Microsurgical dissection

Microsurgical dissection of arachnoid cisterns requires a combination of anatomic knowledge and microsurgical skill. The latter relies on experience and microsurgical dexterity, which depend on visual identification of cisternalmicrovasculature. Benet et al. describe a novel standardized operative sequence to allow for bloodless arachnoid dissection when cisternal anatomy is challenging.

They used the reported technique in 1928 cases over the past 5 years (2018-2022). The outer arachnoid was incised to enter the cisternal space. A cotton pledget was placed in contact with an inner membrane and gently pushed laterally and superficially with the suction cannula at medium suction power. When the arachnoid membranes dried, arachnoid trabeculae were cut and microvasculature were released at the convexity of their loops and gently transposed off the dissection trajectory. The same principle was used to release parent and perforating arteries from the aneurysm dome.

The microcisternal drainage technique enabled safe and efficient access through adhered arachnoid in all cases. A complex anterior communicating artery aneurysm in a 52-year-old lady demonstrated the use of the microcisternal drainage technique during access through the pericallosal cistern. This technique was used in all cases where cisternal dissection was needed.

The microcisternal drainage technique uses deliberate and strategic suction, dynamic retraction, and nuanced scissor cuts to enable precise and bloodless microdissection of adherent arachnoid cisterns. This technique combines common neurosurgical maneuvers in a novel standardized sequence to improve efficiency and safety during arachnoid dissection [1)]

1)
Benet A, Noda K, Lawton MT, Tanikawa R. The Microcisternal Drainage Technique. World Neurosurg. 2023 Apr 25;176:60-65. doi: 10.1016/j.wneu.2023.04.087. Epub ahead of print. PMID: 37105274.