Acute Vertigo Attributable to Ruptured Intracranial Dermoid Cyst

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Abstract
Rupture of dermoid cysts is rare and usually spontaneous. The presenting clinical features of rupture can vary from none to headache, seizures, chemical meningitis, hydrocephalus, and cerebral ischemia. Early recognition is, therefore, vital. Dermoid cysts are composed of fat, keratin, hair, bone, cartilage, sebaceous and sweat glands which explain their radiological findings and help with rapid diagnosis. It is further hypothesized that it is the dissemination of these products into the subarachnoid space that leads to symptoms. Here we present a case of vertigo attributable to a ruptured dermoid cyst and, perhaps, irritation of the vestibular system apparatus.

Patient Case
Brief HPI
- 64 years old woman presenting with acute onset vertigo.
- Experienced transient episode of vertigo and nausea 1 week prior to presentation that resolved with rest.
- Vomited on day of presentation and persisted despite rest.
- Associated symptoms included headache and nausea.
- Lack of positional component to symptoms.
- History of progressive hearing loss and tinnitus in left ear.

Past Medical History
- Depression, Hypertension, Hypothyroidism

Medications
- Lisinopril, Hydrochlorothiazide, Fluoxetine, and Levothyroxine

Social History
- 37 pack-year history of smoking
- Retired R.N.

Exam
- Neurological exam was normal with exception of present Romberg.

Head CT obtained on presentation

Lipid material (100 to -50 Hounsfield units) will appear hypodense on CT imaging. In the image on the right, we see hypodense material disseminated into the subarachnoid space. On the left, the residual ruptured cyst is visualized.

Dermoid Cysts- Ectodermal in Origin

Prior Case Reports of Similar Presentations
Kabbasch et al. (2014) describe a case with similar symptoms in a 28 y.o. woman with 2 weeks of headache and vertigo. CT demonstrated disseminated hypodense lipid tissue in subarachnoid space. Cyst appears hyperintense on T1 sequence of MRI.

Asil et al. (2013) report a case of rupture of dermoid tumor in 53 years old patient with vertigo with similar image findings.

Characteristic Radiological Findings

CT Scan:
Lipid material (-100 to -50 Hounsfield units) will appear hypodense on CT imaging. In the image on the right, we see hypodense material disseminated into the subarachnoid space. On the left, the residual ruptured cyst is visualized.

MRI:
Lipid material will appear hyperintense on T1 sequence.

Conclusions
Dermoid cysts are slow growing benign tumors derived from the ectoderm. It is the rupture and dissemination of products into subarachnoid space that leads to symptoms.

References