Worsening of chronic headaches with normal neurological examination.

**Imaging Findings:**

A 53 year old female patient presented with holocranial headaches (left predominance) for 2-3 years, considered being "tension headaches". In the latest times, they were more intense and frequent (multiple episodes in the last months) and associated with sleep disturbances. She hasn't taken diary drugs. On physical examination patient had no stick neck and no neurological signs. She underwent for imaging studies (brain CT and MR). On the CT there was a sharply demarcated area of marked low density, without enhancement after intravenous contrast. The MR showed a posteriorly located and curvilinear mass around the corpus callosum. The mass had high signal intensity on T1- and T2-weighted images. On saturated fat pulse sequence it is isointense to grey matter, confirming the diagnosis. In that case, the morphology appearance of corpus callosum was normal.

**Discussion:**

Intracranial lipomas are considered to be choristomas as they are histologically composed of mature non-neoplastic adipose tissue but anatomically misplaced. They are neither hamartomas not true neoplasms; rather they are rare congenital malformations resulting from persistence of meninx primitiva. The relative frequency of the locations of the lipomas correspond to the temporal sequence of dissolution of the meninx primitiva, the mesenchimal anlage of the meninges. Lipoma cells do not multiply and almost never exert mass effect on adjacent brain structures. As they are aldifferentiated subarachnoid spaces, blood vessels and cranial nerves course cross them. They are located in the midline in 90% of cases and supratentorial in 80% - interhemispheric fissure in 40-50%. The remainder masses are in the quadrigeminal/superior cerebellar, suprasellar/interpeduncular, cerebellopontine angle, sylvian cisterns and even rarely on the surface of cerebral hemispheres. Early pathologic reports of corpus callosal lipomas described a consistent anatomic relationship between the lipoma and the surface of the corpus callosum, as confirmed by MRI (T1WI sagittal). Therefore, in most cases, a lipoma of the corpus callosum is more accurately described as a pericallosal lipoma. More than half of them are associated with congenital malformations such as agenesis/dysgenesis of the corpus callosum as well as with choroid plexus lipomas, fronto-nasal dysplasias and Goldenhar syndrome.

Due to different morphologies and associated brain anomalies, two types are considered:
- anteriorly located bulky "tubulo-nodular", round or cylinder-shaped, generally greater than 2 cm in diameter and associated with high incidence of forebrain and rostral callosal abnormalities;
- posteriorly located ribbon-like, thin and curvilinear (usually associated with a normal corpus callosum).

Some authors support the idea that both types are developed in the region of the origin of the corpus callosum but formed at different times during gestation, with the tubulonodular ones forming earlier and thus being associated with more severe cerebral anomalies.

In the majority of cases, patients are asymptomatic and intracranial lipomas are found incidentally during brain
exams. Others can present headaches, seizures and/or behaviour disturbances, usually due to associated anomalies of the corpus callosum.

Plain radiographs of the skull may show curvilinear calcification, especially in the tubulonodular subtype. CT and MR usually lead to the diagnosis and MR imaging is particularly useful in depicting associated anomalies. On CT scan the mass appears smoothly demarcated and present with very low attenuation values of lipomas. They are often marginated by nodular or curvilinear calcification. On MRI scan, pericallosal lipomas are extra-axial masses, well-delineated and homogeneously hyperintense on T1 and T2 weighted images and can have low density areas due to rim calcification. They do not enhance after endovenous contrast. The best imaging tool in the diagnosis is fat suppressed MR images that confirm signal loss due to suppression of fat. Imaging features of pericallosal lipoma can be so early diagnosed in utero (obstetric sonography, fetal MRI). Superiority of MR in prenatal diagnosis is because of complementary evaluation for diagnosis of corpus callosum agenesis/dysgenesis and depiction of associated neurologic abnormalities.

**Differential Diagnosis List:** Pericallosal Lipoma (curvilinear type) - interhemispheric lipoma

**Final Diagnosis:** Pericallosal Lipoma (curvilinear type) - interhemispheric lipoma

**References:**

Osborn A. Diagnostic Imaging, Elsevier.
**Description:** It shows a thin and curvilinear hyperintense mass above a normal corpus callosum (dorsal pericallosal region, the most common site). It curves around corpus callosum body and splenium. No callosal fibers are seen dorsal or posterior to the lipoma.

T1-weighted sagittal images best demonstrate the relationship between the lipoma and the corpus callosum.

It is the most useful pulse sequence for diagnosing pericallosal lipomas and corpus callosal abnormalities. The short T1 relaxation time of fat results in a characteristic high signal intensity of the lipoma on short TR sequences. **Origin:**
Figure 2

Description: Presence of high signal intensity area in deep interhemispheric fissure, posteriorly and mainly near the splenium of corpus callosum. Anatomical relationship is best appreciated in sagittal images. Origin:
Description: Hypointensity at the site of the lipoma. Note that the fat in the calvarium also becomes hypointense. Application of saturated fat pulse will make the lipoma isointense to gray matter confirming the diagnosis. Origin:
Figure 4

Description: FLAIR shows a hyperintense mass at the dorsal aspect of the copus callosum. Origin:
Figure 5

Description: On CT there was a small sharply demarcated area of marked low density, without enhancement after intravenous contrast. Absence of indirect signs of corpus callosum agenesis (colpocephaly) and ventricular paralelism. Origin:
Description: On T2 weighted images there is an hyperintense area around the corpus callosum, suggestive of lipoma. It can have a thin area of signal loss around it representing calcification. Origin: