Pelvic Exenteration Principles and Indications: A Gynaecological Perspective

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Disclosures

SBM is a proctor for:

- Plasma Surgical Inc.
- Ethicon Endo Surgery Ltd
- Intuitive Surgical Inc.

Director, Intuitive Epicentre for Robotic Training

Subspecialty Training Programme Director in Gynaecological Oncology, HEKSS Guildford

History of Pelvic Exenteration

- First described 1948
  - Brunschwig, Memorial Sloan Kettering, New York
- Recurrent cervix cancer
- Coined the term “pelvic exenteration”
- Performed 848 procedures
- Proposed that cervix cancer was a viral disease
  - in 1963!
- 20% 5-year survival in original series
- Single ‘wet stoma’ with ureterocolic anastomosis
- Ileal conduit 1950s: Bricker technique

Cervical Cancer

- Screening responsible for 42% fall in incidence from 1988 – 1997
- Vaccination from 2008
- Incidence expected to **rise** by 43% from 2014-2035
- 3200 new cases in 2013, > 900 deaths
- Bimodal age distribution
- 2nd commonest cancer in women under 40 years
  - 52% in women under 45 years
- 66% survive more than 10 years overall
  - Best survival stats for young women < 40 years
- Major adverse effect on psychosexual wellbeing

Current UK Population Issues

- 50% of cancers still occur in unscreened population
  - Rise in immigration
  - Failure to target the needy with screening & vaccination
  - Worst take-up in low SE groups
  - No screening <25 years since 2008
    - Significant new cancers diagnosed with first smear
- Effects of HPV Vaccination not yet seen
  - Approximately ONLY 75% coverage
  - Wide regional variation
  - Worst take-up again in low SE groups
- Increasing number of surgical cases at RSCH
-

Cervical Cancer Primary Treatment

- Early stage disease treated surgically
  - Up to Stage IB1/IIA
- Advanced stages treated with CCRT
  - Stage IIB or greater
  - IMRT
  - External beam plus brachytherapy

Follow-up Following Primary Treatment for Cervix Cancer

- MRI 3/12 post CCRT
- MRI & PET CT 6/12 post CCRT
- MDT review of imaging re central disease
- If suspicious – EUA and directed biopsies or salvage hysterectomy

HISTORICAL 5-YEAR SURVIVAL DATA

Authors	n	Operative% Mortality	5 year Survival%
• Ingersoll and Ulfelder	87	15	23.3
• Ketcham et al		162 7	38.0
• Brunschwig	581	8	19.9
• Symmonds et al	198	8.1	33.0
• Rutledge et al	296	13.5	42.1
• Averette et al	92	23.9	37.0
• Lawhead et al	65	9.2	23.0
• Morley et al	100	2	61.0
• Shingleton et al	143	6.3	50.0

Pelvic Exenteration

Where does it fit into modern Gynae-oncology practice?

When all is said and done, there is a lot more said than done…

Gynae Indications

- Principal indication:
  - Central pelvic recurrence of gynae malignancy
    - Classically recurrent cervical cancer
    - May be performed for other recurrent gynae cancers
- Other indications:
  - Primary excision of locally advanced tumour
  - Palliative resection
  - Part of ovarian cancer debulking
  - Recurrent vulval cancer

3 Phases

- Assessment
- Resection
- Reconstruction

Recurrent cervical cancer

- Classical Triad of:
  - Unilateral hydronephrosis
  - Unilateral lymphoedema
  - Unilateral sciatic nerve pain

  - Suggests unresectable disease

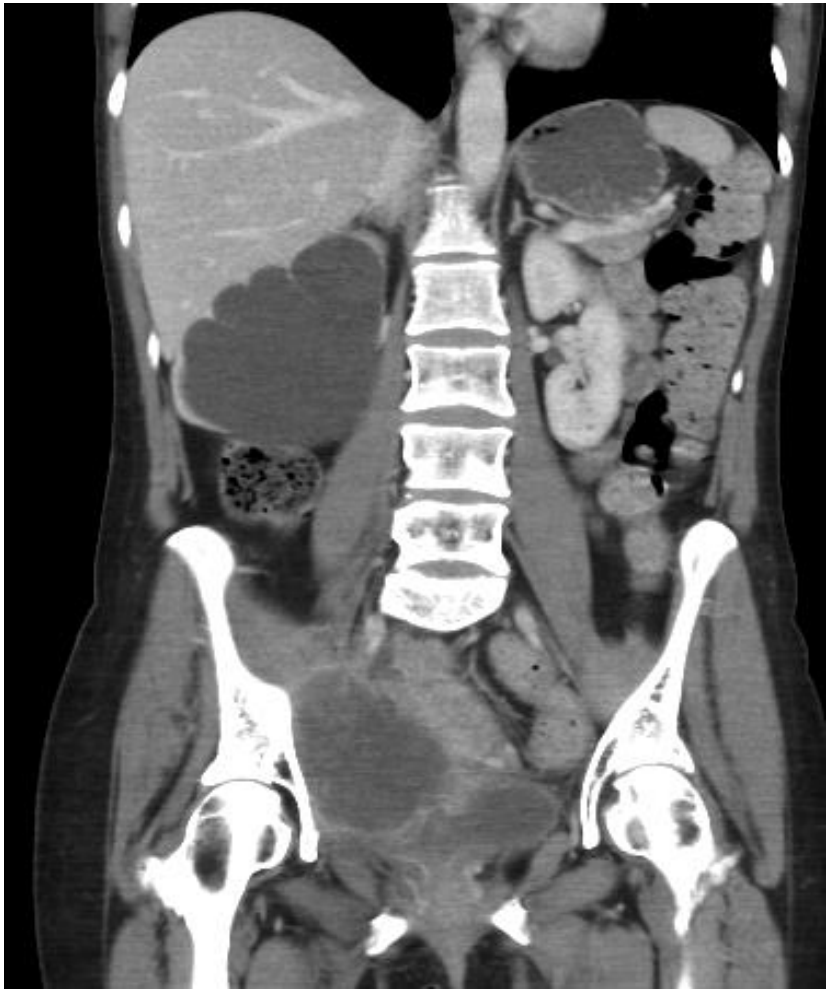
Assessment

- Case selection of paramount importance
- EUA, sigmoidoscopy, cystoscopy, + laparoscopy
  - ?small volume peritoneal mets
  - ?bowel involvement
  - Retroperitoneal laparoscopic lymphadenectomy PA

    M Plante 1995
- Imaging
  - CT chest /abdomen/pelvis
  - DW MRI pelvis +/- abdomen
  - PET CT

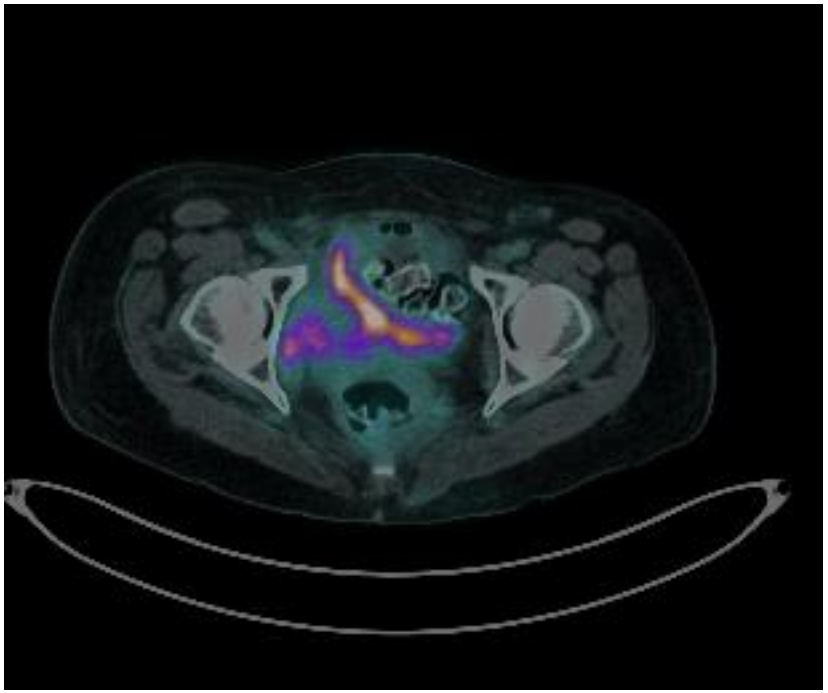
    False –ve rate <9%

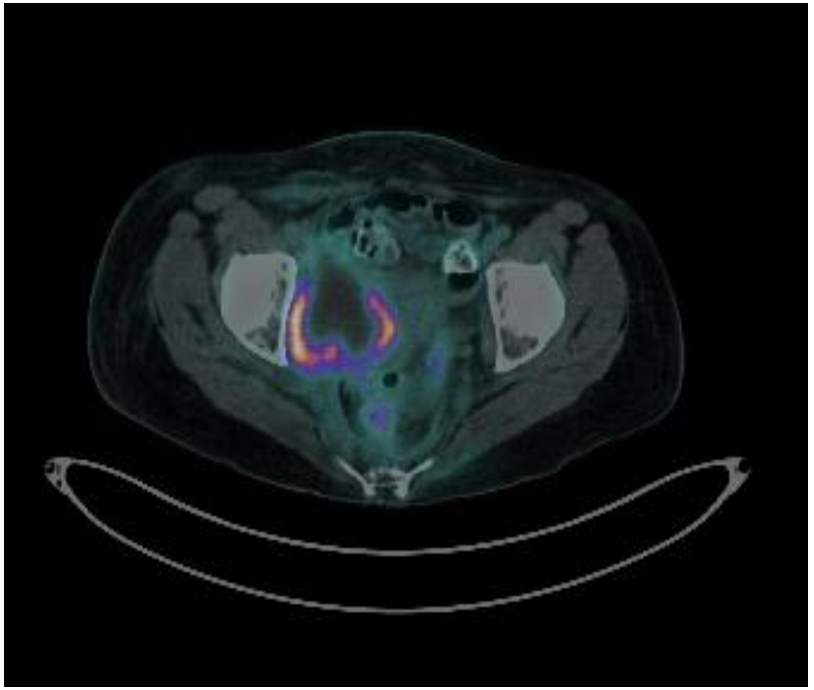
CT CAP with contrast



- Non functioning right kidney
- Right pelvic mass extending to side-wall
- Classical triad of symptoms
- Not operable

Unresectable recurrent cervical cancer on PET/CT





Contraindications

- Distant metastases
  - Absolute contraindication
  - Originally assessed during the explorative laparotomy
- Disease fixed to the pelvic side-wall
- Isolated abdominal metastases
  - ?Relative contraindication
- Involved nodes – relative contraindication

Prior Treatment

- All cervix or endometrial cancer patients will have had either previous surgery, chemo/RT
  - or both

- While many ovarian cancers relatively chemo sensitive in primary setting
  - Only consider platinum sensitive recurrent ovarian cancer for secondary debulking

Counselling

- Curative intent vs Palliative
- Morbidity
- Mortality
- CNSs
- Stoma nurse Urology CNS
- Psychosexual Consultant & Psychological support/counselling pre-op
- Plastic & reconstructive surgery
  - Especially for recurrent vulval tumours

Basic Types Of Exenteration

- Anterior
  - i.e. cystectomy with urinary diversion
- Posterior
  - with rectosigmoid resection +/- colostomy
  - Supra or infra-levator
- Total
  - Both urinary and bowel diversion

Recent Developments

- Pelvic side-wall extension
  - **CORT / IORT**

    ‘Combined operative and radiotherapeutic treatment

    M Hockel 1992
  - **LEER**

    ‘Laterally extended endopelvic resection’

    M Hockel 2008

Vaginal Reconstruction

- May not be required at all if vagina spared
- Numerous historical techniques described:
- All far from perfect
- Modern plastic approaches:
  - Inferior gluteal myocutaneous flaps
  - Lotus petal flaps
  - V-Y advancement
  - Groin skin crease flaps
- No reconstruction is an option

Vaginal Reconstruction

- Vaginal stenosis & shortening main problem
  - Post chemo/RT
- Psychosexual problems in all cases
- Many patients never resume sexual function even if if anatomy restored
- Reconstruction however may have greatly beneficial psychological effects even if not sexually active

Rectal Reconstruction: Low Rectal Anastomosis

Richard Barakat et al MSK 1999

- Anastomotic leak rate > 50% !
  - Covering ileostomy much safer
  - Perioperative TPN used electively by some
- Stent ureters prophylactically for posterior exenteration
  - Devascularized stripped ureters very sensitive to rectal anastomic leaks ➔ Complex fistula
- Enhanced recovery programme
- Treat like any other low rectal resection and draw on current colo-rectal expertise

Recent Developments

- Surgical Approach
  - Open
  - Laparoscopic
  - Robotic
    - Greatest benefit of MAS with complex major procedures
    - Enhanced recovery
    - Multidisciplinary approach

LEER

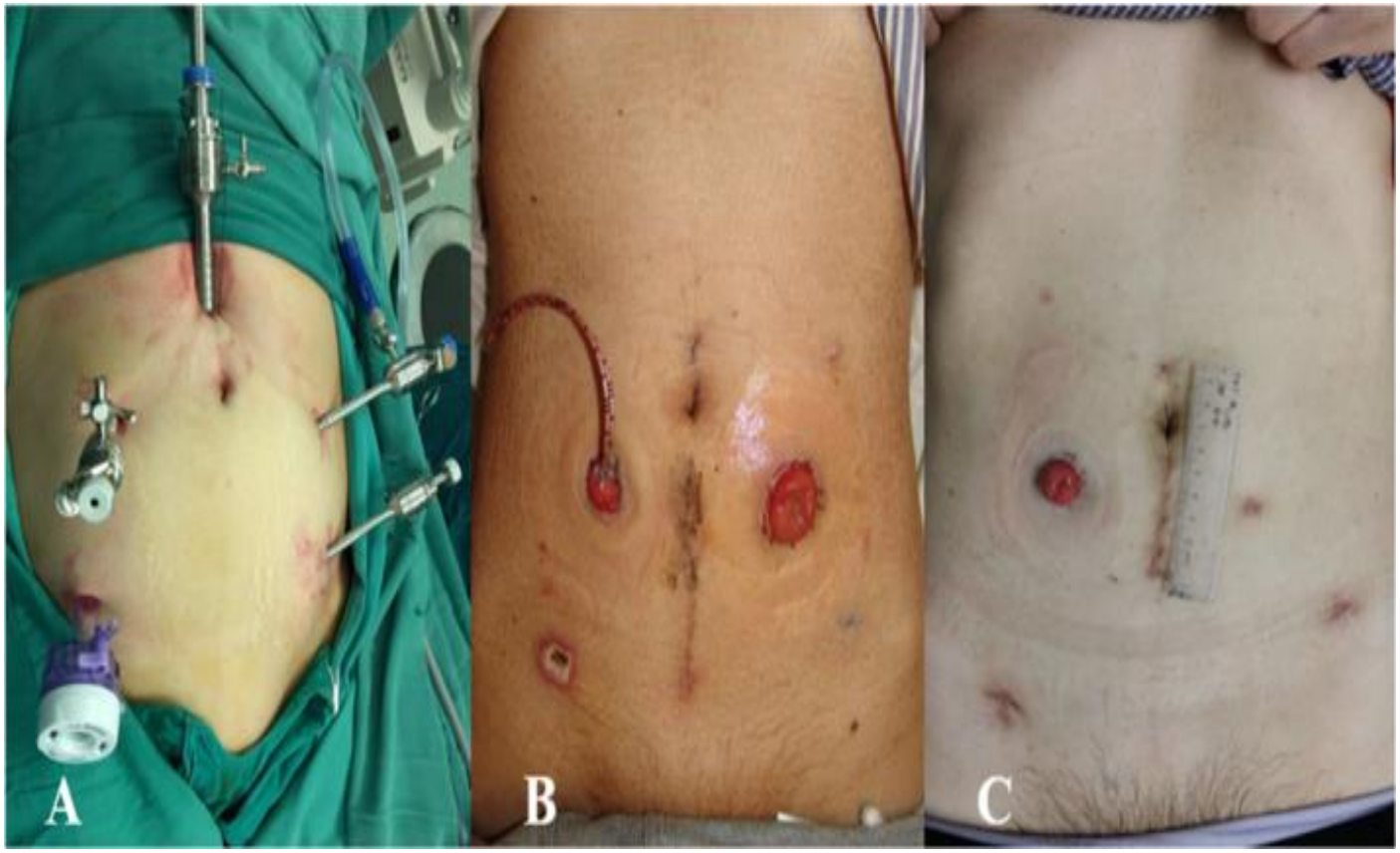
Very radical lateral resection involving side-wall

- Plane of pelvic exenteration to the medial aspects of the acetabulum
  - obturator membrane
  - sacrospinous ligament
  - sacral plexus
  - piriformis muscle

- High major complication rate of 22%
  - .

Laparoscopic TPE

- Christophe Pomel 2003
- Port sites:



Prognosis

- Shingleton & Hatch et al 1998
  - Mathematical model based on multivariate analysis (3 factors)
    - Adherence to pelvic side wall (Y/N)
    - Size of tumour (>/<3cm)
    - Time interval between primary treatment & relapse
  - Classified as:
    - High risk if (T>3cm, adherent to side wall & DFS <1year)
    - Low risk if (T<3cm, no adherence & DFS>1yr) 5 yr survival is 82%%
    - Medium risk if 2 out of 3 - 5yr survival 46%

National Centres vs Regional Centres?

Current Situation In Guildford

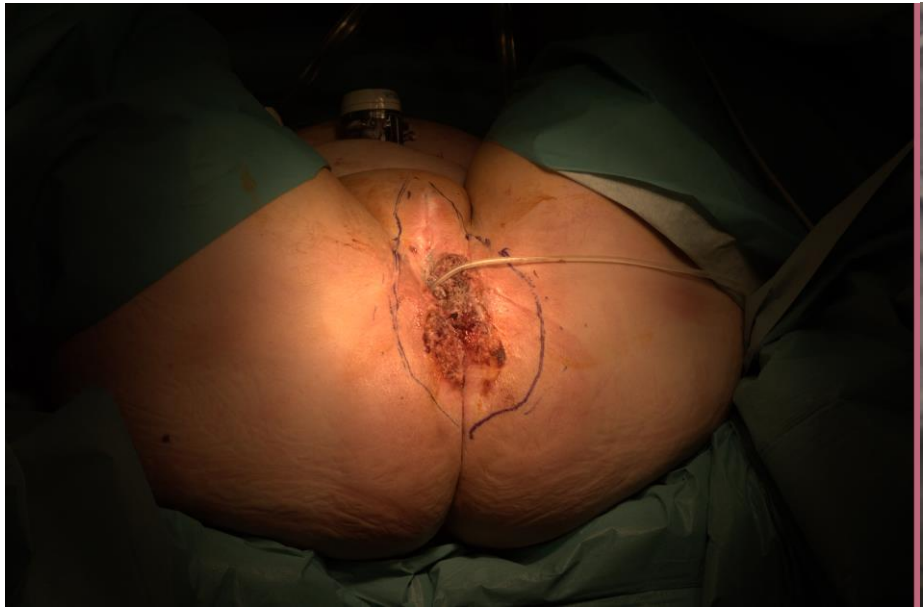
- Now an established comprehensive centre for pelvic cancer surgery
  - Gynae-oncology centre since 2002
  - Highly skilled multidisciplinary team on one site with MAS expertise
  - Reconstructive urology ‘Cystectomy team’
  - Reconstructive plastic surgeon
  - Psychosexual Consultant
  - Prospective outcomes, PROMS and M&M data collection

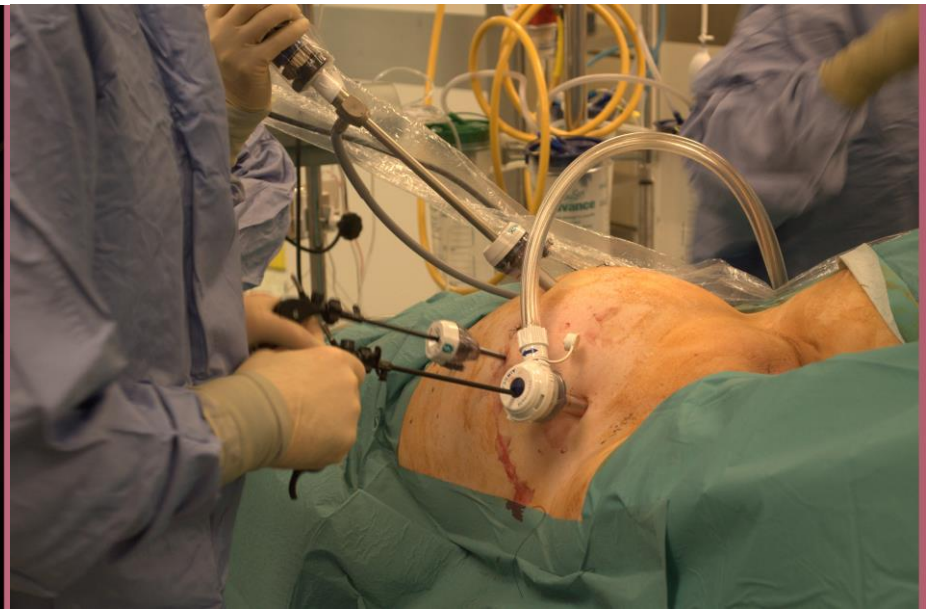
- Discussion continues at BGCS of “Supercentres” for exenterations & other rare procedures not materialized
  - Decision ultimately lies with commissioners & clinicians
  - Quality of service provided
  - Outcomes & research
  - Only one centre performing LEER procedures at present in UK

Posterior Exenteration for Recurrent Vulvar SCC

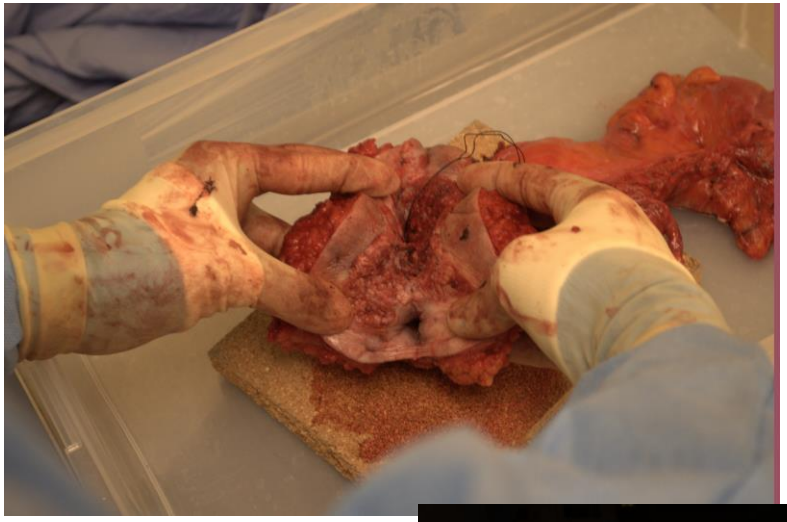
Prior Radical vulvectomy and previous chemoRT for recurrence: progressed on treatment

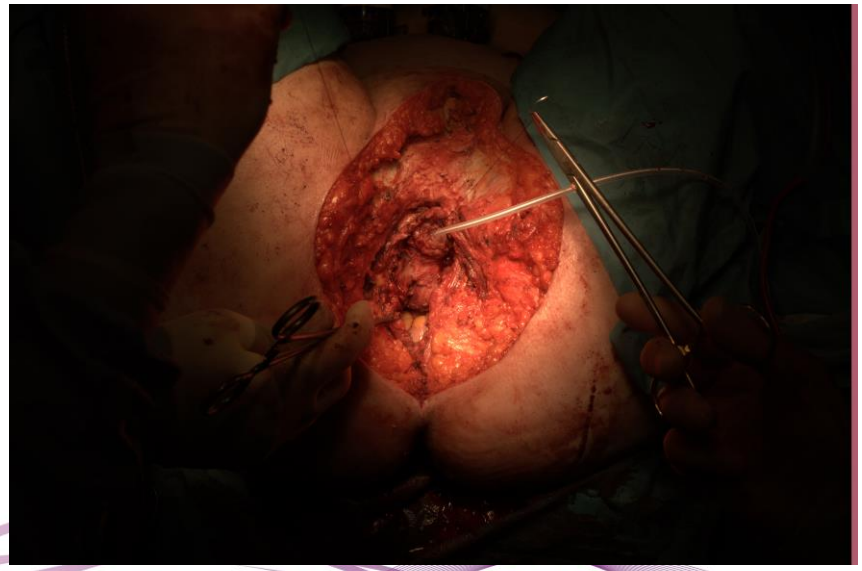
Laparoscoic dissection of uterus, adnexae and rectum from above down to pelvic floor

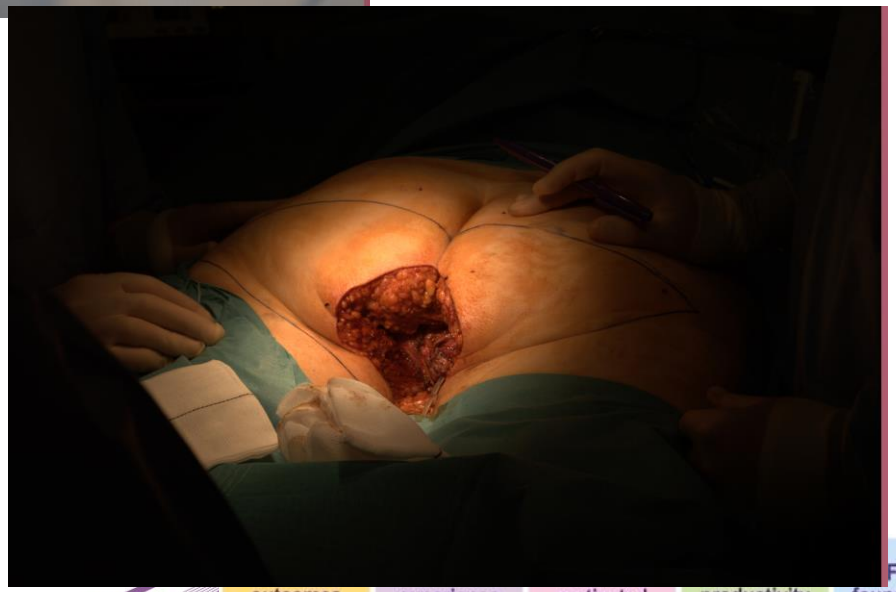




Reconstruction Using Bilateral IG Flaps



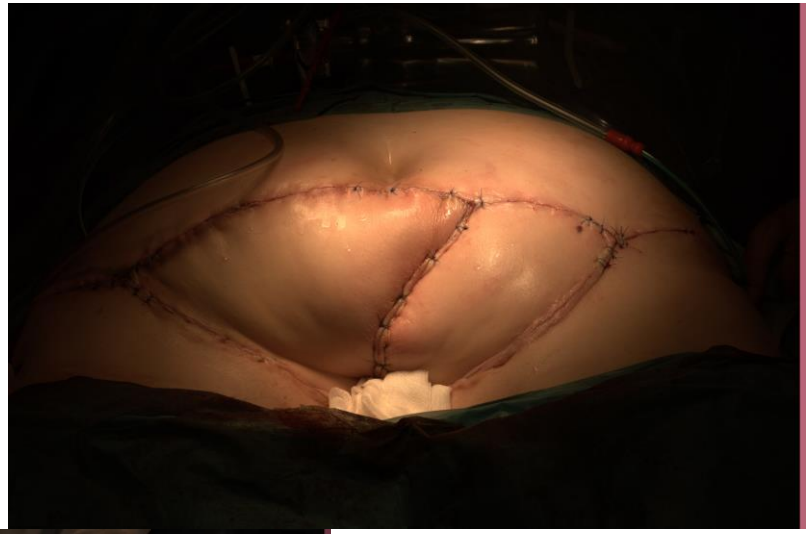


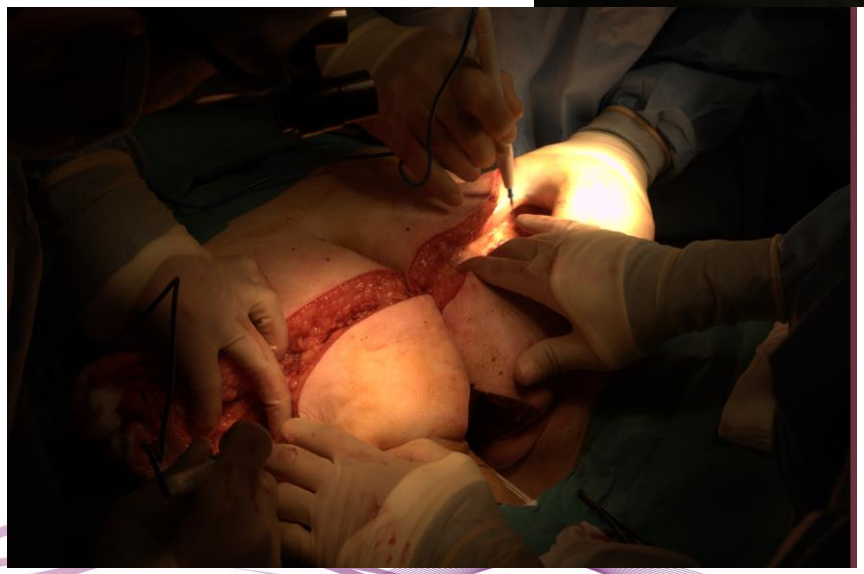


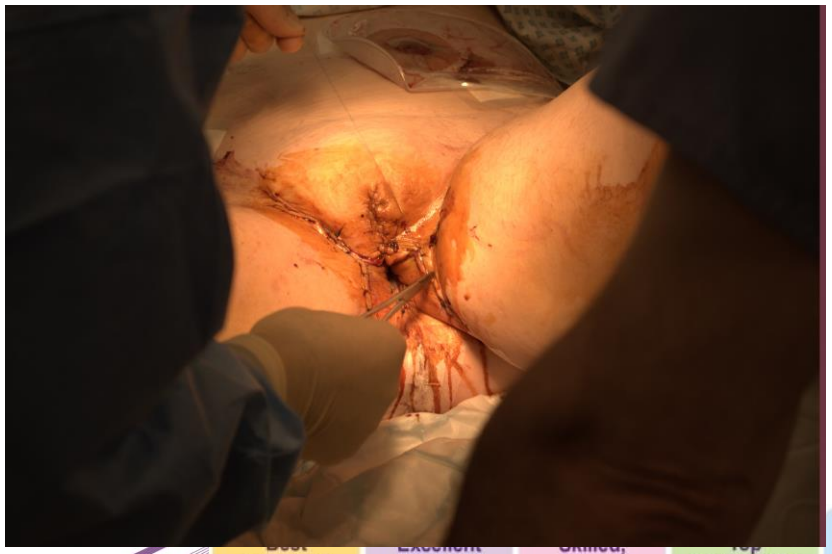
Posterior Exenteration for Recurrent Vulvar SCC

NSR after 18/12

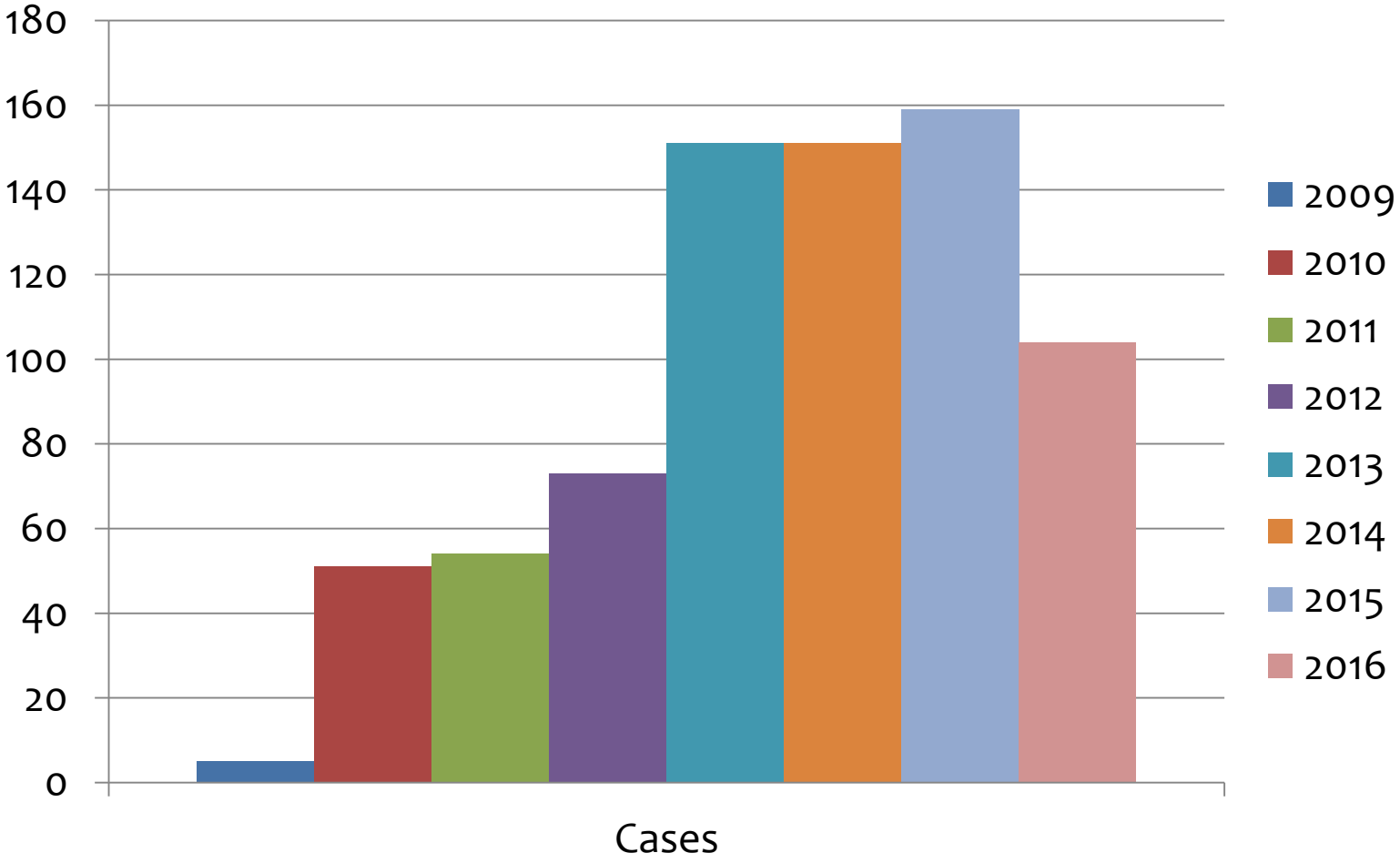
No pain







RSCH Gynae Oncology Robotics



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Best outcomes
Excellent experience
Skilled, motivated teams
Top productivity
Firm foundations

The Future is Robotics!

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