Ovarian serous cystadenocarcinoma

- ovarian epithelial tumour at the malignant end of the spectrum of ovarian serous tumours.
- **Epidemiology**
  - They account for the largest proportion of malignant ovarian tumours [1], representing over 50-80% of all malignant epithelial ovarian tumours [4]. The prevalence peaks around the 6th to 7th decades of life [2].
  - Serous ovarian cystadenocarcinomas account for ~25% of serous tumours [ref].
- **Pathology**
  - Macroscopically serous cystadenocarcinoma appears as a multilocular cystic ovarian tumour with papillary projections.
  - Due to this reason, it can also be termed a **papillary serous cystadenocarcinoma of the ovary**.
  - Psammomatous bodies may be present in ~30% of cases on histology.

Risk Factors

- Recognized risk factors include:
  - nulliparity
  - early menarche
  - late menopause
  - positive family history
  - infertility
- **Markers**
  - elevated serum CA-125 (>90% of cases [6])

Clinical issues

- ↑ CA125 in majority of cases of ovarian serous carcinoma
  - Not recommended for initial screening due to lack of sensitivity and specificity
- Predominantly perimenopausal and postmenopausal women
- ~ 60% of all ovarian malignant tumors
- 5-year survival rate
  - LGSC: ~ 40–56%
  - HGSC: ~ 10–20%
- Treatment: Cytoreductive (tumor-debulking) surgery
- Bilaterality and peritoneal carcinomatosis is seen more frequently in serous than in mucinous cystadenocarcinomas

US

- more heterogeneous in appearance than a serous cystadenoma
- papillary projections, thick septations, and/or solid components
- presence of ascites
  - concerning for peritoneal metastatic spread
  - discrete peritoneal deposits may be seen
- colour Doppler is useful to confirm vascularity of the solid components
  - quantitative parameters (resistive index and pulsatility index) do not reliably predict malignancy

CT

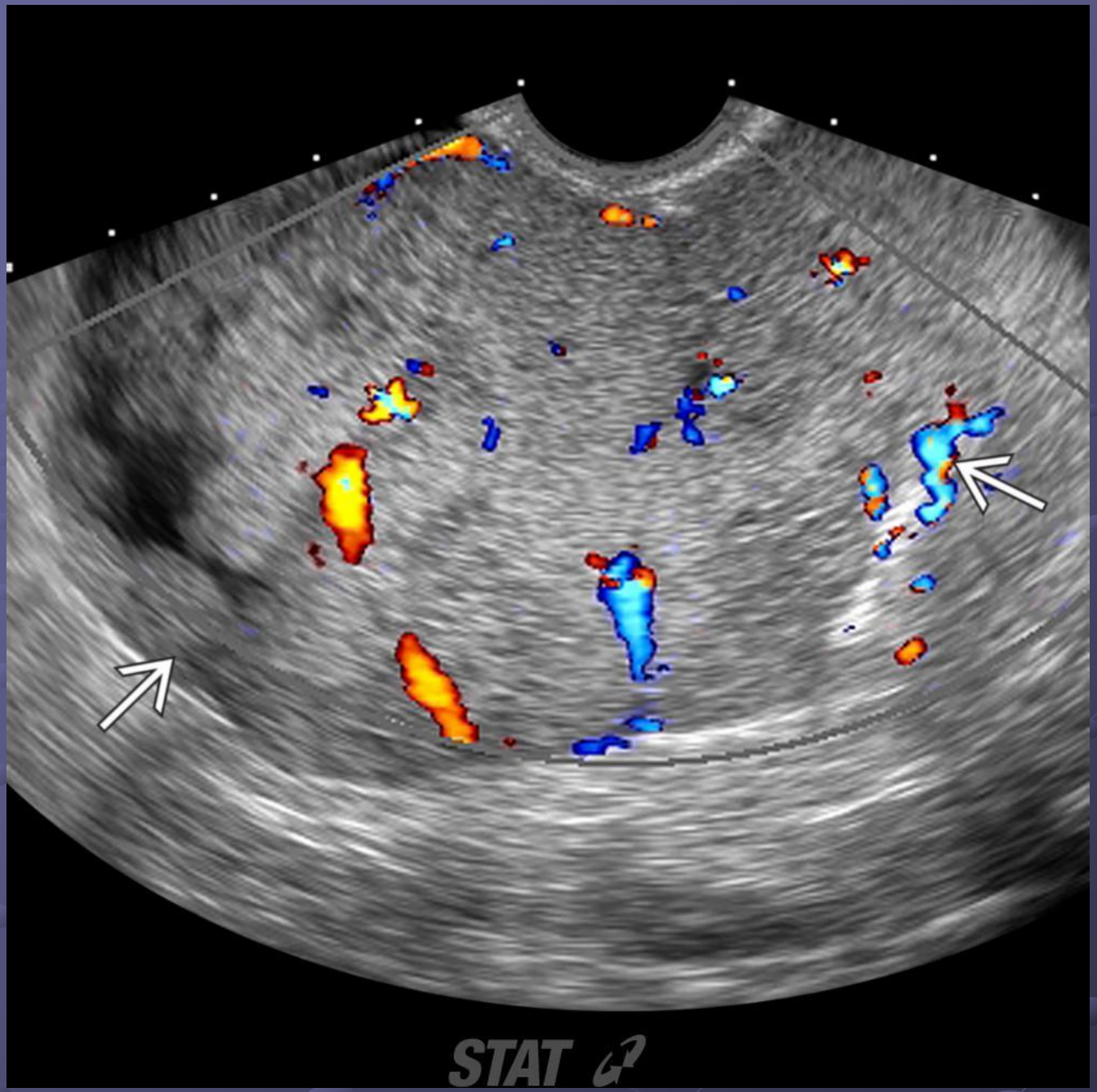
- Calcification is detected in ~12% of tumours on CT [4] but is nonspecific as calcification can also be seen in benign serous tumours and other neoplasms.
- CT can be used for preoperative staging to look for lymphadenopathy, peritoneal, and distant metastases.

MRI

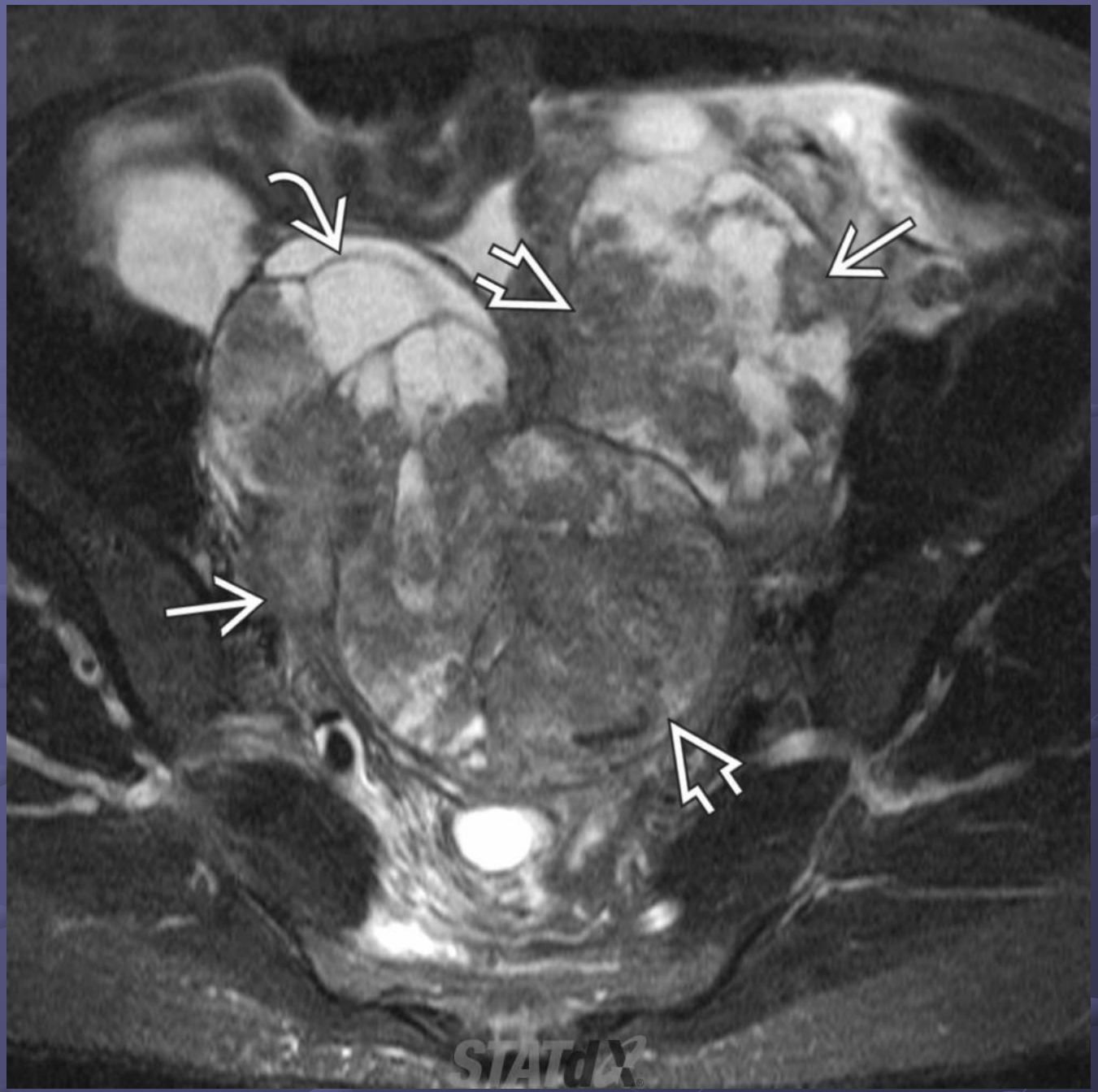
- MRI is the modality of choice in the characterization of ovarian malignancy and the detection of lymphatic, peritoneal, and distant metastases, both for preoperative planning and post-treatment follow up.
- The cystic components are high T2, low T1 signal unless there has been intralesional hemorrhage (c.f. mucinous cystadenocarcinoma, where there is typically slightly increased T1 signal of the cystic component).
- Solid malignant components demonstrate intermediate T1 and T2 signal, restricted diffusion, and gadolinium enhancement.
- DWI is useful for detection of distant metastases.

DDx:

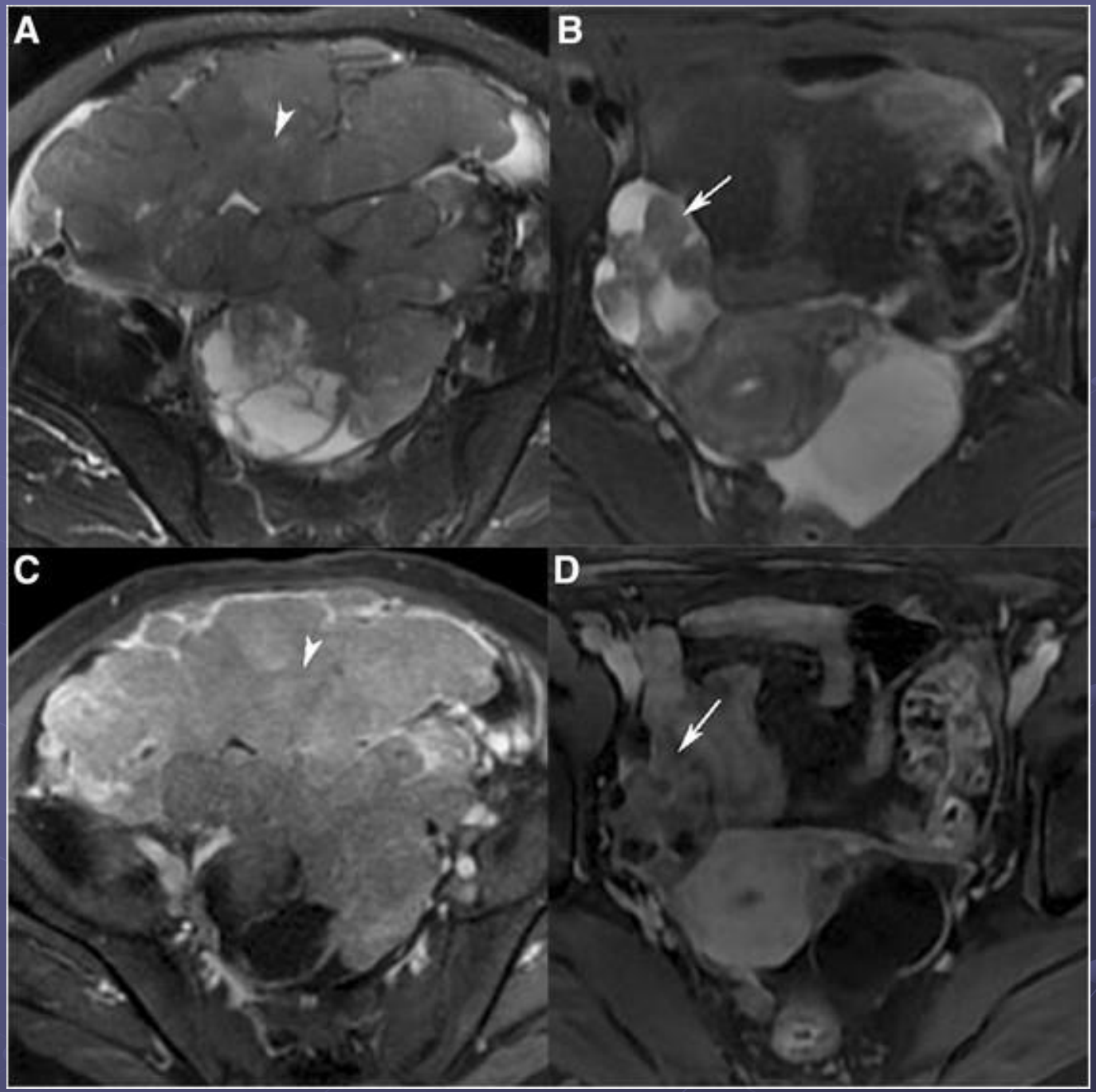
- **Benign Serous or Mucinous Cystadenoma of Ovary**
  - Often < 4 cm in size
  - Entirely cystic
  - Wall thickness < 3 mm
  - Absence of ascites, peritoneal disease, or lymphadenopathy
- **Mucinous Cystadenocarcinoma of Ovary**
  - Tend to be larger and multiloculated
  - Often variable echogenicity (US), density (CT), or signal intensity (MR) owing to mucinous contents of cystic components
- **Ovarian Metastasis**
  - Most ovarian metastases are solid or mixture of solid and cystic tumors
  - Clinical presentation often due to primary disease



Axial transvaginal color Doppler ultrasound shows a large, almost completely solid pelvic mass (white solid arrow) with increased vascularity.



Axial T2WI FS MR shows bilateral ovarian masses (white solid arrow) with prominent solid components (white open arrow) demonstrating high signal intensity relative to pelvic skeletal muscles and very high signal cystic components (white curved arrow). Both high- and low-grade ovarian serous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