# FRESENIUS MEDICAL CARE

# The preventive and proactive nursing role in the prevention of arteriovenous grafts complications

Rui Sousa[1], Pedro Goncalves[1], Jorge Melo[1], Sandra Campos[1], Andreia Silva[1], Ricardo Peralta[2], Joao Fazendeiro Matos[2] , Maria Teresa Parisotto[4]

[1]Fresenius Medical Care, NephroCare Viseu, Viseu, Portugal; [2]Fresenius Medical Care, NephroCare Portugal, Porto, Portugal; [4]Fresenius Medical Care, Care Value Management, Bad Homburg, Germany

## Introduction

Nurses play a vital role in vascular access care: They see the patient at every dialysis session, perform cannulation and monitor the proper function of the vascular access. Careful inspection and monitoring of the vascular access is of paramount importance in the early detection of vascular site related infection and patency issues. Thrombosis accounts for approximately 80% of all graft (AVG) failures.

## Objectives

❑ To demonstrate the importance of nurses' vigilance in the detection of AVG complications:
  o Promote and facilitate the survival of this type of vascular access;
❑ To analyse whether the cannulation technique is performed properly.

## Methods

We developed an alternative AVG monitoring programme and conducted a longitudinal quantitative, retrospective, descriptive study analysing all AVG between 2011 and 2016 at NephroCare Viseu.

## Results

In the last five years we had 19 patients with AVG with a mean age of 61 years. The majority of the patients were female (58%) and non diabetic (63%). The patients had an average of 3 vascular access.  The patency of our AVG was 50 months. All AVG were cannulated using the rope-ladder technique. We decided to cannulate the AVG with 16G instead of 15G, to reduce the damage to the graft and shear stress flow. We managed to save 3cm per year in each graft and observed pseudo-aneurisms in 4 grafts. We performed more than 150 Qa assessments per year and identified 47 stenosis, 28 of which requiring angioplasty, with a mean of 1.5 angioplasties/patient/year. The most common stenosis affected central veins and in the venous anastomoses. We had 6 thrombosed AVG in the past 6 years.

## Conclusion

Clinical monitoring (e.g. physical observation, Qa assessment, auscultation, palpation, among others) of the vascular access appears to have a relatively high predictive value for AVG, however, we believe that the success of clinical monitoring in detecting stenosis is highly dependent on the proficiency of the dialysis staff and  consistency with which they monitor the graft.

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|---|---|---|
| Patients | 19 | |
| Age (average) | 61 years | |
| Non-diabetics | 12 | 63% |
| Average time on dialysis | 63 months | |
| Angiography | 50 | |
| Angiography (stenosis) | 47 | 94% |
| Brachial Axillary AVG | 17 | 89% |
| Femoral Femoral AVG | 1 | 5.5% |
| Axillary Axillary AVG | 1 | 5.5% |

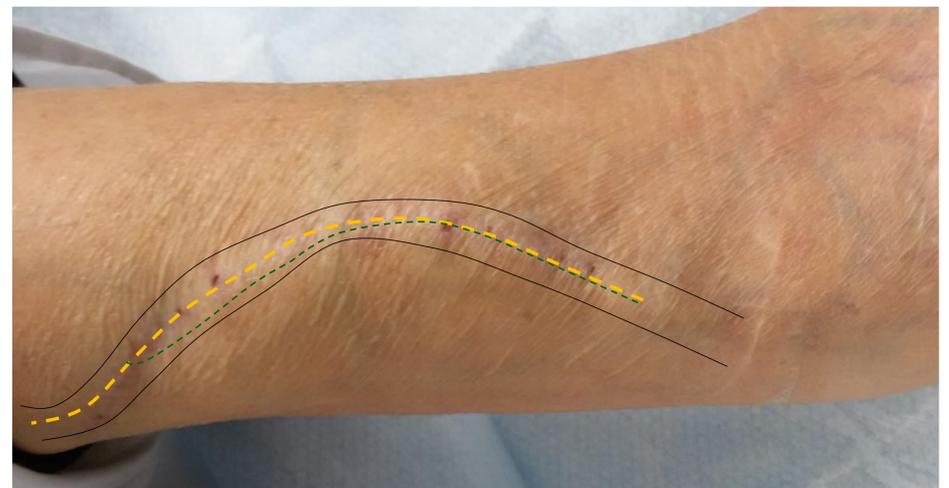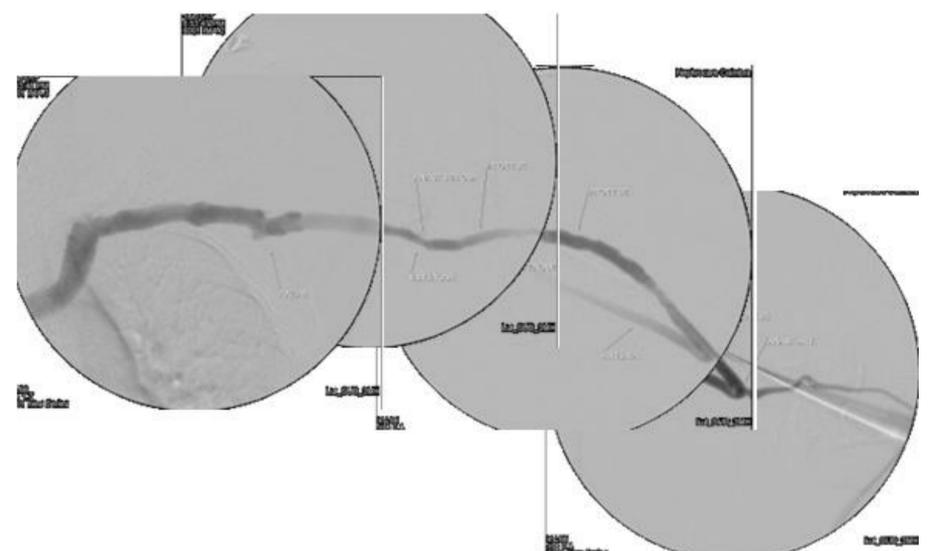**Table 1. Baseline patient characteristics**



**Figure 1: Left brachial-axillary AVG**



**Figure 2: Left brachial-axillary AVG angiography**

**References**
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