

Chapter 2

ENDOVASCULAR TREATMENT INTERVENTIONS FOR THE STENOSIS IN ARTERIOVENOUS ACCESS; AN INSIGHT FROM A VASCULAR SURGEON'S VIEW

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Introduction

Patients on hemodialysis treatment are increasing in the world and specialists are working hard to overcome the challenging chronic arteriovenous (AV) access problems. Vascular surgeons in the world and cardiovascular surgeons in Turkey take care of creating a long life AV access and also deal with salvage and maintenance of a functional AV access that should sometimes require endovascular treatments.

There are three types of permanent vascular access are available for hemodialysis; the AV fistula, AV graft and permanent catheter for some obligatory patients. A well functioning AV access is essential for the hemodialysis patients and the AV fistula is preferred vascular access for long-term usage. AV fistula has the best long-term primary patency rate, requires the fewest interventions and is associated with the lowest rate of morbidity and mortality when compared with AV grafts and catheters. Unfortunately, during follow of AV fistulas and grafts, venous or arterial stenosis often develop that resulting in inadequate dialysis and potential risk for access failure by thrombosis. The problems resulting from stenosis are frequently associated with pain and discomfort. The occurrence of stenosis disturbs hemodialysis treatment schedules and the quality of patient's life. These problems are greater when occurrence of the access thrombosis is seen because this situation requires emergent surgical or endovascular intervention.

The National Kidney Foundation Kidney Disease Outcomes Quality Initiative (NKF-K/DOQI or K/DOQI) Practice Guidelines on Vascular Access recommend that all dialysis facilities have a program in place to provide regular assessment of the AV access and hemodialysis adequacy (1). The main goal of this program is to prospectively detect the presence of AV access dysfunction. The definitions of "monitoring, diagnostic testing and surveillance" are so important during follow up of a VA access. The assessment of hemodialysis AV access for stenosis is performed using clinical monitoring and noninvasive surveillance methods to detect stenotic lesions. For to overcome the limitations of clinical monitoring, some noninvasive surveillance methods have been developed. Unlike clinical monitoring, each of these methods requires specialized equipment and trained staff. Intra-access blood flow

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2-Intragraft stenosis

The incidence of intragraft stenosis varies widely as from 2 to almost 40 percent (26,50). The reasons for that variability are not clear but may be considered with the age of the AV grafts. Usually these lesions are not related to neointimal hyperplasia and they may be the result of the deposition of fibrin, lipid, and cellular debris within the graft. In addition, it is likely that defects in the graft from repeated needle puncture allow for some tissue ingrowth (47).

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