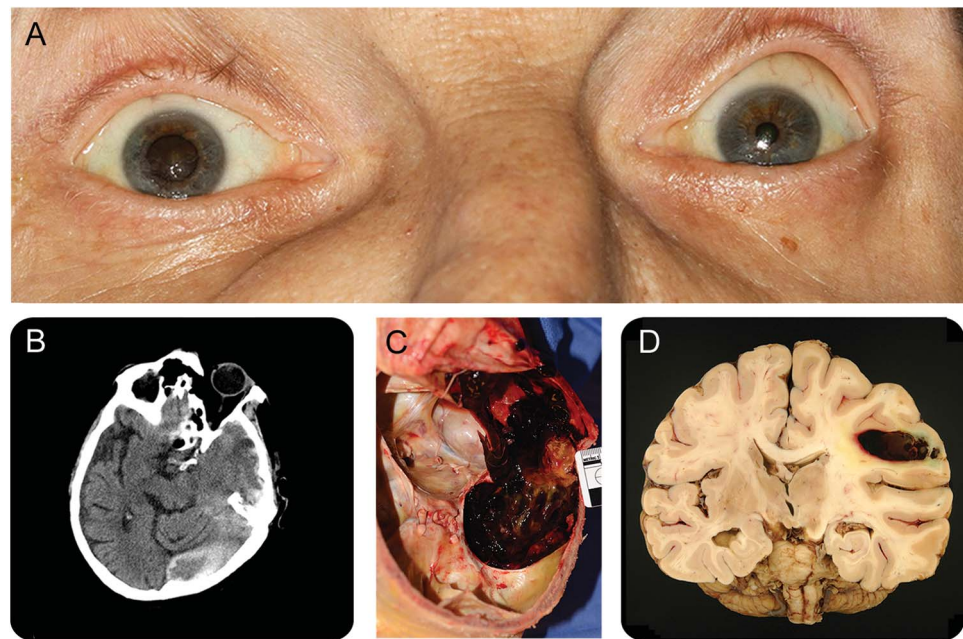


# Wrong side dilated pupil

**Figure** Clinical, CT scan, and neuropathology correlation



(A) Right pupil is 5.5 mm and left pupil is 2.0 mm in diameter. (B, C) Left parieto-occipital subdural hematoma. (D) Diagonal brainstem shift from both subdural hematoma and contusion but no uncal herniation on either side.

A 59-year-old man with alcoholic liver disease became comatose from a left acute subdural hematoma. He developed a fixed dilated right pupil but the left pupil was responsive to light. Oculovestibular responses were normal. He had right extensor posturing. At autopsy uncal herniation was not found, but there was a diagonally shifted and rotated brainstem likely tethering or compressing the contralateral third nerve against the tentorium ridge or clivus (figure). In the pre-CT era, a false localizing fixed pupil led to negative exploratory burr holes. Presently, this phenomenon is still a confusing, inadequately understood curiosity.<sup>1,2</sup>

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1. Chen R, Sahjpal R, Del Maestro RF, Assis L, Young GB. Initial enlargement of the opposite pupil as a false localising sign in intraparenchymal frontal haemorrhage. *J Neurol Neurosurg Psychiatry* 1994;57:1126–1128.
2. Marshman LA, Polkey CE, Penney CC. Unilateral fixed dilation of the pupil as a false-localizing sign with intracranial hemorrhage: case report and literature review. *Neurosurgery* 2001;49:1251–1255; discussion 1255–1256.

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