

# Ovarian dermoid presenting as unilateral obstructive uropathy

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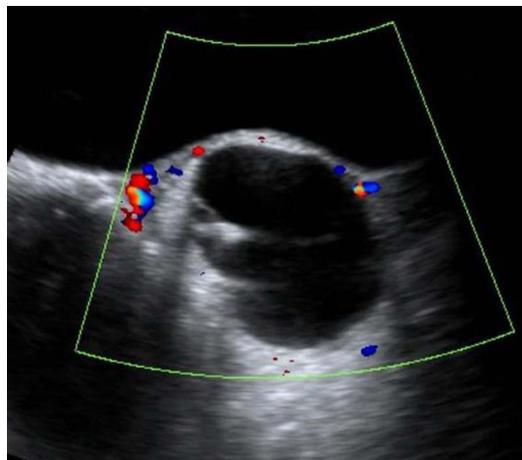
## DESCRIPTION

A 17-year-old female patient presented to the emergency department with history of intermittent right sided colicky abdominal pain and nausea since 3 weeks. Urine analysis revealed no evidence of infection. She was referred for imaging workup, which included an abdominal ultrasound examination that revealed right sided mild hydroureteronephrosis, but the distal ureter could not be visualised due to poor acoustic window. However, a vague right adenexal cystic lesion (figure 1) was noted and a CT scan was advised to characterise the lesion and to assess the cause for the obstructive uropathy.

CT scan of the abdomen and pelvis was performed which revealed a well-defined right adenexal lesion with intralesional fat (hounsfield unit (HU) -90) and calcification involving the right

ovary which was diagnosed as an ovarian dermoid. The right ovarian dermoid was noted adjacent to the distal ureter causing its compression, resulting in right sided hydroureteronephrosis. No intraluminal ureteric calculi were noted (figures 2–4).

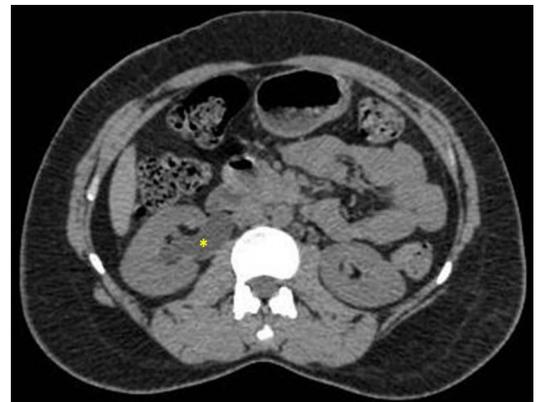
The dermoid cyst was surgically confirmed and patient underwent a right oophorectomy following which the patient's symptoms completely resolved. Histopathology of the lesion confirmed that it was an ovarian dermoid.



**Figure 1** Ultrasound image showing an anechoic adenexal cystic lesion with no septations, mural components or internal vascularity.



**Figure 2** Axial non-enhanced CT section showing a well-defined right ovarian lesion with intralesional fat (asterisk) and calcifications (arrow).



**Figure 3** Axial non-enhanced CT section showing right hydroureteronephrosis (asterisk).



**Figure 4** Oblique coronal reformatted non-enhanced CT image showing right ovarian dermoid causing obstructive right hydroureteronephrosis (arrow). RT, right.



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Dermoid cysts are the most common ovarian neoplastic lesions found in adolescents. These masses are a benign type of germ cell tumours that arise from totipotent cells in the ovary which develop into fully differentiated ectodermal, mesodermal and endodermal tissues.<sup>1</sup> Fat attenuation within a cyst, with or without calcification in the wall, is diagnostic for dermoid cyst. Fat is reported in 93% of cases and teeth or other calcifications

in 56%.<sup>2</sup> Ovarian dermoids are associated with complications including torsion, rupture, ureteric obstruction, infection and malignant transformation. These complications require different management strategies, therefore timely and accurate diagnosis is important for optimal patient care.<sup>3</sup>

Non-enhanced CT has higher sensitivity in detecting distal ureteric calculi and has the advantage of detecting extrauterine retroperitoneal and pelvic masses that cause ureteral compression as was the case with this patient.

### Learning points

- ▶ Dermoids are the most common ovarian tumours in younger patients which develop from fully differentiated ectodermal, mesodermal and endodermal components.
- ▶ Ovarian dermoids should be considered in the differential diagnosis of distal ureteric obstruction causing proximal hydronephrosis in young female patients.
- ▶ Intratumorous fat of dermoid cysts shows negative attenuation on non-enhanced CT and is a highly specific diagnostic finding.

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**Patient consent** Obtained.

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