

## Accuracy And Validity Of Intravascular Ultrasound As A Clinical Adjunct For Cerebral Venous Sinus Stenosis

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### Purpose

Intravascular ultrasound (IVUS) could generate high-resolution cross-sectional images and reconstruct 3D sagittal images of the vessel wall and lumen. For this character, we used IVUS as an adjunct to venoplasty for cerebral venous sinus stenosis (CVSS).

### Materials and Methods

IVUS was performed during stenting in 12 CVSS patients. The IVUS catheter was used in bilateral side and from distal to proximal part of stenosis segment for comparison. The most narrow cross-sectional area and length of the lesion lumen can be clearly defined. Information obtained on the patients included at admission, during operation, and at 3 and 6 months follow-up after treatment.

### Results

Different stenosis types clearly visualized with IVUS such as: intraluminal thrombus (3 of 12, 25%), arachnoidal granulations (1 of 12, 8.3%), intravenous compartments (2 of 12, 16.7%) and vessel wall thickening (6 of 12, 50%). Intraluminal thrombus was more frequently observed in symptomatic stenosis than in asymptomatic cases ( $P < 0.001$ ). Moreover, by the guidance of IVUS, the stent implantation can be avoided to cover the opening of drainage vein or stray in the compartments of cerebral venous sinus in case of severe syndrome (Fig1). No technical or neurologic complications were encountered during research.

### Conclusion

The IVUS' imaging modality can accurately measure the degree of vessel stenosis, confirm the ostium of the drainage venous branches, identify the cause of stenosis, analyze the etiologic mechanism, thrombus complication and guide the intravascular therapy. IVUS is a promising tool to improve diagnostic and treatment accuracy.