Cystic Meningioma

Case History: A 65-year-old patient presented with complaint of sudden onset of left sided hemiparesis.

Case History: A 65 year old patient presented with complaint of sudden onset of left sided hemiparesis. He also had complaints of a headache for the past five months. He has a known case of diabetes mellitus and IHD and has had regular treatment. Review of family history was unremarkable. On examination, there was severe loss of motor function on the left side of his body. The patient was then subjected to radiographic investigations.

Figure 1. Non contrast CT brain shows a large well-defined broad dural based extra axial solid (arrow) cystic lesion in right parietal region causing buckling of underlying cortex and white matter oedema.
Figure 2. Post-contrast CT brain shows a large well-defined broad dural based extra axial solid cystic lesion in right parietal region causing buckling of underlying cortex and white matter oedema with intense homogenous enhancement of solid portion of the lesion (arrow) and multiple intratumoral vascular channels (small arrow).
Figure 3. Non-contrast MRI brain shows a large well-defined broad dural based extra axial solid cystic lesion in right parietal region causing buckling of underlying cortex (arrow) and white matter oedema with midline shift of 6 mm towards left side. The lesion appears hyperintense on T2WI with internal dural based solid portion and septations and hypointense on T1WI.
Figure 4. Post-contrast MRI coronal T1 fat sat images intense homogenous enhancement of broad dural based solid portion of the lesion (arrow) and multiple intratumoral vascular channels (small arrow) and internal enhancing septae.

Non-contrast brain CT revealed a large well-defined broad dural based extra axial solid cystic lesion in right parietal region causing buckling of underlying cortex (Figure 1). On post-contrast study, solid portion of the lesion shows intense homogenous enhancement and multiple intratumoral vascular channels (Figure 2). Further brain MRI showed large extra axial broad dural based solid cystic mass in right parietal causing buckling of underlying cortex and white matter edema with midline shift of 6 mm towards left side (Figure 3). On post-contrast MRI, similar enhancement of the solid part was seen as on the CT and multiple intratumoral vessels and enhancing septae were seen (Figure 4).

Diagnosis: Cystic meningioma

Discussion: Cystic meningioma is applied to both meningiomas with intratumoral degenerative cyst formation as well as those with peritumoral arachnoid cysts or reactive intraparenchymal cysts. Patients present clinically in the same way as patients with non-cystic meningiomas, with symptoms related to increased intracranial pressure (ICP), focal neurology or seizures.

Nauta et al\(^3\) divided cystic meningiomas into four subtypes according to the location of the cyst with respect to the brain and meningioma:

Type 1: Intratumoral cyst(s), located centrally within the meningioma
Type 2: Intratumoral cyst(s), located peripherally within the meningioma but still surrounded by tumor
Type 3: Cyst(s) located within the adjacent brain
Type 4: Cyst(s) located between the meningioma and brain (arachnoid cyst)

The tumor itself has imaging features identical to non-cystic meningiomas. The cysts are of variable size and can be entirely surrounded by tumor (types 1 or 2) or clearly between tumor and brain (type 4) or within the adjacent brain (type 3). On imaging it is sometimes difficult to distinguish between these types.

The differential is dependent on the location of the tumor. For tumors around the base of skull, cystic schwannoma (eg, acoustic schwannoma, trigeminal schwannoma) are the main differential, as they share the bright contrast enhancement, and are commonly cystic when large.

References
