

Anterior interhemispheric transsplenial approach

Pineal region tumors are challenging to access because they are centrally located within the calvaria and surrounded by critical neurovascular structures. The goal of this work is to describe a new surgical trajectory, the anterior interhemispheric transsplenial approach, to the pineal region and falcotentorial junction area. To demonstrate this approach, the authors examined 7 adult formalin-fixed silicone-injected cadaveric heads and 2 fresh human brain specimens. One representative case of falcotentorial meningioma treated through an anterior interhemispheric transsplenial approach is also described. Among the interhemispheric approaches to the pineal region, the anterior interhemispheric transsplenial approach has several advantages. 1) There are few or no bridging veins at the level of the pericoronal suture. 2) The parietal and occipital lobes are not retracted, which reduces the chances of approach-related morbidity, especially in the dominant hemisphere. 3) The risk of damage to the deep venous structures is low because the tumor surface reached first is relatively vein free. 4) The internal cerebral veins can be manipulated and dissected away laterally through the anterior interhemispheric route but not via the posterior interhemispheric route. 5) Early control of medial posterior choroidal arteries is obtained. The anterior interhemispheric transsplenial approach provides a safe and effective surgical corridor for patients with supratentorial pineal region tumors that 1) extend superiorly, involve the splenium of the corpus callosum, and push the deep venous system in a posterosuperior or an anteroinferior direction; 2) are tentorial and displace the deep venous system inferiorly; or 3) originate from the splenium of the corpus callosum ¹⁾.

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Yağmurlu K, Zaidi HA, Kalani MY, Rhoton AL Jr, Preul MC, Spetzler RF. Anterior interhemispheric transsplenial approach to pineal region tumors: anatomical study and illustrative case. J Neurosurg. 2017 Jan 13:1-11. doi: 10.3171/2016.9.JNS16279. [Epub ahead of print] PubMed PMID: 28084911.

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