Cerebral Lipoma: A Pictorial Review

J. Power, L. Nararyanan, A. Rana
Neuroradiology department, Aberdeen Royal Infirmary, NHS Grampian

Introduction
• Rare benign tumours
• Persistent disordered differentiation of meningeal matter into fat
• <0.1% of all intracranial tumours
• Depending on location, (adjacent to cranial nerves), can present with widely varied symptoms or be asymptomatic
• Well delineated extra-axial lobulated mass with fat attenuation/intensity
• Generally managed conservatively

Case 1: Tuber cinereum Lipoma
L-R: Sagittal T1 MRI showing high intensity in the tuber cinereum.
Sagittal T1 MRI Fat saturation showing low signal in the tuber cinereum.
Coronal T1 high signal tuber cinereum lipoma.

Case 2: Pericallosal lipoma
L-R: Sagittal non-contrast CT head showing low density in the pericallosal region.
Coronal non-contrast CT head showing low density fat in the pericallosal region.

Case 3: Extra-axial lipoma (T4-T10 extradural tumour)
L-R: Sagittal T2 MRI spine demonstrating high signal extra-axial mass.
L-R: Sagittal T1 MRI spine demonstrating high signal extra-axial mass.
L-R: Axial and coronal CT head demonstrating low density mass (fat containing).

Case 4: Peri-Callosal Dermoid
L-R: Axial, coronal and Sagittal CT Angiogram intracranial. Incidentally noted low density in the tuber cinereum, in keeping with a tiny lipoma.

Case 5: Tuber cinereum Lipoma
L-R: Axial and coronal T1 MRI showing high intensity in the pericallosal region.

Case 6: Falx Lipoma
L-R: Axial and coronal CT head demonstrating low density in keeping with a tiny lipoma.

Case 7: Pericallosal Lipoma
L-R: Sagittal and Axial T1 MRI demonstrating high intensity in the pericallosal region.

Case 8: Trigeminal Nerve Lipoma
L-R: Axial, Coronal and Sagittal CT Brain demonstrating an incidental low density lipoma situated close to the right trigeminal nerve which passes through an enlarged right foramen ovale.

Case 9: Tectal Plate Lipoma
L-R: Axial T1 MRI brain demonstrating high signal intensity nodule in the right tectal plate. On Axial T2 MRI the lesion remains high signal intensity. A diagnosis of incidental right tectal plate lipoma was made.

Teaching points
• MRI appearances
  Fat is bright on T1 and T2 sequences. Lipomas should lose their signal on fat suppression sequences. When in doubt, use fat saturation sequences.
• CT appearances
  Lipomas are low density (dark) on CT studies - 50 to –100 HU.
  Beware, as they can mimic intra-cranial free gas on non contrast CT brain.

For additional information, please contact:
Dr Jane Power, Dr Leela Nararyanan, Dr Arnab Rana
Radiology department, Aberdeen Royal Infirmary, NHS Grampian
j.power1@nhs.net