Breast Cancer 1

Diagnosis

Presentation
- Abnormal screening mammogram (>25% of cases)
- Breast lump or thickening
- Axillary tumour
- Breast skin changes
- Nipple change - inversion, discharge
- Persistet breast tenderness / pain
- Symptoms of metastatic disease: bone pain, pathological fracture, spinal cord compression

Indication for referral
- Lump
  - New discrete lump
  - Abscess / inflammation unresolved after one course of antibiotics
  - Persistent / recurrent cyst
- Pain
  - Associated with a lump
  - Intractable pain failing to respond to simple measures (change of bra, simple analgesics)
  - Unilateral persistent pain in post menopausal women
- Nipple discharge
  - Women > 50 years
  - Younger women if blood stained
- Nipple retraction / inversion
- Axillary lump + strong family history

Triple assessment
- Three areas
  - History & examination
  - Mammography +/- ultrasound
  - FNA cytology
- Score each area 1 to 5: 1 = normal, 2 = benign, 3 = atypical, 4 = suspicous of cancer, 5 = cancer
- If disconcordant score perform biopsy for gold standard diagnosis

FNA
- Better tolerated
- Allows "hot reporting" very useful in one stop breast clinics
- Poorer sensitivity 80%, and specificity 60%
- Cannot differentiate between insitu or invasive cancer
- False positive rate 1 in 1000

Core biopsy
- Lower rate of inadequate sampling compared with FNA
- Improved sensitivity and specificity (95%)
- Allows staging and identification of receptor status
- Longer processing and reporting time, needs revisit by patient

Epidemiology
- Most common female cancer in UK
- 42,000+ cases a year in UK
- 1 in 8 life time risk
- Falling mortality rate
  - Screening has improved treatment
- Rising incidence: screening, ageing population, obesity
- Male breast cancer rare but increasing

Risk factors
- Increased oestrogen exposure
- Age (incidence doubles every 10 years until menopause)
- Early menarche, late menopause
- No children or older age at first pregnancy
- Genetic predisposition (10% F and 20% M cancers)
- HRT
- Diet (obesity and alcohol consumption)

Hereditary breast cancer
- 10% F breast cancers due to inheritance of mutated BRCA1 or BRCA2 gene
  - Increased risk of early breast cancer and elevated lifetime risk (85%)
  - Also increased risk of ovarian cancer (greatest with BCRA2)
- BRCA1 & 2 highly penetrant and autosomal dominant
- Male carriers of BRCA2 are at increased risk of breast cancer; male carriers of BRCA1 or 2 are at increased risk of prostate cancer
- BRCA1 cancers may become more aggressive

- Breast feeding is protective

Pathology

Pathology
- 85% of breast cancers arise in the ducts of the breasts
- 45% occur in the upper outer quadrant, 25% are retro areolar
- Ductal carcinoma in situ (DCIS) remains in the confines of the ductal basement membrane

Spread
- Lymphatic regional nodes (commonly the axillary, less commonly internal mammary)
- Systemic spread: bone, lung, pleura, liver, skin, CNS

Prognosis

Prognostic factors
- Tumour size
- Number of histological positive axillary lymph nodes
- Tumour grade
- Other factors
  - + Hormone receptor status
  - + Well differentiated tumour
  - - HER2 over expression
  - Histological sub type
  - - Lymphovascular invasion
  - Proliferative index (rate of cell division)

Nottingham Prognostic index
- 0.2 x tumour size in cm + grade (1 to 3) + axillary node score
- Axillary npde status: no lymph nodes = 1, 1 to 3 lymph nodes = 2, > 3 lymph nodes = 3
- NPI < 2.5 = excellent prognosis
- NPI < 4 = moderate prognosis
- NPI 4 - 5 = poor prognosis
- NPI > 5 = very poor prognosis