Ovarian disease

There a numerous pathologies that can occur in the ovary. The two core groups of which are non-neoplastic and neoplastic.

Non-Neoplastic (cystic) disease

Ovarian cysts are further categorised into functional and non-functional cysts. Functional cysts are those that occur as part of the cyclical maturation of the ovary and includes follicular and corpus leuteal cysts. They are often asymptomatic.
Non-functional cysts are due to an underlying pathology. Common examples of these include:

Ovarian endometriotic cysts

Commonly referred to as "chocolate cysts", they are found in patients with endometriosis and are filled with brown fluid (hence the name!) which is old blood and tissue. There may be local fibrosis and adhesions associated with such cysts.

Polycystic ovarian syndrome (PCOS)

PCOS is the most common endocrine disorder in women, bulky ovaries with small follicles are seen. Multiple ovarian cysts results in the "ring of pearls" sign that may be seen on Transvaginal USS.

Theca leutin cysts

Multiple cysts found in conditions with high β hCG i.e hydratiform molar pregnancy.

Ovarian oedema

Large, boggy ovary; usually secondary to ovarian torsion. Germ cell tumours should be excluded in younger patients.

Neoplastic disease - Neoplasms are grouped by their tissue origin and can be benign or malignant.

Epithelial – Most common tissue type.
Further categorised into serous, mucinous, endometriod, clear cell and urothelial-like.

Type	Frequency	Details
Serous	Most common	Benign- Serous cystadenoma: usually uniolcular, filled with straw coloured fluid, bilateral in 20-30% cases.
		Malignant- Serous cystadenocarcinomas: may contain serous and solid components. Psammoma bodies seen hisologically. Usually bilateral.
Mucinous	Common	Benign – Mucinous cystadenoma: often multiloculated but usually unilateral. Can get very large.
		Malignant – Mucinous cystadencarcinoma: appears similar to benign tumour although may have more solid components. Only 1 in 5 are bilateral. Can be associated with pseudomyxoma peritonei
Endometriod	Uncommon	Usually malignant, coexistant 2nd primary of uterus in 1/3
Clear cell	Uncommon	Mostly malignant, can be associated with ovarian endometriosis
Urothelial-like	Uncommon	AKA: Brenner tumours. Usually unilateral, rarely malignant

Germ cell tumours – Most commonly affect children and young women (i.e. up to 30yrs)
Germ cell tumours account for around a quarter of ovarian tumours although less than 5% are malignant. However, amongst children up to one third are malignant.

Ellie Bodington

Teratoma

Also termed ovarian dermoid cysts. Almost always benign. Very common (20% of ovarian neoplasms) and usually found in patients in their 20's. Contains elements from all three germ cell layers and may contain epithelium, hair, teeth and sebum. Malignant change, usually to squamous cell, can occur but is rare and is usually in post-menopausual women.

Dysgerminoma

Uncommon but is the most common malignant germ cell tumour. Is the most frequently found ovarian malignancy in pregnancy. Around 10% are bilateral.

Endodermal sinus (yolk sac tumour)

Usually malignant. Onset is usually sudden with pelvic symptoms and a pelvic mass. 1 in 5 have coexistant teratomas.

Choriocarcinoma

Secret hCG and can present with precoscious puberty. Do not respond well to chemotherapy and have a poor prognosis.

Sex cord/ stromal tumours – breifly included here for completeness

Sex cord tumours account for less than 5% of all ovarian tumours and are very rare. Types include granulosa cell, thecoma/fibroma and Sertoli/Leydig cell tumours. Thecomas are found in Meigs syndrome.

Assessment of ovarian disease

Ovarian cancer tends to present late due to the non-specific nature of symptoms. Women who present with lower abdominal pain but no peritonism or systemic features can be managed conservatively and given analgesia. Most benign tumours will resolve spontaneously.

Risk of malignancy index (RMI) can assist in differentiation between benign and malignant disease.

RMI = U x M x CA125

U – Ultrasound score (0,1, or 3), M – menopausal status (1 – pre-menopausal, 3- post menopausal)
CA125 – CA125 level (U/L)
Low score – less than 25 = <3% risk of cancer Moderate score – 25-250 = 20% risk of cancer
High score – Over 250 = 75% risk of cancer.

NICE guidance (NG12)

Specific guidelines for suspected ovarian cancer state that any woman should be referred urgently if examination finds ascites and/ or a pelvic mass (unless the mass is obviously uterine fibroids).

Tests are recommneded in primary care if:
- bloating, feeling full, loss of appetite, pelvic/ abdominal pain or urinary urgency/frequency are present on a persistent and frequent basis (over 12 times a month).
- any woman over 50 who had expereinced symptoms of IBS in last 12 months as IBS is unlikely to be a first presentation at this age.

Consider testing in women with unexplained weight loss, fatigue or changes in bowel habit.

Those with a CA125 of over 35 IU/ml should be sent for an ultrasound of abdomen and pelvis.

References:
Magowan et al. Clinical Obstetrics & Gynaecology. 3rd Edition. Elsevier.
Collins et al. Oxford Handbook of Obstetrics and Gynaecology. 3rd Edition. Oxford University Press
NICE guidance. Suspected cancer: recognition and referral (NG12).

Ellie Bodington