Pelvic Exenteration
Principles and Indications:
A Gynaecological Perspective

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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
<table>
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<tr>
<th>Authors</th>
<th>n</th>
<th>Operative% Mortality</th>
<th>5 year Survival%</th>
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<td>Ingersoll and Ulfelder</td>
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<td>Ketcham et al</td>
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<td>Brunschwig</td>
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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 PA lymphadenectomy 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 are 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 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 anastomotic 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
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 \((T>3\text{cm, adherent to side wall & DFS <1year})\)
    • Low risk if \((T<3\text{cm, no adherence & DFS>1yr})\) 5 yr survival is 82%%
    • Medium risk if 2 out of 3 - 5yr survival 46%
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 chemoradiation for recurrence: progressed on treatment

Laparoscopic 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
N=750

Cases

2009
2010
2011
2012
2013
2014
2015
2016
The Future is Robotics!
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