The Royal Australian and New Zealand College of Radiologists®

e-Film Exam

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CASE 1

History
A 37-year-old female presented for routine anatomy scan following a low probability NIPT on 18th June 2018.

Imaging
Series 1 - Ultrasound: 30 images

Findings
Major Findings

- Large mass (88mm x 76mm x 66mm)
- Heterogeneous, solid and cystic mass
- Internal vascularity
- Mostly exophytic with a small pre-sacral component
- MCA PSV 28cm/second – no fetal anaemia
- No hydrops

Minor Findings

- Biometry – appropriately grown fetus
- Normal amniotic fluid AFI 19.5cm
- Normal ductus venosus waveform
- Anterior placenta not low lying
- Umbilical artery trace NAD

Likely Diagnosis
Sacro-coccygeal teratoma

Differential
Not applicable

Further Investigation or Management
Early referral to tertiary institution for confirmation and further management

CASE 2

History
11-year-old with seizures, hypertension and weight gain.

Imaging
Series 1 - MR Abdomen: 31 images
Series 2 - MR Abdomen axial: 60 images
Series 3 - MR Abdomen axial: 120 images
Series 4 - MR Head: 30 images

Findings
The significance of this case is to identify the findings of PRES secondary to hypertension on the MR head and to note the cause is an adrenal mass.

MR HEAD

- Frontal and occipital T2 flair hyperintensity
- Cortical and subcortical white matter involvement
- Subarachnoid T2 hyperintensity (subarachnoid blood)

MR ABDOMEN

- Large right adrenal mass (7cm x 9cm x 8cm)
- Heterogenous solid mass
- T1 hyperintensity/T2 hypointensity
- Mass indents superior pole of kidney inferiorly
- Invasion into the IVC
- Normal left adrenal
- At least 2 ipsilateral paracaval nodes
- Multiple liver metastases
- Lung metastases

Likely Diagnosis
Right adrenal cortical carcinoma with metastases
Posterior reversible encephalopathy syndrome secondary to hypertension

Differential
Phaeochromocytoma

Further Investigation or Management
Not applicable

CASE 3

History
46-year-old male presents with worsening upper abdominal pain.

Imaging
CT Abdomen
Series 1 - Arterial Phase 3mm slices Axial: 45 images
Series 2 - Arterial Phase 3mm slices Coronal: 22 images
Series 3 - Porto-venous Phase 3mm slices Axial: 82 images
Series 4 - Porto-venous Phase 3mm slices Coronal: 27 images

Findings
Major Findings

- Gastroduodenal artery abnormality
- Pseudo aneurysm outpouching
- Contrast extravasation
- Filling into large haematoma
- Peri pancreatic fat stranding/fluid
- Diffuse pancreatic calcification

Minor findings

- Dilated common bile duct/ intrahepatic duct
- Effaced portal vein/confluence/SMV
- Effacement of the adjacent pylorus and duodenum
- Secondary duodenal inflammation/bowel wall thickening
- Dilation of the pancreatic duct

Likely Diagnosis

- Gastro duodenal artery pseudo aneurysm
- Active extravasation
- Acute or chronic pancreatitis

Differential
Not applicable

Further Investigation or Management
Urgent IR (coil embolization under DSA)

CASE 4

History
A 61-year-old female presented with shortness of breath, tachycardia and calf swelling.

Imaging
A CTPA was performed
Series 1 - Axial: 91 images
Series 2 - Coronal MIP: 40 images
Series 3 - Lung axial: 91 images

Findings
CTPA
Major Findings

- Saddle pulmonary embolus
- Pulmonary emboli in bilateral lobar and segmental pulmonary arteries
- Thrombus in the right inferior pulmonary vein
- Dilated pulmonary trunk
- Extensive submental, cervical, axillary and mediastinal adenopathy

Minor Findings

- Bowing of the interventricular septum
- Reflux of contrast into the IVC
- Scattered ground glass opacity
- Right sided portacath
- Left renal calculus

Diagnosis
- Saddle pulmonary embolus
- Right heart strain
- Lymphadenopathy

Differential
Not applicable

Further Investigation or Management
Urgent respiratory referral

CASE 5

History
A 32-year-old female presented with a right upper neck mass.

Imaging
Series 1 - Axial: 66 images
Series 2 - Coronal reformats: 65 images

Findings
Modality CT
Major Findings

- Well defined thin-walled lobulated mass (5.5cm x 3.5cm x 5.5cm)
- Extending from the right sublingual space through a large mylohyoid muscle defect into the submandibular space, with displacement of intrinsic tongue muscles – candidate may use the term 'tail sign'
- Fluid or low attenuation contents
- Minor wall contrast enhancement or septation
- Several calcifications on wall
- No signs of infection

Other Findings
Calculus in hilum of right submandibular duct with mild intraglandular duct dilatation

Likely Diagnosis
Right diving/plunging ranula

Differential

- Epidermoid cyst
- Lymphatic malformation

Further Investigation or Management
MRI

CASE 6

History
A 20-year-old female presented with chronic arm discomfort.

Imaging
Series 1 - Plain X-rays: 3 images
Series 2 - Bone scan: 1 image

Findings
Xray
Major Findings

- Right humerus
    - Lucent lesion
    - Ground glass matrix
    - Expansile
    - Cortical thinning
    - Narrow zone of transition/well-defined
    - Sclerotic margin
    - Deformity
- Right ulna and radius also involved
- Several ribs involved (6,8,9,10 for the record)

Minor Findings

- No periosteal reaction
- No fracture
- No soft tissue mass

Bone scan
Major Findings

- Increased uptake in corresponding humerus, ulna, radius, ribs
- Further focus C7 (also elsewhere in spine but too subtle)
- Unilateral

Likely Diagnosis
Polyostotic fibrous dysplasia or McCune Albright

Differential
Not applicable

Further Investigation or Management
Endocrine review for McCune Albright

CASE 7

History
Mild right sided tinnitus and intermittent vertigo.

Imaging
Series 1 - FLAIR: 19 images
Series 2 - 3D Space: 40 images
Series 3 - DWI: 19 images
Series 4 - T1: 15 images
Series 5 - T1 contrast transverse: 15 images
Series 6 - T1 contrast coronal: 15 images

Findings
Mass in right cerebellopontine angle (15mm)
Signal characteristics

- FLAIR: isointense to grey matter
- T1: isointense
- DWI: no diffusion restriction
- T1-Gd: intense homogeneous enhancement; minimal, subtle dural tail

Anatomy

- Flat dural surface centred just below IAM
- Does not extend into IAM
- Does extend into cochlear aqueduct
- 7th and 8th nerves extend across anterior surface of lesion

Other

- Small white matter lesions, probably ischemic
- Old left parietal infarct

Likely Diagnosis
Meningioma

Differential
Schwannoma

Further Investigation or Management
Not applicable

CASE 8

History
67-year-old female, severe left upper quadrant pain since last evening.

Imaging
CT Abdomen and Pelvis
Series 1 - Transverse: 57 images
Series 2 - Coronal Series 2: 61 images

Findings
Major Findings

- 25mm length thin radio-opaque foreign body
- At level of the proximal jejunum
- Traverses bowel wall
- Adjacent pockets of air and fat stranding
- No associated collection

Minor Findings

- Previous AAA repair
- Suprarenal AAA 33mm
- No free fluid or air seen elsewhere
- No other abnormality is seen in the abdomen and pelvis
- Lung bases are clear

Likely Diagnosis
Small bowel perforation
Foreign body

Differential
Not applicable

Further Investigation or Management
Urgent surgical referral