Sonographic Evidence of a Large Germ Cell Tumour in a 13-year-old Girl – A Case Study

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Background. Malignant ovarian germ cell tumours are a rare neoplasm that primarily occur in young women.

Aims. This case presents imaging of a large mixed germ cell tumour in a teenage girl.

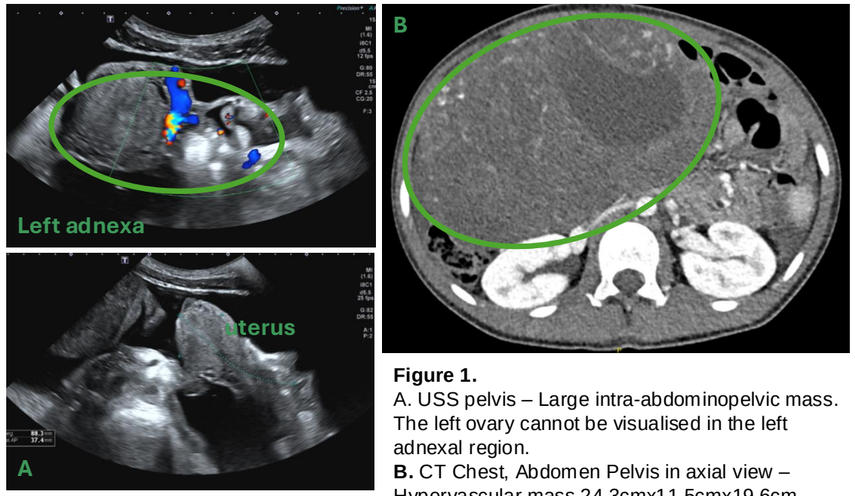

Figure 1.
A. USS pelvis – Large intra-abdominopelvic mass. The left ovary cannot be visualised in the left adnexal region.
B. CT Chest, Abdomen Pelvis in axial view – Hypervascular mass 24.3cmx11.5cmx19.6cm separate from the uterus. Likely of ovarian origin. The solid and hollow viscera of the abdominopelvic cavity are displaced.

Case. A 13-year-old child was referred for an abdominal and pelvic ultrasound by her GP for a history of menorrhagia, worsening abdominal distension and fatigue. The ultrasound showed a large 253mm intra-pelvic solid-cystic vascular mass with four-quadrant large volume ascites. The left ovary could not be visualised. The uterus and right ovary were normal.

Following her presentation to the emergency department, the patient was reviewed jointly by paediatric and gynaecology teams. She was immediately referred to the oncology team at Queensland Children's Hospital (QCH). She had a CT chest, abdomen and pelvis which showed a hypervascular mass of ovarian origin occupying most of the peritoneal cavity. There was no evidence of lymphadenopathy or metastatic disease. Lactate dehydrogenase (517u/L), Alpha-Fetoprotein (116ug/L), CA-125 (135kU/L) and Human Gonadotropin Hormone (4318IU/L) levels were significantly elevated.

The patient was transferred to QCH. She underwent a laparotomy, left salpingo-oopherectomy with peritoneal and omental biopsies.

Results. The patient recovered well. Serial lactate dehydrogenase, HCG and Alpha-fetoprotein levels were collected weekly; All of which were within normal limits four weeks post-procedure. There was no evidence of malignancy on cytology or omental biopsy. Histopathology confirmed a diagnosis of mixed germ cell tumour (teratoma 85% and dysgerminoma 15%).

Discussion. Germ cell tumours present with nonspecific symptoms often persisting for months prior to assessment or imaging. Though rare, clinical consideration of germ cell tumours in young women presenting with vague abdominal symptoms is paramount for early recognition and treatment.

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References. Ramalingam, P. (2023) 'Germ cell tumors of the ovary: A Review', *Seminars in Diagnostic Pathology*, 40(1), pp. 22–36. doi:10.1053/j.semdp.2022.07.004.