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What is the most common shape and what is the most common location of an epidural (also termed extradural) hematoma?
Shape: bi-convex (also termed lentiform). Location: Temporal bone beneath the squamous portion.

What is the most common arterial source of bleeding with an epidural hematoma?
The middle meningeal artery (about 75% of cases).

Approximately what percentage of epidural hematomas have a co-existing skull fracture?
About 75%. Remember 75% for both epidural hematoma associations with middle meningeal artery bleeding as well as skull fractures.

True or false? Epidural hematomas may also arise from venous bleeding.
True. In rare cases, a venous bleed, such as a torn venous sinus, notably in the setting of a vertex epidural hematoma with tear of the superior sagittal sinus, can cause an epidural hematoma.

True of false? The extent of an epidural hematoma is limited by the venous sinuses
False.

True or false? The extent of an epidural hematoma is limited by the cranial sutures.
True (mostly). Exceptions do exist.

In what settings is it possible for an epidural hematoma to cross a cranial suture?
If sutural diastasis is present the dura may extend through a suture, and this would allow an epidural hematoma to cross the suture as well. Sutural diastasis is most common in the young pediatric population. If a fracture disrupts and crosses the suture, this is also a potential route of spread of epidural hematoma through the disrupted suture. A venous extradural hematoma from disruption of the superior sagittal sinus can also be seen to cross the midline across the sagittal suture. These are some exceptions to the typical rule that epidural hematomas do not cross cranial sutures.

True or false? The extent of a subdural hematoma is limited by the cranial sutures.
False. As the bleeding occurs under the dura, the attachment points of dura to the cranial sutures do not limit the spread of a subdural hematoma.

True of false? The extent of a subdural hematoma is limited by the dural reflections.
True. Reflections such as the tentorium, falx cerebri and falx cerebelli limit the spread of subdural hematomas.

What is the so-called "lucid interval" commonly associated with an epidural hematoma?
Most cases of an epidural hematoma have a traumatic event such as motor vehicle accident, sport injury, or other hit to the head, followed by possible loss of consciousness. Afterward, the individual often regains normal consciousness (the lucid interval) and then gradually loses consciousness again over the next hours if the epidural hematoma continues to enlarge.

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What does the swirl sign suggest in terms of an epidural hematoma?
Active bleeding at time of non-contrast CT is suggested when a swirl of blood is seen within the region of the epidural hematoma in that acutely extravasated blood is slightly denser than the lower attenuation clotted and older blood products. This same principle holds true for extradural hematoma and intracerebral hemorrhage in that acute bleeding can be seen as a swirl appearance within the larger hematoma. This can have implications for treatment as the swirl sign suggests that the hematoma will continue to expand and mass effect is likely to progress and therefore typically indicates a need for surgical evacuation of the hematoma.

What are leading features of mass effect resulting from an epidural hematoma?
Leading features of mass effect from epidural hematoma include midline shift and herniation, most commonly subfalcine herniation and uncal herniation.

True or false? Abducens nerve palsy can be an early sign of downward transtentorial herniation.
True. Abducens nerve palsy, usually ipsilateral to the epidural hematoma, can be a presenting symptom of transtentorial herniation.

True or false? Non-traumatic causes of epidural hematoma exist.
True. Bleeding from vascular anomalies like an arteriovenous malformation can result in epidural hematoma.

True or false? Non-traumatic causes of subdural hematoma exist.
True. Bleeding from intracranial hypotension, vascular malformations, coagulopathies, and some leukodystrophies can cause non-traumatic subdural hematomas.

What is the classic shape of a subdural hematoma?
Sickle-shaped, also termed crescent-shaped, which is in contradistinction to the classic bi-convex shape of an epidural hematoma.

What is the underlying classic mechanism that causes a subdural hematoma?
Tearing of bridging cortical veins is the classic mechanism of subdural hematoma with subsequent bleeding between the arachnoid and dura.

True or false? Most subdural hematomas are bilateral.
True and False. This is a tricky question. In adults nearly all subdural hematomas are unilateral. However, in infants most subdural hematomas are bilateral.

A subdural hematoma in an infant without definite etiology such as motor vehicle collision raises consideration for what potential important etiology?
A subdural hematoma in an infant without other definite cause indicates evaluation for non-accidental trauma. Of note, an isolated parafalcine (interhemispheric) subdural hematoma is commonly seen with non-accidental trauma.

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What is the most classic etiology for subdural hematomas in the elderly?
Falls in the elderly often lead to subdural hematomas. Repeated falls over time can cause a complex appearance of a subdural hematoma with varying densities due to varying ages of clotted blood. Note that subdural hematomas can be a cause of pseudodementia in the elderly.

What is the classic CT attenuation for hyperacute, acute, subacute, and chronic subdural hematomas?
This is a simplification, but for board exam purposes the following may suffice:

Hyperacute: Isodense to cerebral cortex with swirl sign present.
Acute: Hyperdense to cerebral cortex.
Subacute: Isodense to cerebral cortex for the first few weeks following bleeding.
Chronic: Hypodense to cerebral cortex (3 weeks+). Peripheral calcification can ensue.

If an acute subdural hematoma is isodense to the cerebral cortex, what underlying condition does this suggest?
Acute subdural hematomas are typically hyperdense compared to the cerebral cortex. If, however, a subdural is isodense in the acute setting this can be reflective of anemia with low hemoglobin, anticoagulation, and coagulopathies causing poor coagulation.

True of false? Cerebrospinal fluid (CSF) may also mix with blood products in a subdural hematoma.
True. As the arachnoid is often torn in a subdural hematoma, CSF often mixes with the blood products which can be one cause of mixed echogenicity within a subdural hematoma collection, along with clotted and unclotted blood products.

What are key features of a subdural hygroma?
A subdural hygroma is fluid (likely cerebrospinal fluid (CSF)) that accumulates in the subdural space and can co-exist with a subdural hematoma. These can be idiopathic, post-traumatic, or can result from intracranial hypotension. On imaging these appear as near CSF-density subdural fluid accumulations. Key imaging features to tell a subdural hygroma from a subdural hematoma are first, cortical veins that cross through the collection on contrast-enhanced imaging. If mass effect is seen on the vessels, this is more consistent with a subdural hematoma with near fluid/CSF density. Second, is using FLAIR on MRI to show that the hygroma has slight signal difference from pure CSF, typically being slightly more T2 hyperintense than CSF. Other entities like arachnoid cysts would follow CSF signal on all sequences.

What is the "it be iddy biddy baby doodoo" mnemonic?
This can help you remember how different ages of intracranial bleeding classically look on T1 and T2 MRI. The key is to remember the 5 stages of blood (hyperacute, acute, early subacute, late subacute, and chronic) and that the first letter in each pair is T1 and second T2.
I=isointense. B=bright/hyperintense. D=dark/hypointense. It Be=hyperacute is isointense on T1 and hyperintense on T2. IdDy=acute is isointense on T1 and hypointense on T2. BidDy=early subacute is hyperintense on T1 and hypointense on T2. BaBy= late subacute is hyperintense on both T1 and T2. DooDoo=chronic is hypointense on both T1 and T2.