Endometrioid carcinoma of the ovary

- sub-type of epithelial ovarian tumours. The vast majority are malignant and invasive. On imaging, they are usually characterised as complex nonspecific solid-cystic masses and found associated with endometriosis.
- **Epidemiology**
- Endometrioid carcinomas account for 8-15% of all ovarian carcinomas. It is considered the second commonest malignant ovarian neoplasm [8].
- Both endometrioid and clear cell tumours are frequently associated with endometriosis

Pathology

- these tumors are similar to that of other epithelial lesions, with variable cystic and solid components.
- Occasionally, it may be completely solid.
- Histologically, an endometrioid carcinoma is characterised by the appearance of tubular glands and bears a strong resemblance to the endometrium.
- Squamous differentiation can be present in more than a third of patients [8].
- A benign endometrioid carcinoma is relatively uncommon and when it is benign it tends to be an ovarian cystadenofibroma [3].

Associations

- Synchronous endometrial carcinoma or endometrial hyperplasia may be present in up to a third of cases
  - the endometrial abnormality is thought to represent an independent, primary lesion rather than metastatic disease
- endometrioid carcinoma is the most common malignant neoplasm arising within an endometrioma, although overall this is an uncommon occurrence
- **Location - laterality**
  - Bilateral involvement can be seen in 25-40% of cases

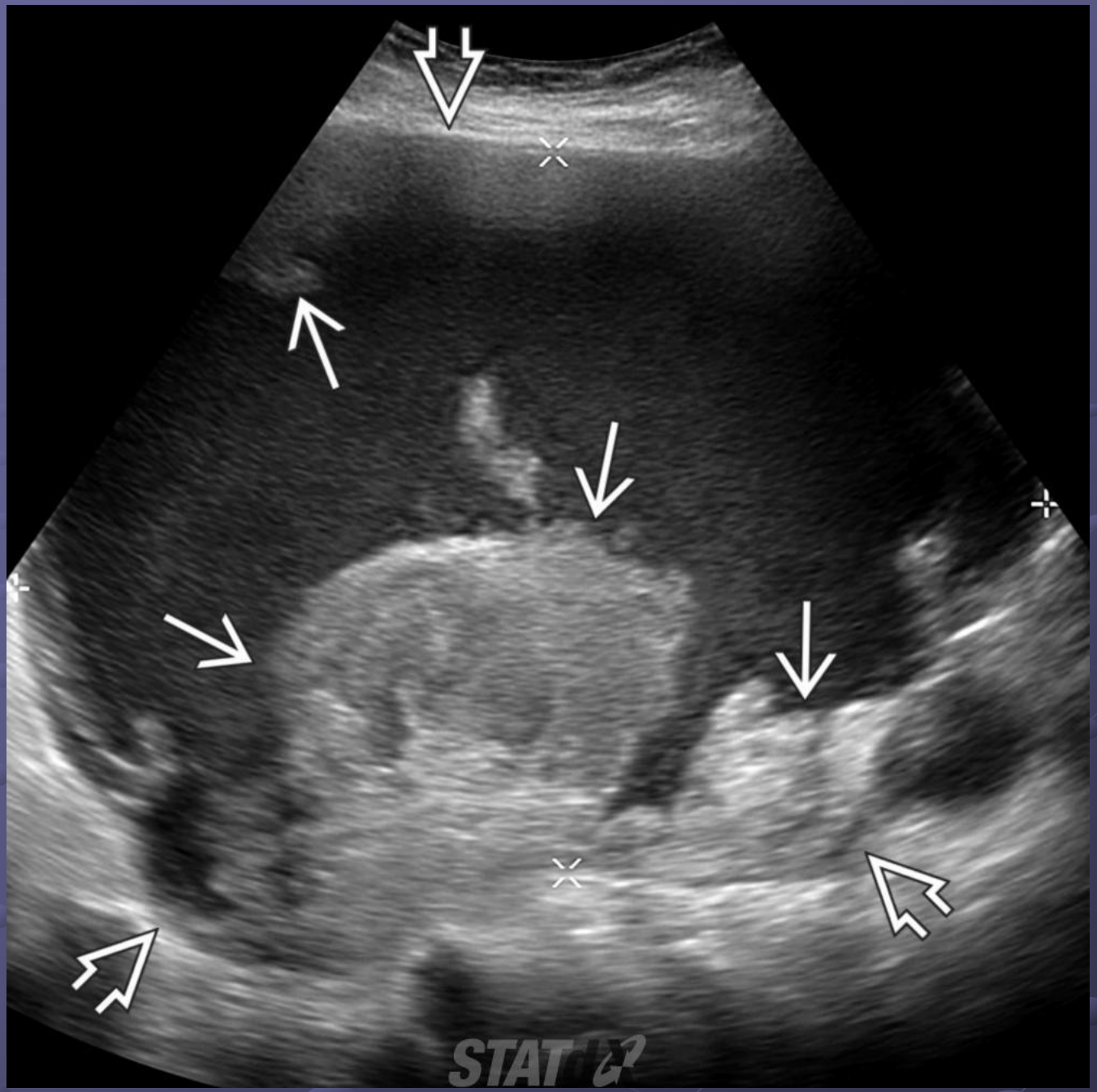
Imaging

- Imaging findings are often non-specific and include a large, complex cystic mass with solid components.
- There may be associated endometrial thickening, evidence of endometriosis or a contralateral mass.
- **MRI**
- Reported signal characteristics include:
- **T2**:
  - relatively low signal intensity of the tumour wall
  - shading sign may be seen [3]
- **T1 C + (Gd)**: can show mild enhancement

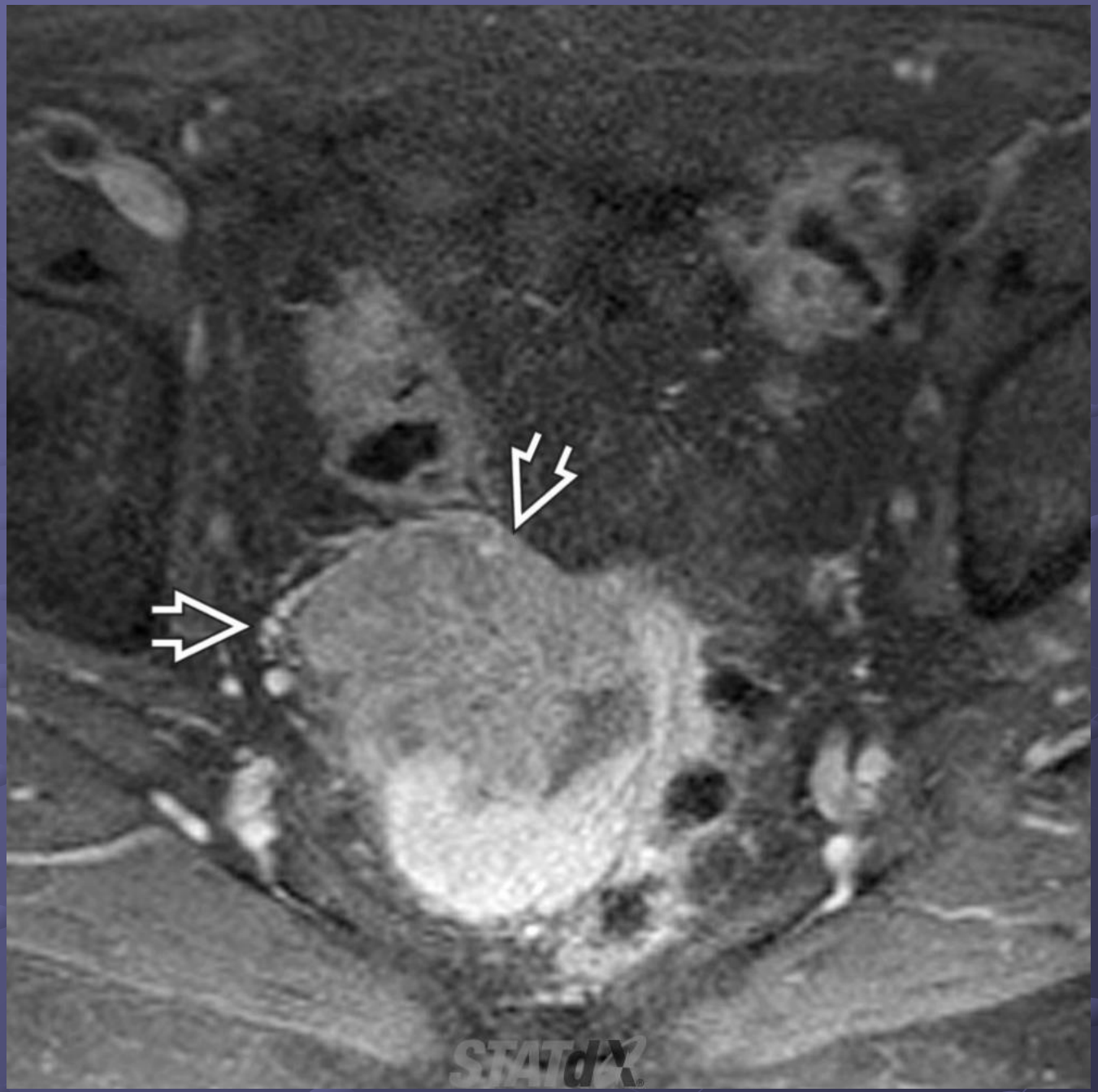
- Clinical Issues
  - 2nd most common ovarian cancer
  - Up to 42% of patients have endometriosis
- High incidence of concomitant synchronous endometrial carcinoma representing a 2nd primary tumor rather than metastatic disease.
- Consider
  - Endometrioid carcinoma in presence of mixed solid and cystic ovarian mass in postmenopausal woman with coexisting endometrial neoplasm

DDx:

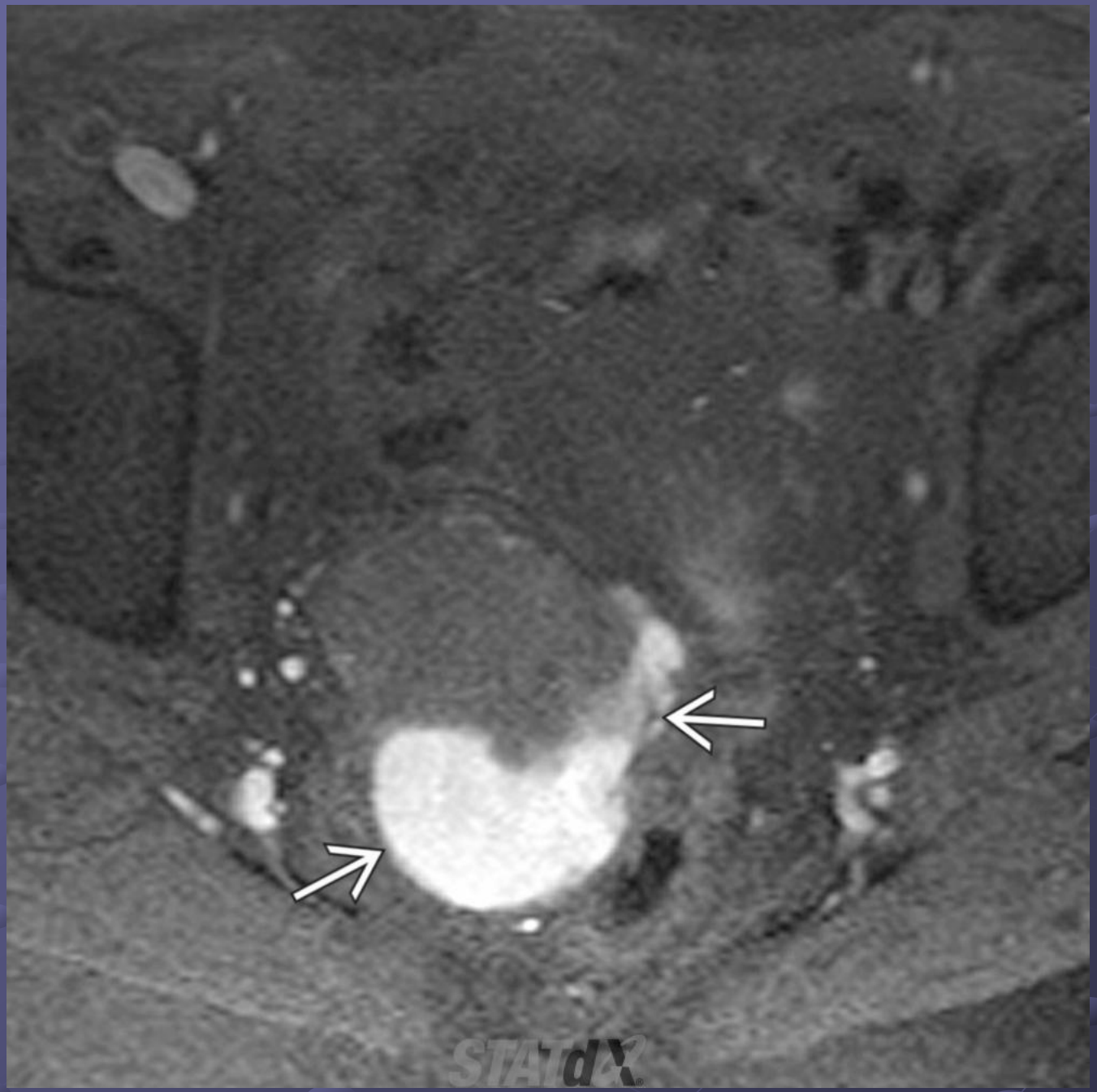
- **Serous Cystadenoma/Carcinoma**
  - Most commonly presents as cystic mass with papillary projections
  - Calcified psammoma bodies may be detected by CT
- **Mucinous Cystadenoma/Carcinoma**
  - Large, multiloculated cystic mass
  - "Marble" appearance due to variable mucin content within locules
- **Clear Cell Carcinoma**
  - 45-49% associated with endometriosis
    - May develop from endometrioma
  - Mixed solid/cystic mass
  - No definite imaging criteria to differentiate from other epithelial neoplasms
- **Endometrioma**
  - Uniform high SI on T1WI
  - Low SI on T2WI: Shading
  - Absence of enhancing soft tissue nodule



Axial transabdominal ultrasound shows a large predominantly cystic ovarian mass (white open arrow) with large peripheral solid components (white solid arrow). The cyst is filled with homogeneous fluid with low-level echoes. The solid component is of heterogeneous echogenicity.



Axial T1WI C+ FS MR in the same patient shows significant enhancement of the anterior solid component (white open arrow). Surgery confirmed endometrioid carcinoma arising in an extraovarian endometriotic cyst.



Axial T1WI FS MR in the same patient shows persistent high signal in the posterior component of the lesion (white solid arrow), confirming that the high signal is due to blood products and not fat.