Cytoreductive surgery in Ovarian Cancer

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Ovarian Cancer

- 6,600 new cases per year
- 4,000 deaths
- 75% of cases have advanced stage disease
- Medical treatment alone rarely results in cure
- Surgery is the ‘best’ way to improve survival
Ovarian Cancer
Surgery for advanced Ovarian Cancer

- Griffiths CT (1975): Retrospective study correlating extent of residual disease with survival
- Hudson CN (1973): Retroperitoneal en bloc resection of the recto-sigmoid colon with the pelvic tumour
- The challenge lies in the approach to the upper abdominal and retroperitoneal disease
The Rational for Maximal Surgical effort

- Bristow et al (JCO 2002) : Meta-analysis of 6885 patients
  - Maximum cytoreduction is the most important factor
  - There is no difference between ‘optimal’ (<2 cm) and sub-optimal cytoreduction
  - ‘Optimal’ (<1 cm) and complete cytoreduction achievable in 20-90% of cases
The Rational for Maximal Surgical effort

- SCOTROC study (2005) : 1077 patients (689 UK, 388 USA, Europe, Australasia)
  - Non-UK patients more likely to be optimally debulked (71.3% vs 58.4%; P < 0.001)
  - Rate of bowel resection, pelvic/PA lymphadenectomy statistically significantly higher in non-UK centres
  - Optimal debulking was associated with increased PFS and overall survival (P= 0.045)
The basis for the UK ethos?

Hunter RW, Alexander ND, Soutter WD:

Meta-analysis of surgery in advanced ovarian carcinoma: is maximum cytoreductive surgery an independent determinant of prognosis?

Am J Obstet Gynecol 166:504-511, 1992

Chemotherapy is the most important factor
The Rational for Maximal Surgical effort - lymphadenectomy

- Nearly 50% of retroperitoneal nodes are involved in advanced Ovarian Cancer
- Nodal disease does not respond well to chemotherapy
- Systematic lymphadenectomy improves PFS but not overall survival in women who have been optimally debulked (Benedetti Panicci et al JNCI 2005)

- Excision of bulky nodes in cases where complete macroscopic debulking has been achieved
Neo-adjuvant chemotherapy followed by debulking surgery

  - Both trials lent support to the concept that chemotherapy up front renders surgery less morbid and technically simpler

Impact on Survival
Neo-adjuvant chemotherapy followed by debulking surgery

Important Trials

- EORTC trial: Survival same, morbidity less
- CHORUS Trial
Surgical guidelines for advanced Ovarian Cancer – Preoperative Imaging

* CT

- To define extent of intra abdominal disease

- Extra abdominal disease

Defining the nature of peritoneal Carcinomatosis

(‘Bigger is not Badder’)

Preoperative Imaging – Infiltration of the Falciform Ligament
Preoperative Imaging – Small Bowel Involvement

Mesenteric Infiltration

Serosal Involvement
Preoperative Imaging – Infiltration of Porta hepatis
Preoperative Imaging – Extra – Abdominal Disease

Pericardial Infiltration
Preoperative Imaging - Cautions

- Axtell et al (2007): Pre op imaging should be used with caution in selecting patients for neoadjuvant chemotherapy versus surgical cytoreduction
Operative Assessment – The role of Laparoscopy

- Avoids unnecessary laparotomy in cases more suitable for neoadjuvant chemotherapy
- Open Laparoscopy
  - Place trochars in the midline to avoid the risk of port site metastases
- Can be very useful in assessing resectability
Diffuse carcinomatosis infiltrating the SB mesentery
Operative Assessment – Factors that preclude achieving complete cytoreduction

1) Small Bowel involvement
   - Diffuse encasement of mesenteric vessels
   - Multiple bowel resections not advised
   - Permanent ileostomy not advised

2) Infiltration of the Porta Hepatis

3) Right hemi diaphragm – diffuse infiltrative involvement including the supra hepatic IVC
Operative Procedures - 1

- Standard Surgery
  - Hysterectomy, Bilateral adnexectomy
  - Excision of involved pelvic peritoneum
  - Omentectomy
  - Appendicectomy
  - Excision of Bulky pelvic/PA nodes
Operative Procedures - 2

- **Radical Surgery**
  - En bloc excision of uterus, ovarian masses, pelvic peritoneum and Recto-sigmoid

  (Hudson Procedure)

- Simple Peritonectomies
Operative Procedures - 3

* **Supra-radical Surgery**
  - Extensive peritonectomies including partial resection of the diaphragm
  - Resection of subcapsular liver metastases, cholecystectomy
  - Splenectomy, resection of the tail of the pancreas
  - Other bowel resection, partial gastrectomy
Providing a service

- Importance of MDT
- Impact on operating time
- Involvement of other surgical subspecialties
- Training (Naik et al, 2010, BJOG)
‘Biology of the Disease or Skill of the Surgeon?’