

# A Device and Method for Vascular or Nerve Separation and Bridging

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## Technology description

### Summary

Vanderbilt researchers have designed a device and method for separating an arteriole that passes over a vein and restricts the passage of blood flow in the eye, which if uncorrected can lead to hemorrhage and vision loss. The device surgically separates the two vessels and then places a stent or bridge between them to alleviate compression. Visualization during the procedure is provided with optical coherence tomography (OCT), and the surgical tool can be either hand-held or robotic.

### Addressed Need

Branch retinal vein occlusion (BRVO), wherein an arteriole passes over and constricts the flow of blood in a vein, affects approximately 13.9 million people worldwide, with an increase in occurrence due to age. Although intraocular medical therapy may improve the central vision loss complication occurring with a BRVO, the therapy is costly and may require repeated applications in order to retain patient gains. Furthermore, not all patients respond to therapy and the treatment does not address the underlying cause of the occlusion. While surgical decompression has been shown to be an effective alternative to medical therapy, the available tools are not adequate for the procedure. This technology addresses that concern.

## Advantages

Surgical stents and bridges can be custom shaped to match the size and shape of the vessel

Deployment device enables pressure-sensitive vessel separation and placement of the stent or bridge

Pre-shaped deployment device allows for varying the approach angle of the device to match the anatomy

Controlled deployment of the stent or bridge using a tapered design for increased precision

## Institution

[Vanderbilt University](#)

## 联系我们



叶先生

电话 : 021-65679356

手机 : 13414935137

邮箱 : yeyingsheng@zf-ym.com