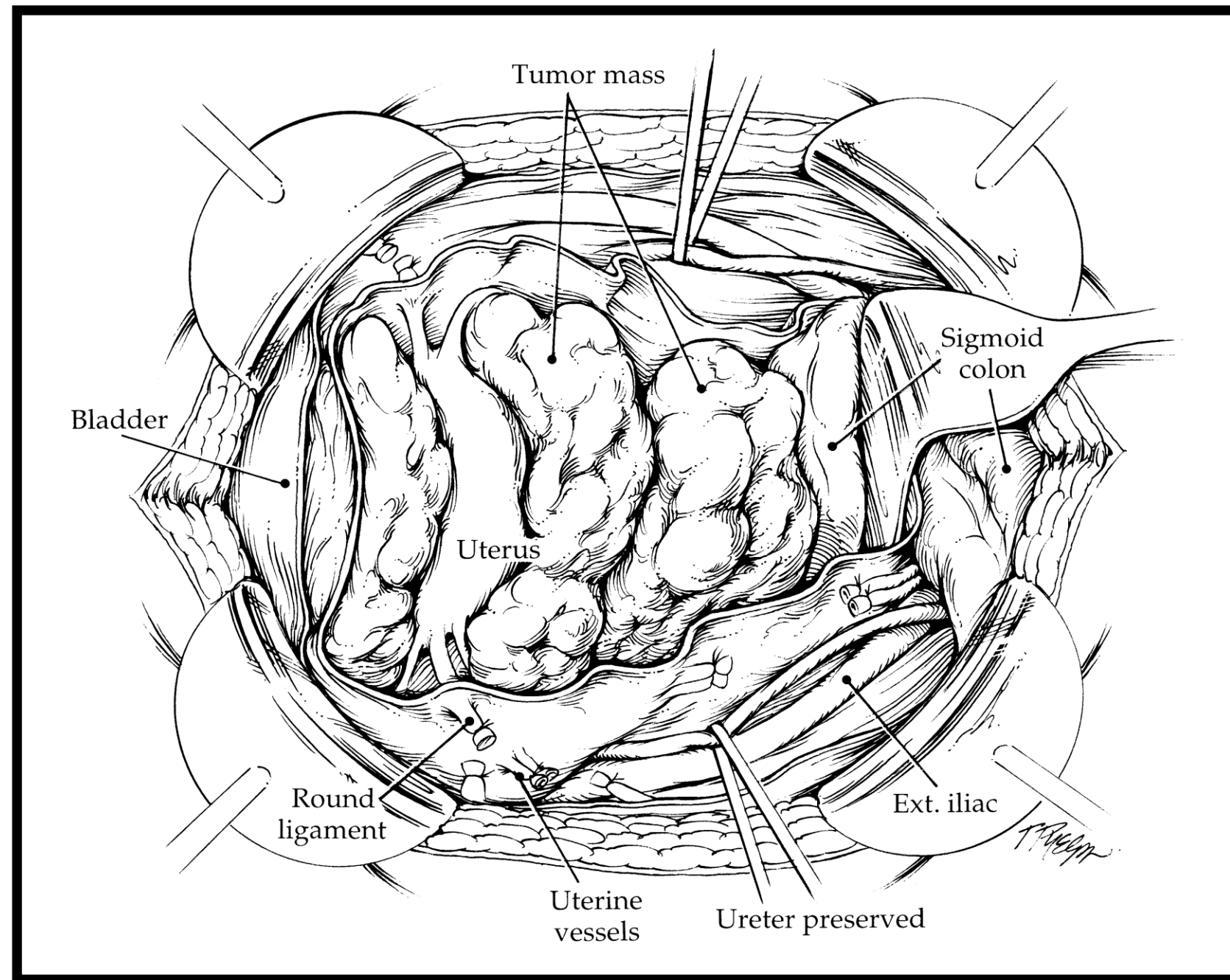
- Circumscribing pelvic peritoneal incision
- Centripetal retroperitoneal dissection
- Utilization of all potential spaces



Key steps in en bloc pelvic resection

- Isolation / mobilization of ureters
- Division of ovarian vascular pedicles
- Division of uterine vascular pedicle / parametria
- Anterior pelvis deperitonealization, mobilization of bladder off anterior vagina
- Division of sigmoid colon above uppermost extent of disease with “wedge” of sigmoid mesentery
- Maintain “false capsule” of cul-de-sac and tumor

Key steps in en bloc pelvic resection

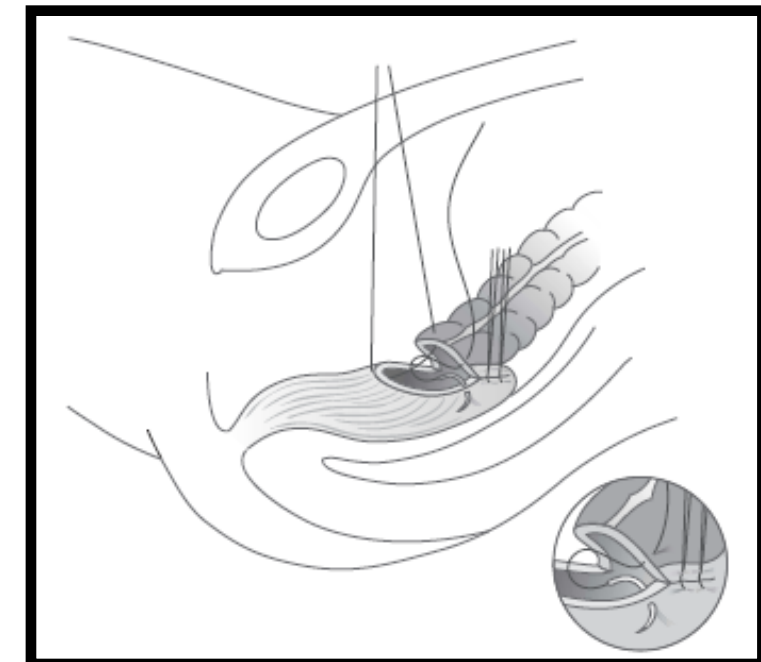
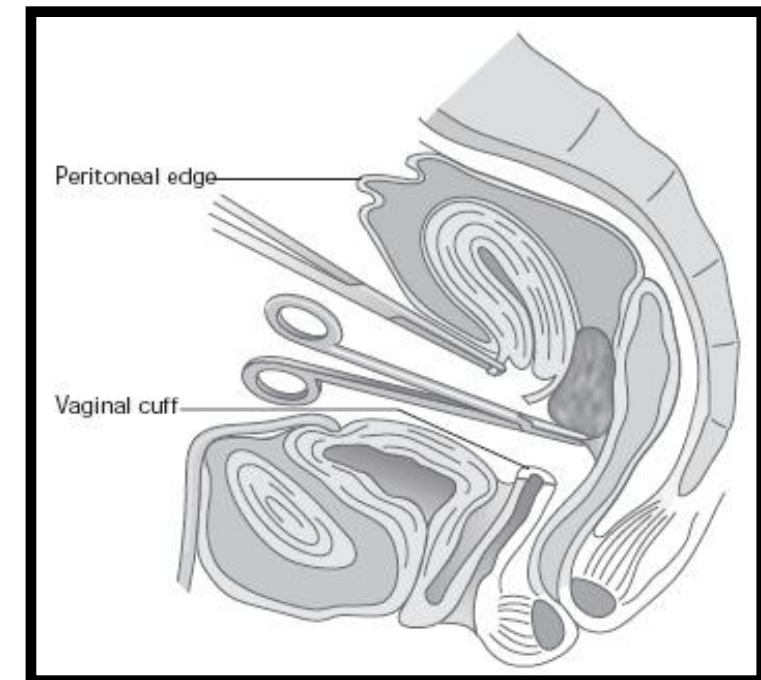
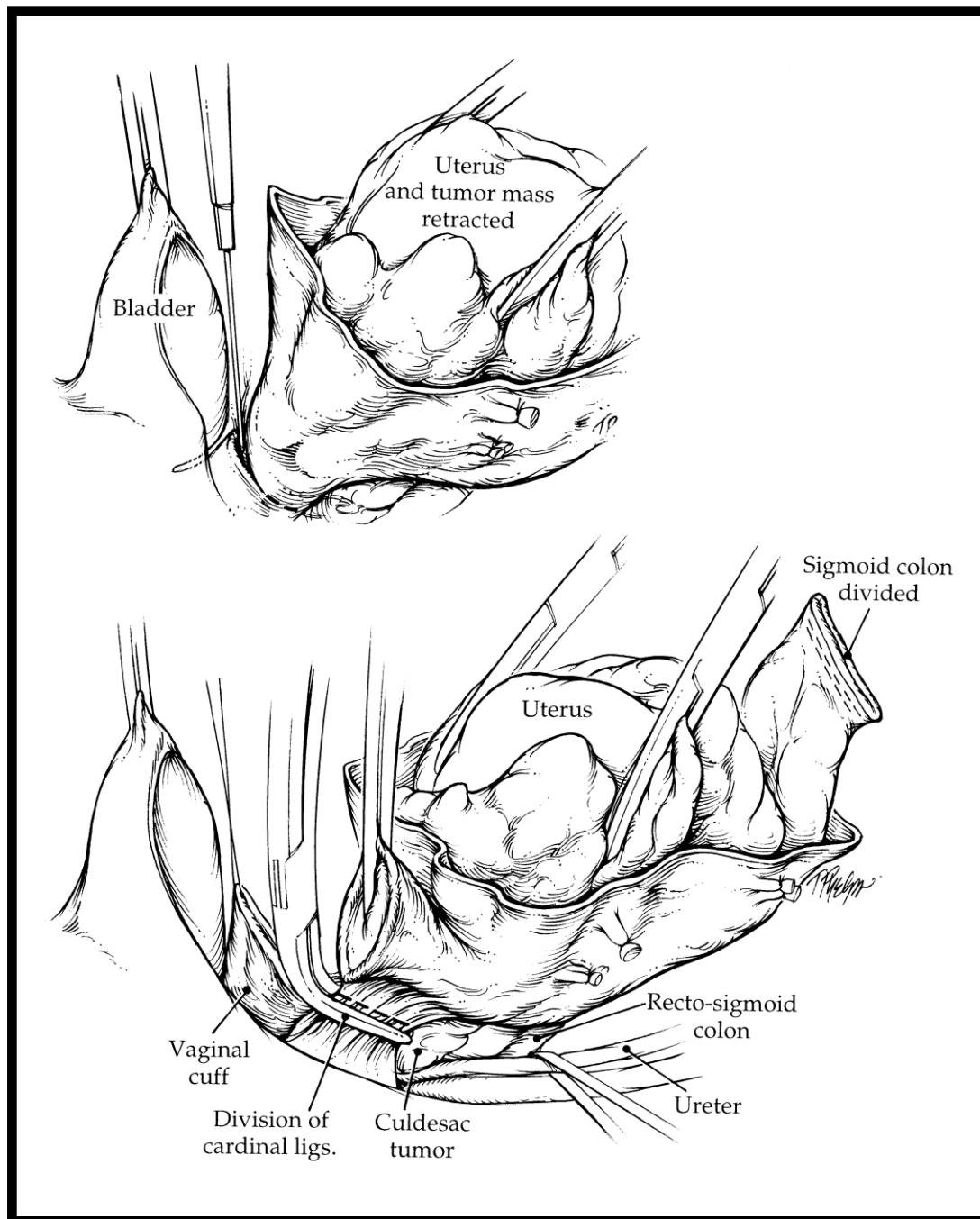


Bristow RE et al. J Am Coll Surg 2003; 197: 565.

Key steps in en bloc pelvic resection

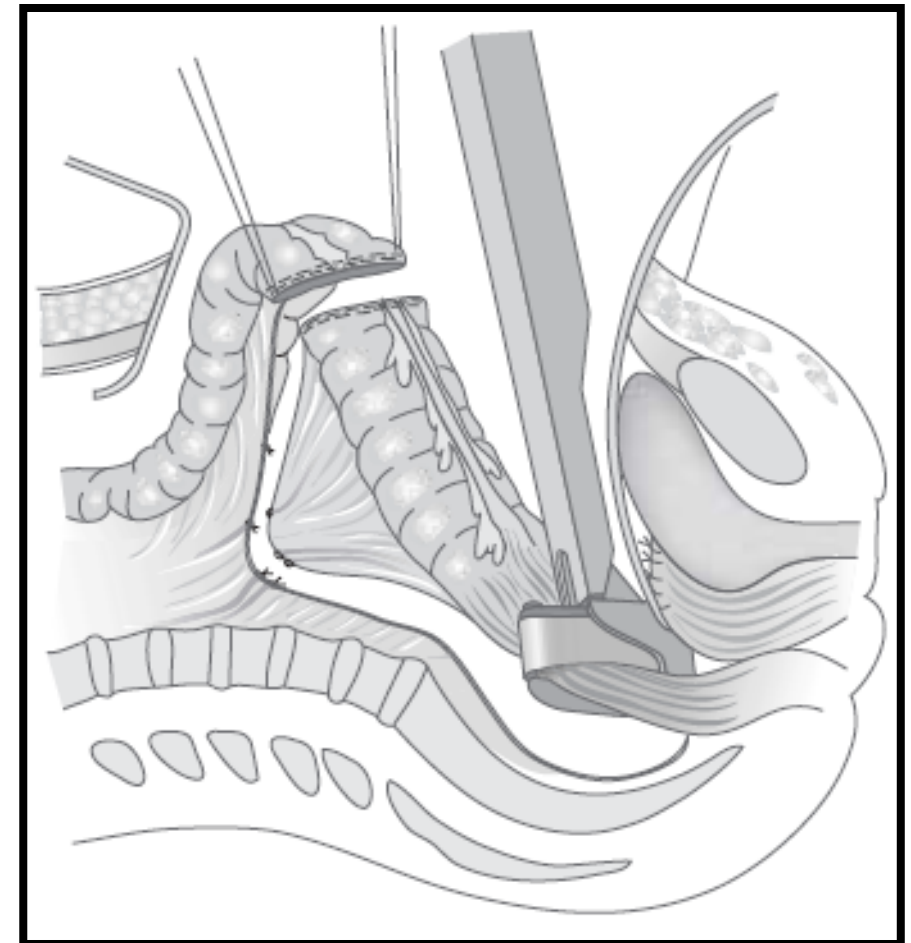
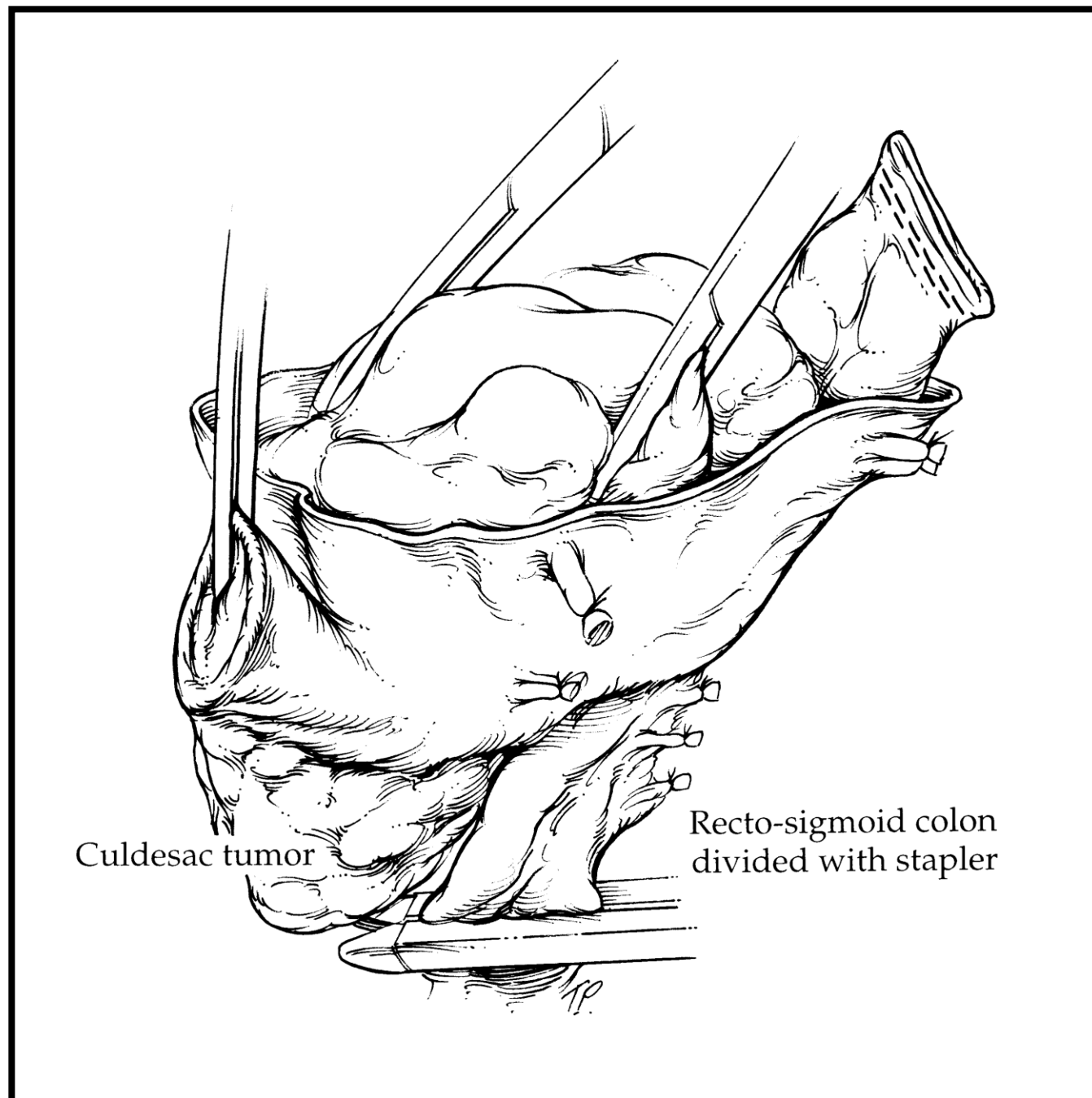
- Anterior colpotomy, proximal vaginectomy
- Development of rectovaginal space and dissection of cul-de-sac tumor false capsule from proximal rectum
- Division of mesorectum
- Division of proximal rectum
- Ancillary pelvic procedures (e.g. lymphadenectomy)
- Mobilization of descending colon
- Re-establish intestinal continuity - requirement for colostomy variable (3% to 63%)

Key steps in en bloc pelvic resection



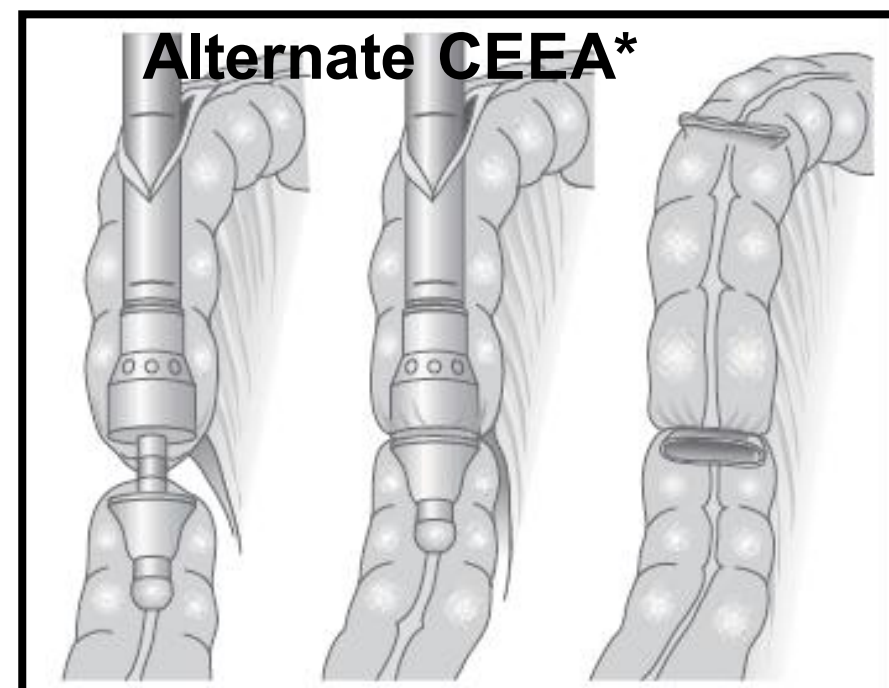
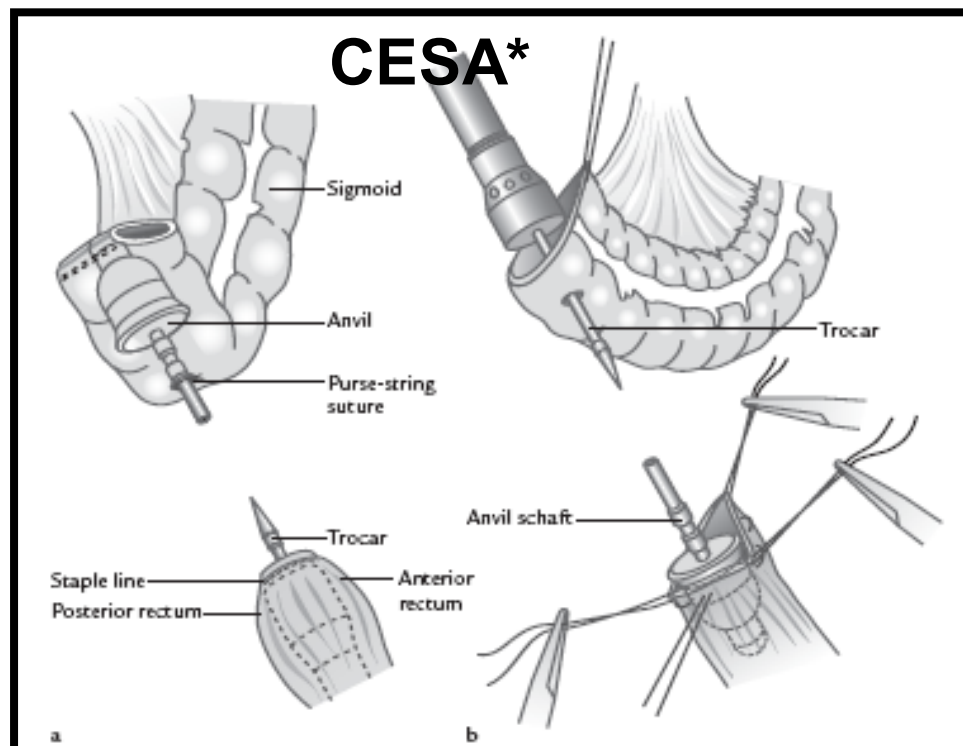
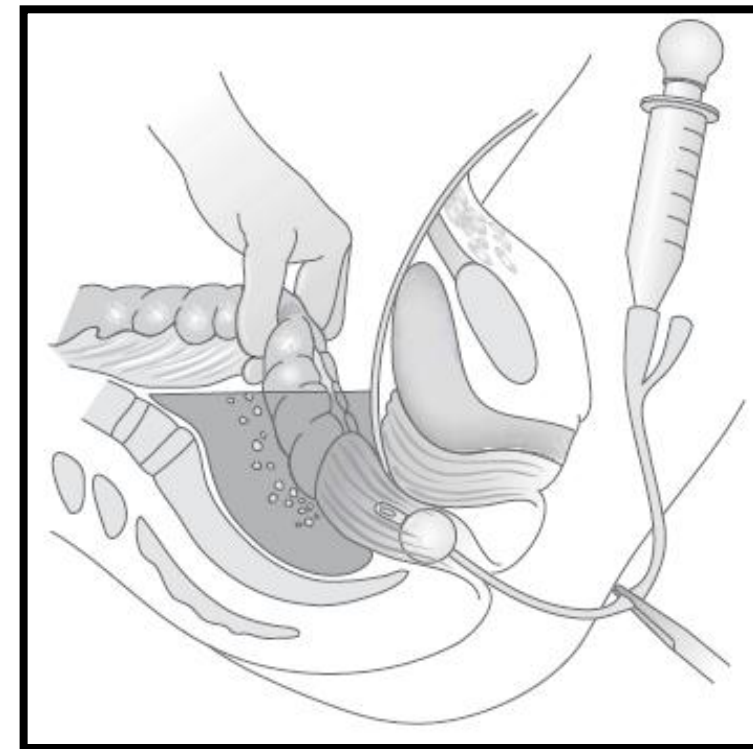
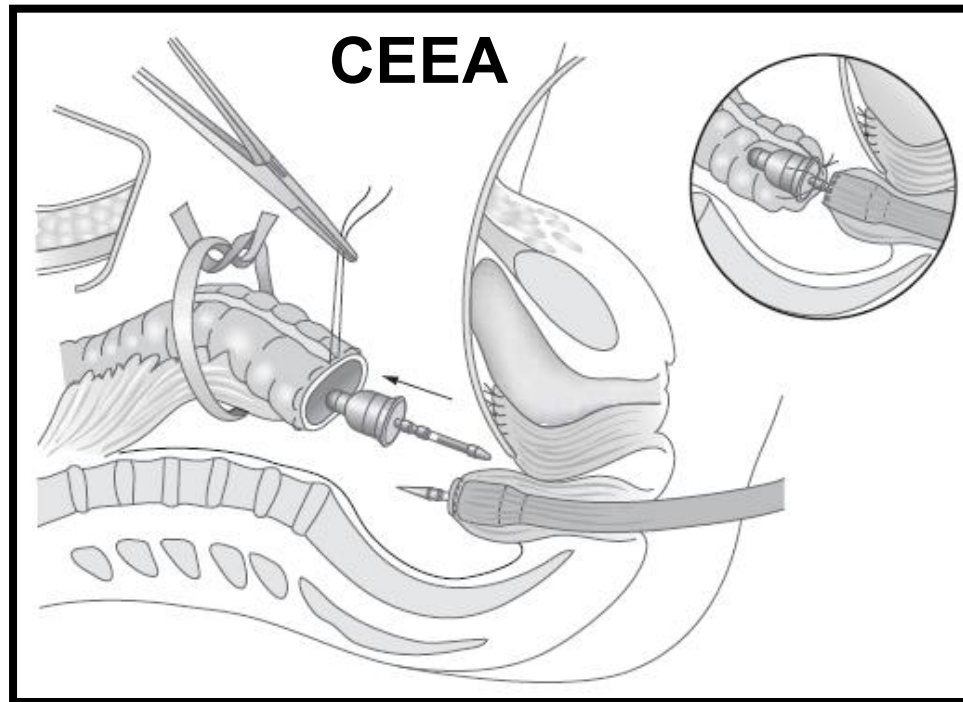
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Key steps in en bloc pelvic resection

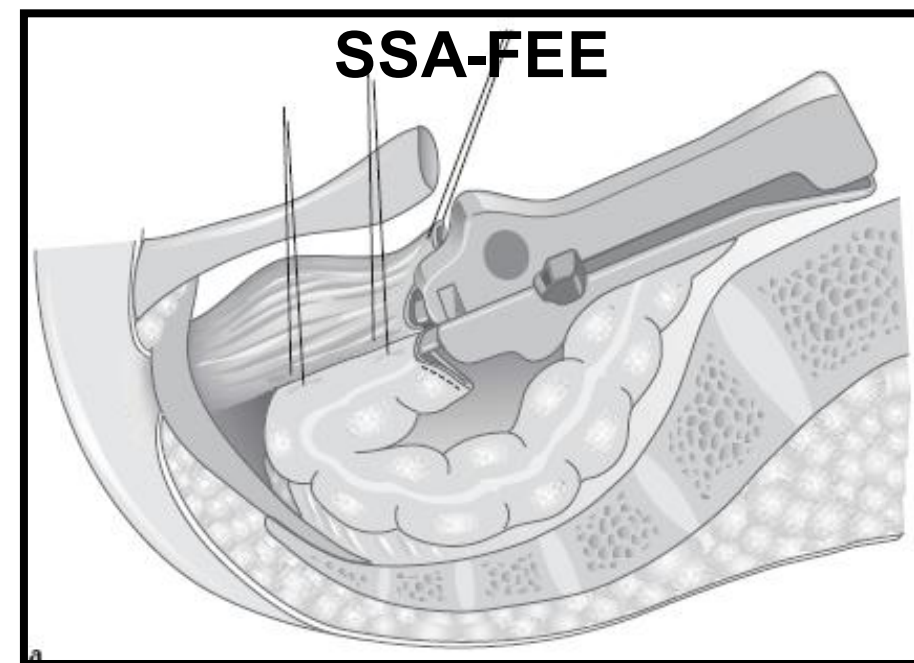
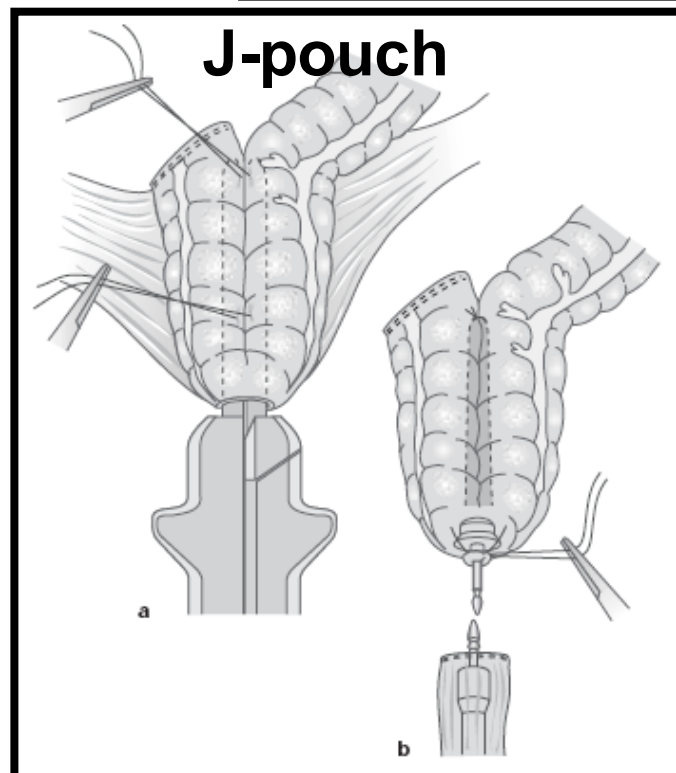
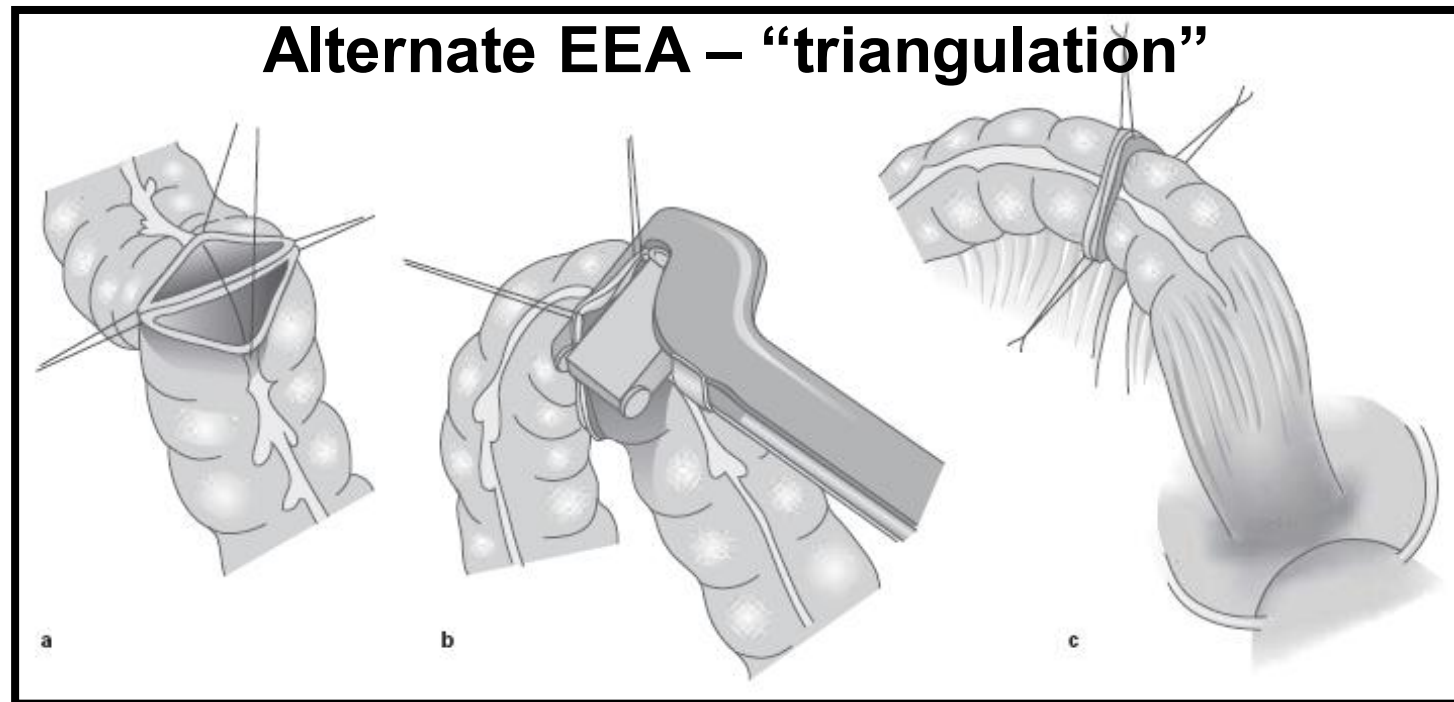


Bristow RE et al. J Am Coll Surg 2003; 197: 565.

Re-establishing intestinal continuity



Re-establishing intestinal continuity



Colorectal resection in patients with ovarian and primary peritoneal carcinoma

Stephen J. Tebes, MD,* Richard Cardosi, MD, Mitchel S. Hoffman, MD

Department of Obstetrics and Gynecology, University of South Florida, Tampa, FL

American Journal of Obstetrics and Gynecology (2006) 195, 585–90

Primary & recurrent OC & PPC (n=125)

- median length of colorectal resection = 15.7cm

Type of reanastomosis

stapled **63%**

handsewn 22%

none 15%

Anastomotic leak **2.5%**

Protective ostomy 13%

Level of anastomosis

- mean = 8.7cm (range 4-15cm)

- low rectal anastomosis (≤ 7 cm) in 37%

Morbidity of en bloc pelvic resection

- Operative time 210 - 318 min
- Estimated blood loss 800 - 2900cc
- EBL >1000cc 4.5 - 64.8%
- Blood transfusion 52.3 - 87.6%
- Overall morbidity 12.1 - 48.9%
- Significant morbidity 9 - 25%
- Anastomotic leak 0 - 5%
- Mortality 1.5 - 8%

Secondary cytoreductive surgery including rectosigmoid colectomy for recurrent ovarian cancer: Operative technique and clinical outcome

Robert E. Bristow^{a,b,*}, Michele Peiretti^c, Melissa Gerardi^a, Vanna Zanagnolo^c, Stefanie Ueda^a, Teresa Diaz-Montes^a, Robert L. Giuntoli II^a, Angelo Maggioni^c

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^c Division of Gynecologic Oncology, European Institute of Oncology, Milan, Italy

- Recurrent platinum-sensitive OC - RS colectomy (n=56)
- Among patients with prior hysterectomy, resection of distal urinary tract (partial cystectomy / ureterectomy) was required in 18.2% of cases
- **Complete cytoreduction in 85.7%**
- Stapled coloproctostomy in 98.2% of cases
- - re-resection of rectosigmoid colon in 4 cases
- Post-operative morbidity – 23.2%
- **Overall survival – 38.4 months**

Summary

- Locally advanced disease with contiguous extension to or encasement of the reproductive organs, pelvic peritoneum, cul-de-sac, and sigmoid colon can present a significant challenge to surgeons operating on women with ovarian cancer.
- However, no matter how extensive the pelvic disease may be, the gynecologic oncologist can successfully clean up the pelvis at any time.

Thank you !