

A Review of the Current Status of Percutaneous Endovascular Arteriovenous Fistula Creation for HemoDialysis Access

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Abstract

Surgical fistulas were first described over 50 years ago and have revolutionized the outlook for millions of dialysis-dependent patients. Despite many developments, results remain sub-optimal with high rates of primary failure and re-intervention to maintain patency. Surgical fistulas are known to fail in part due to intimal hyperplasia leading to stenosis, and vessel manipulation during anastomosis creation can be contributory. New technology is emerging that allows the endovascular creation of fistulas with minimal vessel trauma, and the initial results demonstrate encouraging outcomes with high technical success rates, low re-intervention, failure rates and good usability for hemodialysis. Two such device systems are currently available, and here, we provide an overview of the current global status of EndoAVF, patient selection criteria, trial results, technical aspects, re-interventions, and outlook for the future.

Keywords: AVF creation; Dialysis fistulas; Endovascular; Interventional radiology; Renal failure.

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