Radiology Case Studies

Dr Jon Rees
Case 1

• 55 year old female

• Sent for renal ultrasound to investigate recurrent UTI’s

• Normal except:
Case 1
Case 1

• “A 14mm well-defined non-shadowing hyperechoic focal lesion is seen in the lower pole of the right kidney – appearances are suggestive of an angiomyolipoma”

• “Impression: Normal renal ultrasound except hyperechogenic focal lesion suggestive of angiomyolipoma”
Case 1

• What would you do?

a. Fast track referral to Urology
b. Urology / Radiology Advice and Guidance
c. Reassure patient, no further action
d. Repeat scan in 12 months
Angiomyolipoma

- Benign mesenchymal tumours

- Usually arise sporadically – occasionally hereditary (tuberous sclerosis)

- Incidence 0.44% - usually incidental finding (incidence rising – more imaging)

- Rarely can cause spontaneous haemorrhage – size most important risk factor

- Majority are small & do not grow

- Treatment options – selective embolisation, partial nephrectomy
Angiomyolipoma

AML <20mm

AML 21-29mm

Increase

US in 5 years

No change

Discharge

AML 30-39mm

Increase

US in 2 years

AML >40mm

Consider intervention

Abbreviations: US = Ultrasound scan, AML = Angiomyolipoma

Case 1

• What would you do?

a. Fast track referral to Urology
b. Urology / Radiology Advice and Guidance
c. Reassure patient, no further action
d. Repeat scan in 12 months
Case 2

• 30 year old male

• Sent for testicular ultrasound to investigate lump

• Scan shows lump to be an epididymal cyst

• BUT:
Case 2
Case 2

• What would you do?

a. Fast track referral to Urology
b. Urology / Radiology Advice and Guidance
c. Reassure patient, no further action
d. Repeat scan in 12 months
‘Consensus opinion of the scrotal subcommitee of the ESUR is that the presence of TML alone in the absence of other risk factors is not an indication for regular scrotal US. US is recommended in the follow up of patients at risk...’
I don't think we have fixed guidelines per se but this is how I handle them now (it has changed over the years)

1) Assess degree of microlithiasis. If low - moderate, ignore. This is roughly <25 microliths per testis.
2) If high volume, check for high-risk conditions (FH, PMH testis tumour, Klinefelters, Downs, previous orchidopexy)
3) If high volume and high risk, refer to urology for opinion.

I would only accede to annual ultrasound (which has no evidence as a preventative strategy, BTW), if a consultant urologist very deliberately and consciously recommended this in a high risk patient with high volume microliths.

I say this as we don't ultrasound people at higher risk (e.g. previous orchidopexy, Klinefelters etc) and just recommend self-examination.
Case 2

• What would you do?

  a. Fast track referral to Urology
  b. Urology / Radiology Advice and Guidance
  c. **Reassure patient, no further action**
  d. Repeat scan in 12 months
Case 3

• 61 year old female sent for renal ultrasound to assess for recurrent UTI

• Normal ultrasound except 3cm cyst in mid pole left kidney with visible septations. 2 x smaller simple cysts elsewhere in kidneys.
Case 3

• What would you do?

a. Fast track referral to Urology
b. Urology / Radiology Advice and Guidance
c. Reassure patient, no further action
d. Arrange CT renal
e. Repeat USS in 12 months
Renal Cysts
Renal Cysts

Bosniak classification of renal cysts

1. ~0% are malignant
2. ~0% are malignant
2F. ~5% are malignant
3. ~50% are malignant
4. ~100% are malignant
Case 3

• What would you do?

  a. Fast track referral to Urology
  b. Urology / Radiology Advice and Guidance
  c. Reassure patient, no further action
  d. Arrange CT renal
  e. Repeat USS in 12 months
Case 4

41 year old male is sent for abdominal CT to investigate abdominal pain. The CT is normal except for a ‘duplex collecting system’ in the left kidney.
Case 4

• What would you do?

  a. Routine referral to Urology
  b. Urology / Radiology Advice and Guidance
  c. Reassure patient, no further action
  d. Repeat scan in 12 months
Duplex kidney

Normal System

Duplex Kidney
Duplex Kidney

• Most common congenital abnormality of the urinary tract – 2% incidence

• Usually completely insignificant

• Can cause vesico-ureteric reflux (recurrent infection), stones
Case 4

What would you do?

a. Routine referral to Urology
b. Urology / Radiology Advice and Guidance
c. Reassure patient, no further action
d. Repeat scan in 12 months
Case 5

- 63 year old female – referred for renal ultrasound to investigate recurrent UTI.

- Normal scan except radiographer comments that the post void residual volume was 140mls
Case 5

• What would you do?

  a. Routine referral to Urology
  b. Urology / Radiology Advice and Guidance
  c. Reassure patient, no further action
  d. Repeat scan in 12 months
Case 6

• A 68 year old man presents with LUTS. He has a sensation of incomplete emptying as well as voiding LUTS. He has not had a UTI. He is not on any treatment. You wonder if you can feel a palpable bladder, so arrange a renal ultrasound.

• The scan is normal except for a post void residual of 180mls – the sonographer comments that this is significantly elevated.
Case 6

• What would you do?

a. Routine referral to Urology
b. Urology Advice and Guidance
c. Commence medication in primary care
d. Repeat scan in 12 months
Case 7

• A 31 year old man with chronic testicular pain is sent for a testicular ultrasound.
• The scan is normal except for a small varicocele and 3 small epididymal cyts.
• What would you do?
Case 7

• What would you do?

a. Routine referral to Urology
b. Urology Advice and Guidance
c. Reassure patient
d. Repeat scan in 12 months