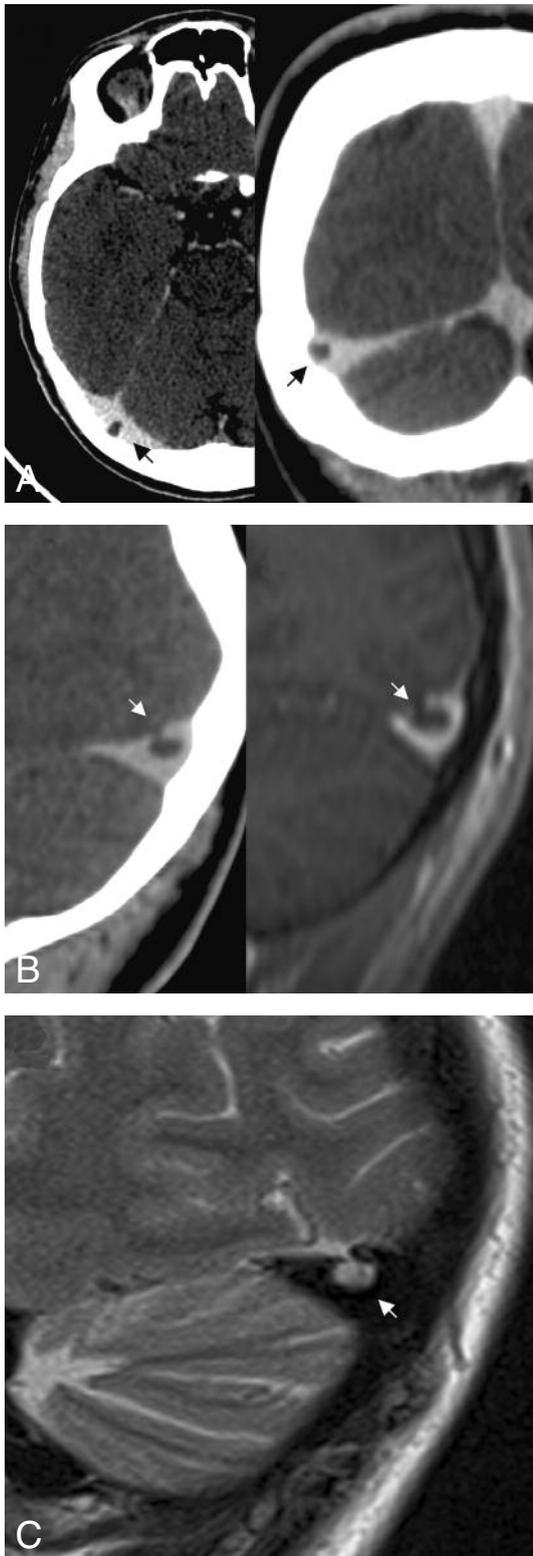


## IMAGES IN CLINICAL RADIOLOGY



### *Arachnoid Pacchioni's granulation bulging in a transverse sinus of the brain*

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A 32-year-old woman was admitted with acute bi-occipital headaches at our emergency room. A head CT study without contrast agent injection was performed to exclude acute cerebral hemorrhage. It revealed a focal well delimited round lacuna in the left transverse sinus, which was confirmed after contrast material injection (Fig. A, transverse and frontal views, black arrow). This anomaly measured 4 mm in diameter, presenting a low mean density of 40 HU (lesser than normal sinus density) and was linked to the sinus upper wall by a small peduncle only visible on sagittal views (Fig. B1, white arrow). MRI series were realized to confirm the diagnosis of a "giant" arachnoid granulation bulging in the left transverse sinus and to exclude a focal thrombosis. The granulation presented a typical low T1-weighted signal with no contrast enhancement (Fig. B2, sagittal view, white arrow), high T2-weighted signal similar to CSF (Fig. C, sagittal view, white arrow), and the peduncle in connection with the subarachnoid space was clearly visible.

No pejorative anomaly was found on the MRI study. Symptomatic headache treatment was therefore proposed to the patient.

#### *Comment*

Arachnoid granulations (AGs), also known as Pacchioni's granulations, are small protrusions of the arachnoid into the spinal and cerebral venous sinuses, through dura defects. AGs have a role of passive filtration allowing CSF drainage from the subarachnoid space to the venous system. AGs normally measure a few millimeters but become enlarge with age and can expand into the inner table of the skull or bulge in venous sinuses, most often in the transverse or superior sagittal sinuses and rarely in the straight sinus. AGs are usually fortuitous asymptomatic discoveries but are rarely reported to cause symptoms from venous hypertension secondary to partial sinus occlusion, as proven by dural sinus pressure measurements on both side of the lesion.

AGs are commonly encountered on imaging, especially on contrast enhanced CT or MR studies, and must be differentiated from dural sinus thrombosis. Thrombosis is most often most extensive than AGs, involving an entire segment of a sinus or even several sinuses and sometimes extending into cortical veins. Acute thrombosis presents a high density CT signal and usually high T1-weighted and low T2-weighted signal on MRI. AGs imaging features are described upper. Differential diagnosis with other intrasinus tumors such as meningioma, cavernous haemangioma or meningocele can also be performed by their characteristic imaging features.

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