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Strategies for Embolization of Brain Arteriovenous Malformations' Direct Arteriovenous Shunts

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Abstract

Intranidal direct arteriovenous (AV) shunts are non-rarely observed in brain arteriovenous malformations (bAVMs).¹ The endovascular treatment of such direct AV shunts may be challenging. Indeed, there is a significant risk of venous migration of the embolic agent used to occlude the AV shunt, leading to a subsequent risk of nidus bleeding due to impairment (slowdown or even occlusion) of the bAVM's venous drainage.²

Various endovascular techniques have been developed to avoid the risk of such inopportune impairment of the venous drainage during attempts to occlude a direct intranidal AV shunt.³⁻⁵

We present in this Technical video ([Video 1](#)) different endovascular strategies to occlude such direct AV shunts using dual lumen balloons with various liquid embolic agents, or using occlusion plugs.

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Contributorship statement:

Frédéric Clarençon: Manuscript redaction, video preparation

Eimad Shotar: Manuscript preparation, critical review of the manuscript

Stéphanie Lenck: Critical review of the manuscript

Mathilde Aubertin: Data collection, critical review of the manuscript

Kevin Premat: Critical review of the manuscript

Anne-Laure Boch: Critical review of the manuscript

Nader-Antoine Sourour: Data collection, Critical review of the manuscript