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A Patient with Multiply Relapsed Platinum-Sensitive Primary Peritoneal Carcinoma

Case history: 2001

- 60-year old; no co-morbidity
- Family history: Mother – gastric cancer at 81. No other FHx of cancer
- Ethnic background: White-British. From Yorkshire

Abdominal bloating
& post-menopausal
bleeding

- CA125 normal
- CT – omental + peritoneal deposits
- Biopsy – adenocarcinoma

Clinical dx:
Stage 3
PPC

Primary surgery

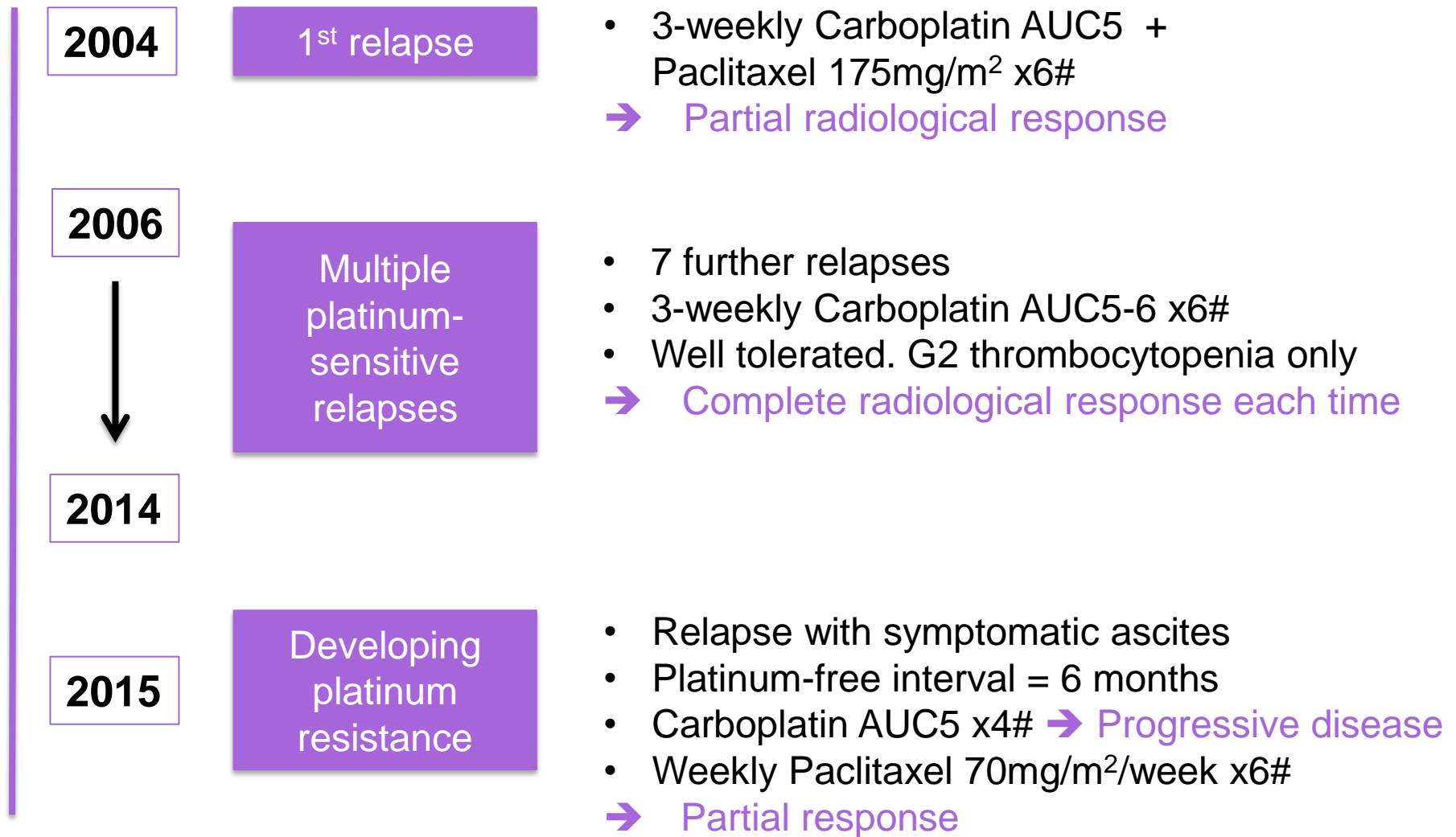
- TAH + BSO + omentectomy + pelvic node sampling
- Residual: 2cm obturator fossa deposit + miliary disease

→ **FIGO Stage 3C high grade serous/endometrioid
primary peritoneal carcinoma**

Post-operative
chemotherapy

- SCOTROC 2 trial
- Carboplatin x4# + Gemcitabine/Paclitaxel x4#
- End of treatment CT: sub-cm nodule only → **Near CR**

Multiple platinum-sensitive relapses



BRCA mutation status?

2001



2014

Displayed 'BRCAness' phenotype

- Germline BRCA mutation testing only available in selected patients
 - Family history, age, ovarian + breast cancer

2015

- Routine BRCA testing for all patients with high grade ovarian cancer introduced in Leeds

Germline BRCA mutation testing: no evidence of mutation

Molecular profile directed therapy

2016

- Symptomatic progression with increased volume ascites
- 4 months post-paclitaxel (10 months after last platinum)

Tumour molecular profile performed on cell block from ascitic fluid

- Enrolled in LCC-CARIS-01 trial
- Feasibility study of routine molecular profiling in gynae cancer
- Multi-platform tumour tissue profiling by Caris Life Sciences, Irving, Tx, USA

Next generation sequencing
pathogenic mutations

- TP53 mutation
- **Somatic BRCA1 mutation**

Protein expression of
chemo-sensitivity biomarkers

- **Potential benefit platinum & gemcitabine**
 - ERCC1 & RRM1 negative
- **Lack of benefit taxanes & topotecan**
 - TUBB3 positive, TOPO1 negative

Treatment decision...

2016

Carboplatin +
Gemcitabine x5#



Commenced olaparib

- Symptomatic benefit with decreased frequency of paracentesis
- Complicated by haematological toxicity

- Tumour molecular profiling helped guide therapy in this patient
- Gave her the opportunity to receive a PARP inhibitor as part of routine treatment
- Highlights role for somatic BRCA testing in germline BRCA negative patients with 'BRCAness' phenotype