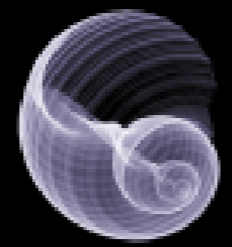


Transvaginal ultrasound: Beware the cervical cancer



Introduction

Cervical cancer accounts for 2% of all new cancer cases in females in the UK (2015), and whilst the majority of cases are diagnosed following cervical smear and biopsy, patients with abnormal bleeding can present for transvaginal ultrasound (TVS) prior to examination. We propose that it is of paramount importance to ensure that the cervix is routinely adequately imaged on all pelvic ultrasounds (both transabdominal or transvaginal) for all clinical presentations especially bleeding. This poster outlines three cases of carcinoma of the cervix, and one false positive on ultrasound. Two of the cases were initially thought to be fibroids. Recommendations for further signposting are made.

Case 1

59 year old presented with post-menopausal bleeding
Ultrasound demonstrated ill-defined, hypoechoic, vascular areas in the cervix (Images 1 and 2). Fluid was present within the endometrial cavity. On subsequent MRI imaging (Image 3), the hypoechoic foci correlated to a circumferential tumour in the cervix, extending into the upper vagina. Loss of the cervical stromal ring was noted and parametrial spread was present. Tumour also involved the distal left ureter and was inseparable from the sigmoid colon.



Image 1: Hypoechoic foci within the cervix (red arrow)



Image 2: Hypoechoic foci in the cervix demonstrates flow on Colour Doppler imaging

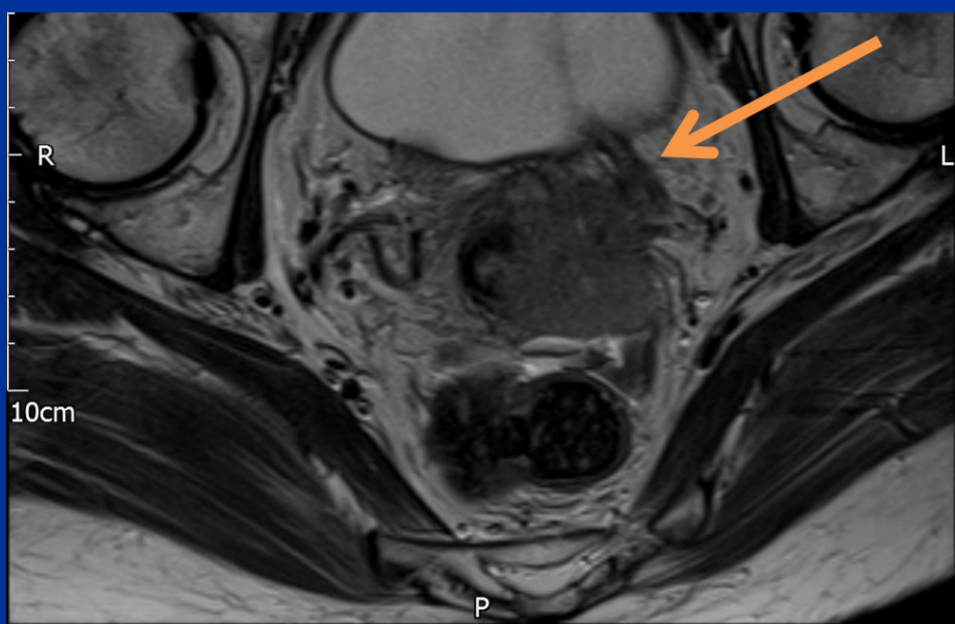


Image 3: The cervical tumour is demonstrated with parametrial spread and involvement of the left distal ureter (orange arrow)

Case 3

32 year old presented with irregular bleeding and profuse discharge, with a 2cm cervical fibroid on speculum exam.
On ultrasound, the cervical posterior wall contained a heterogeneous, isoechoic, vascular, well-defined lesion measuring 4.1 x 2.8 x 2.4 cm (orange arrow, image 9). A small volume of fluid was present in the endometrial cavity. This was thought to be a cervical fibroid on ultrasound and the patient underwent a local resection of the mass, which was proven to be cervical adenocarcinoma on histology, with involved margins and vascular space invasion. The patient had subsequent pelvic radiotherapy and systemic chemotherapy.
PET-CT and Pelvis MRI 1 month post-surgery did not display any definitive evidence of local disease spread, and there was no evidence of disease recurrence on a repeat Pelvis MRI 5 months postoperatively and no disease was seen on subsequent hysterectomy/pelvic clearance.



Image 9: Cervical mass seen on longitudinal image of uterus and cervix (orange arrow)

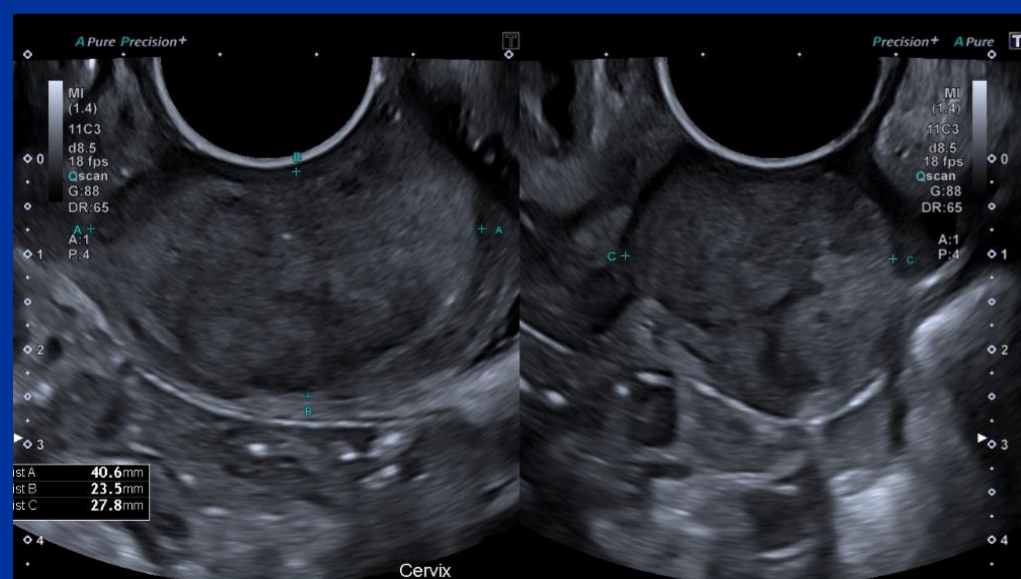


Image 10: Further focused views of the heterogeneous isoechoic cervical mass



Image 11: The mass demonstrates vascularity on Colour Doppler imaging

Conclusion:

Cervical cancers can be visible on pelvic ultrasound and should be in the differential of cervical masses. The authors recommend careful assessment of the cervix as standard, with careful evaluation of any regions of interest with Doppler, as tumours are more likely to demonstrate vascularity than fibroids. **Where there is suspicion for a cervical tumour, the reporter should recommend clinical examination and biopsy.** If biopsy proven, MRI can be performed for lesion characterisation and subsequent local staging of cervical tumours.

Case 2

49 year old presented with heavy PV bleeding for 3 weeks, with lower abdominal pain and anaemia.
Ultrasound demonstrated a rounded lesion in the region of the cervix with regions of flow on colour Doppler imaging (Images 4 and 5). This was thought to either be a mass or degenerating fibroid, biopsy demonstrated a cervical carcinoma.
On MRI, an 8 x 4 x 5cm mass was seen, with intermediate signal on T2 (Image 6) and restricted diffusion (Image 7). The cervical canal was displaced posteriorly. There was loss of the cervical stromal ring on the right (red arrow, Image 8). The lesion had restricted diffusion. Subsequent PET imaging also showed high uptake in this region.

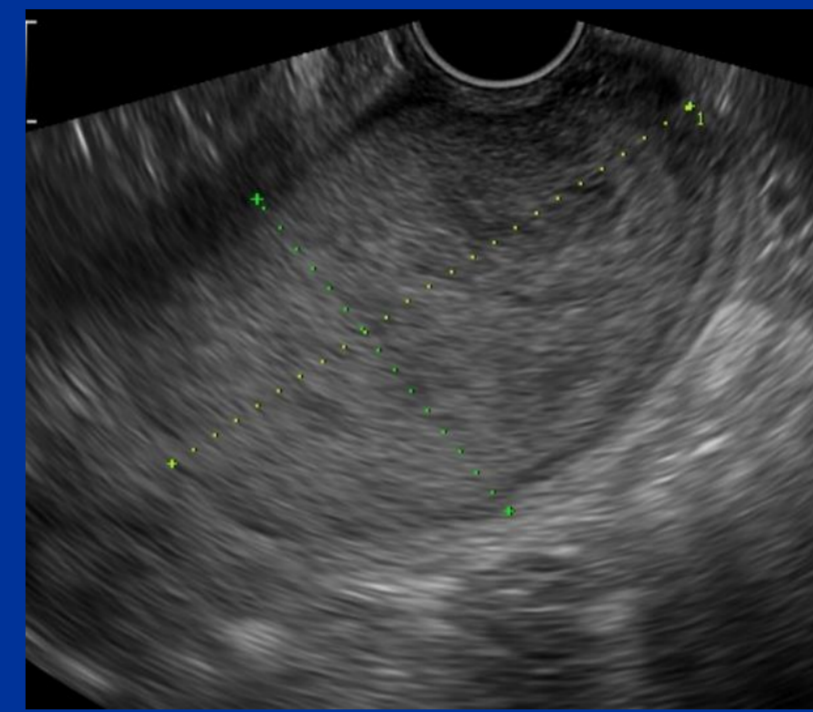


Image 4: Ill-defined heterogeneous lesion in the region of the cervix. The cervix could not be clearly defined.

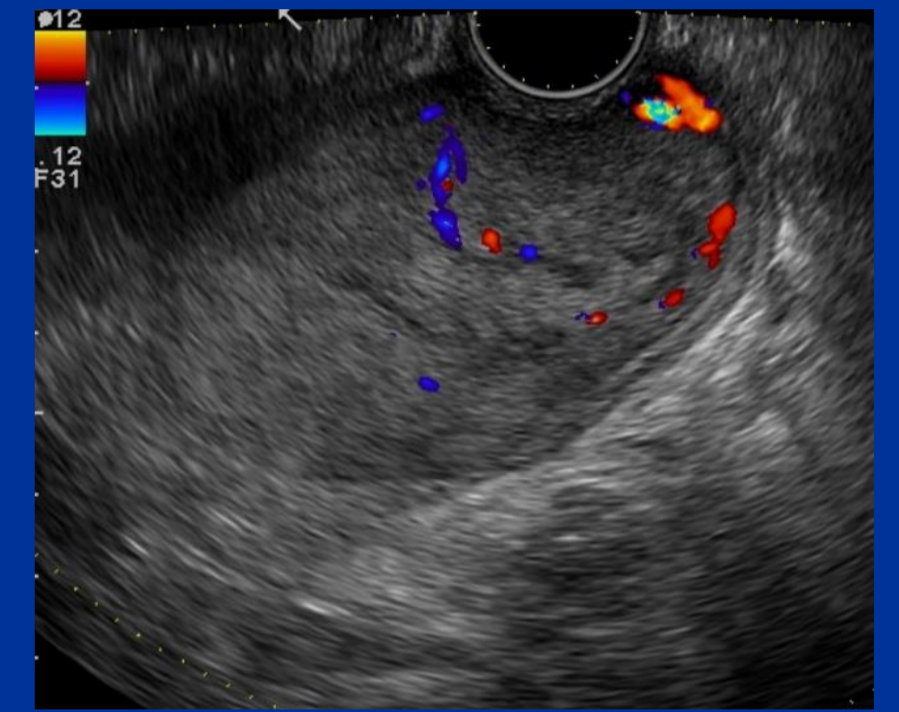


Image 5: The region demonstrated flow on Colour Doppler Imaging.

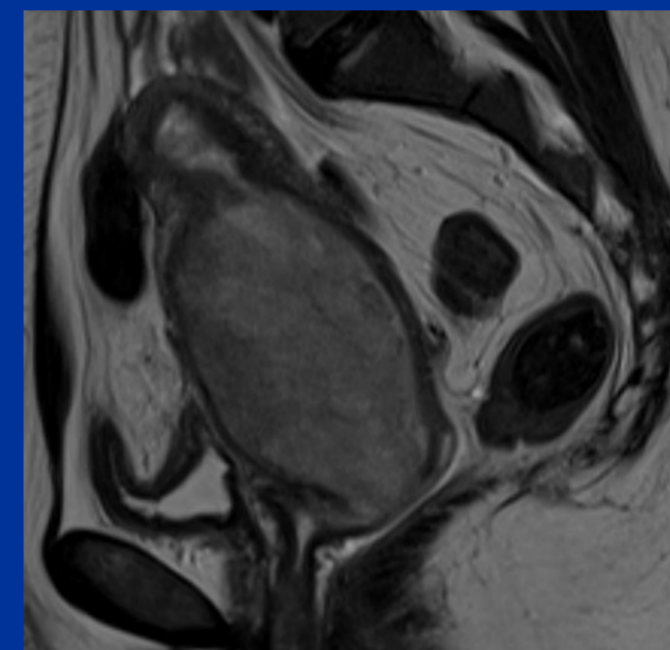


Image 6: 8 x 4 x 5cm mass in the anterior cervix

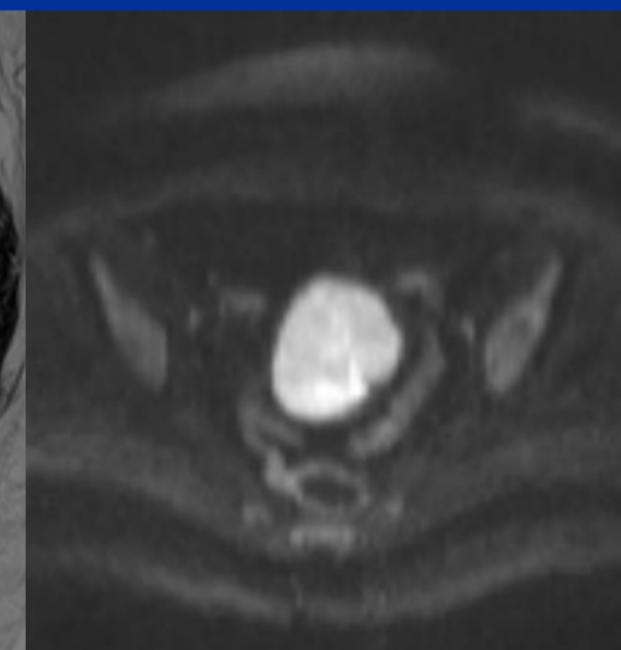


Image 7: The cervical mass has restricted diffusion

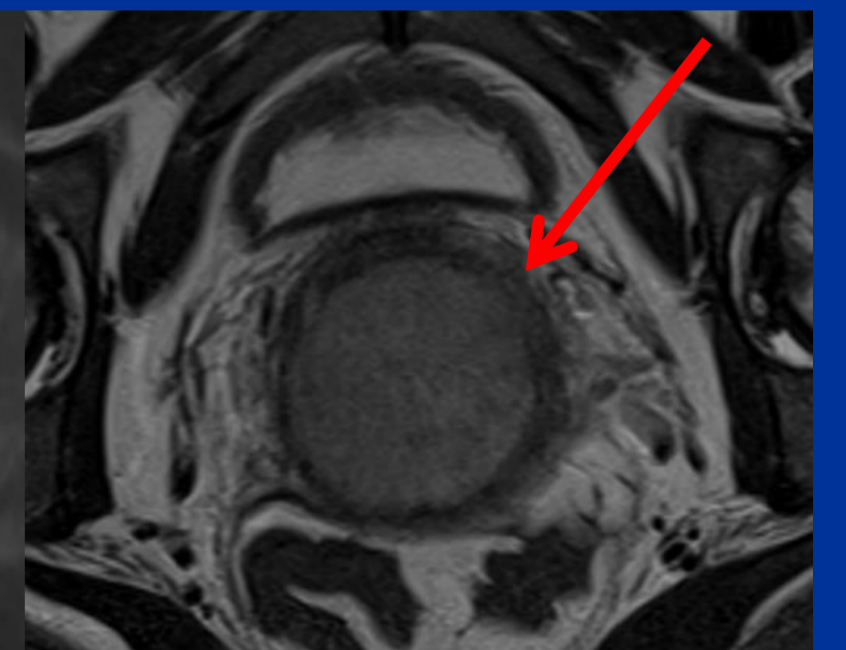
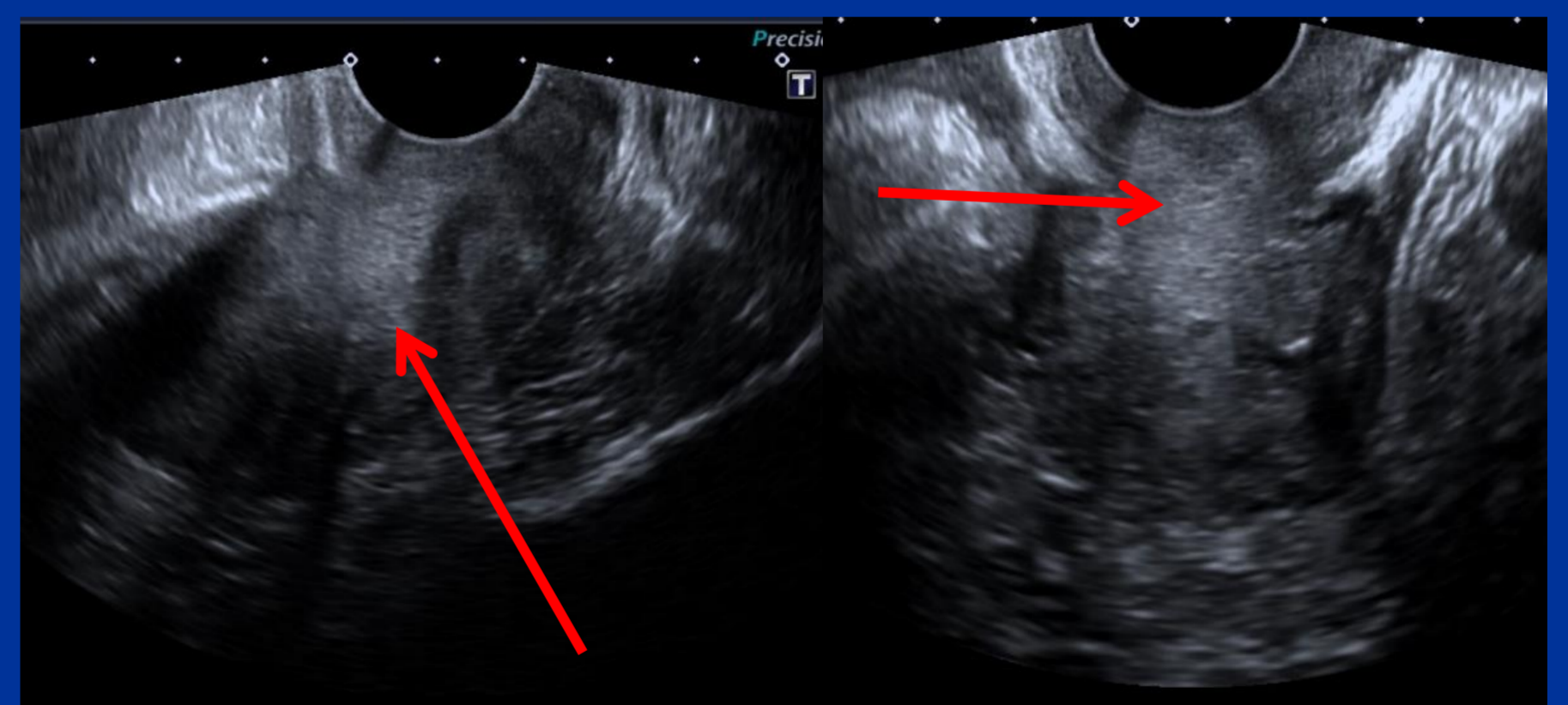


Image 8: Intermediate signal mass with loss of the cervical stromal ring on the right (red arrow)

Case 4

46 year old presented with menorrhagia. An irregular, echogenic region within the lower anterior myometrium and cervix measuring 1.8 x 3.1 cm was demonstrated on ultrasound (red arrows, image 12 and 13). This region extended from the cervix to the lower uterine segment, from the endometrial canal to the serosal surface. This area was normal in a previous pelvic ultrasound 5 years prior. The patient had a normal hysteroscopy and endometrial biopsy with no cervical mass seen. However the patient also had a pelvic MRI, which did not demonstrate any abnormality in the anterior cervix, but did demonstrate severe adenomyosis, with uterine distortion causing a pseudo-mass appearance.



Images 12 and 13: Hyperechoic ill-defined region on longitudinal and transverse images of the cervix and uterus (red arrows)

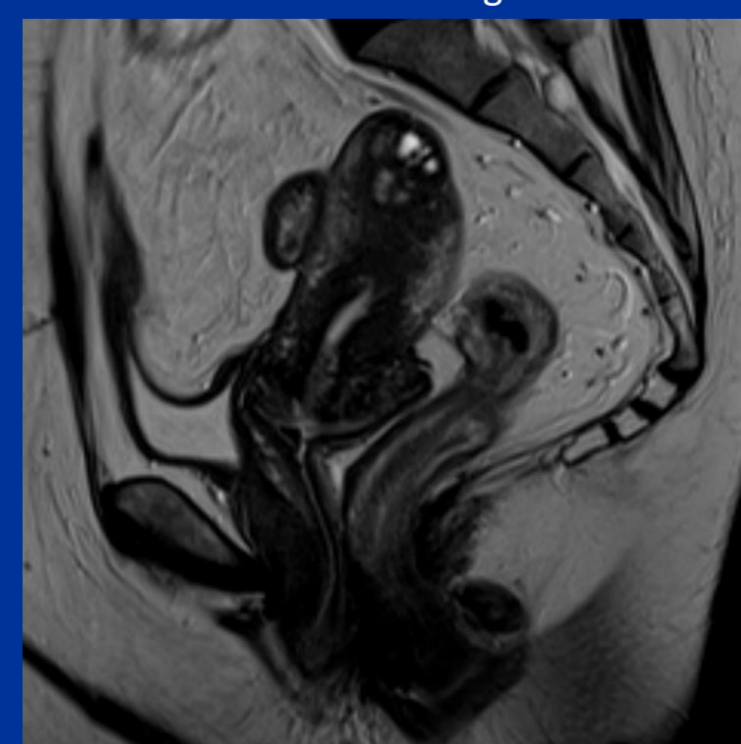


Image 14: Normal appearances of the anterior cervix

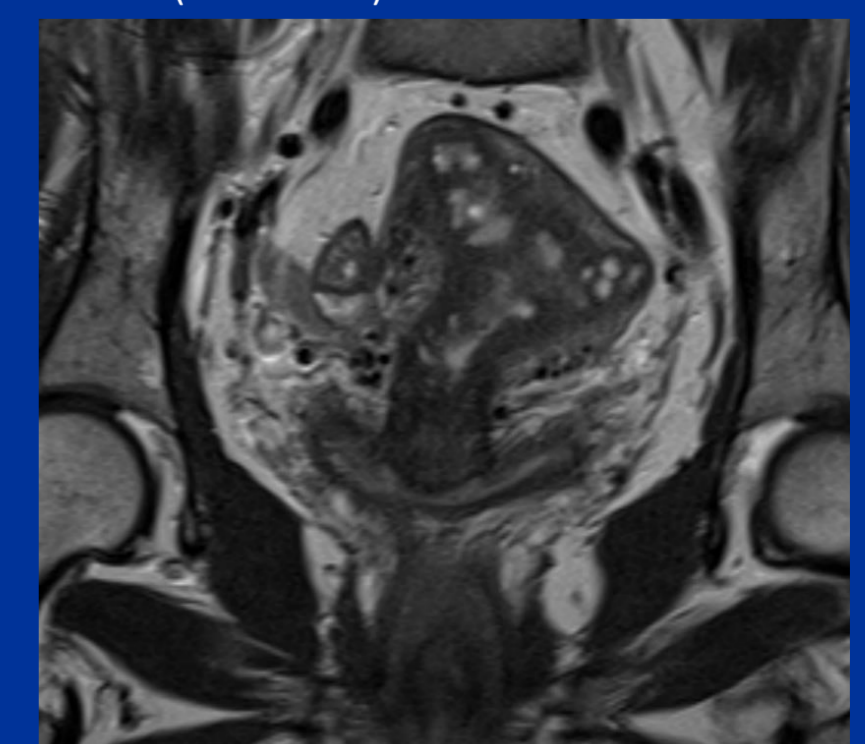


Image 15: Presence of adenomyosis

References:

1. Cancer Research UK. Cervical Cancer Statistics. <https://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/cervical-cancer>. Accessed June 2018
2. NICE. Suspected Cancer: recognition and referral. June 2015. <https://www.nice.org.uk/guidance/ng12/evidence/full-guideline-pdf-2676000277>. Accessed June 2018
3. Epstein E, Di Legge A, Masback A, Lindqvist PG, Kannisto P, Testa AC. Sonographic characteristics of squamous cell cancer and adenocarcinoma of the uterine cervix. *Ultrasound in Obstetrics & Gynaecology*. 36 (4)