



VASC-ALERT ACCESS SURVEILLANCE CASE STUDY

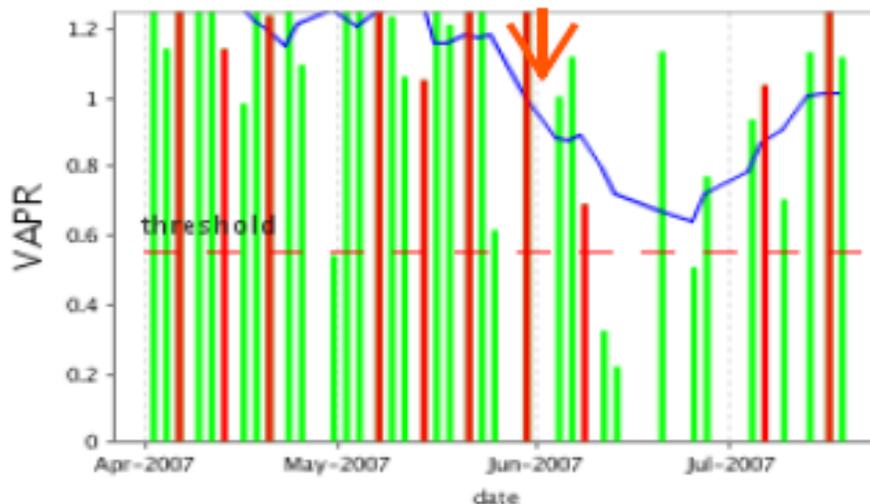
PATIENT PROFILE

66 year old female
Primary cause of ESRD: Type 1 Juvenile Onset Diabetes
Dialysis start date: 3/7/01
Dialysis access: Left upper arm graft
Dialysis access placed: Approximately 3/07
Treatment time: 3.5 hours/210 minutes 3 times per week
Ordered BFR: 400 - 450ml/min
Kt/V result at time of intervention: 1.61

There were no other clinical signs or symptoms that were indicative of access dysfunction or stenosis (e.g. no increase in venous pressure, no excessive bleeding, no decrease in blood flow, no difficulty in cannulation, no decrease in Kt/V), but the patient had consistent alerts.

VASC-ALERT DATA

Venous Access Pressure Ratio



This patient had multiple high readings and alerts issued by Vasc-Alert. In the above VAPR graph the vertical green and red lines indicate the average VAPR for the dialysis session. The vertical red lines occur on dates where an alert was issued. The horizontal red dashed line is a pre-set threshold value. The blue line is a moving average which is used to visualize the trend of the graph more easily. The red arrow indicates when an intervention took place. The dates on the graph are in month/year format. Gaps in data are typically due to a lack of source data (missed treatment or hospitalization) or incomplete source data. For example, calculations may not have been made due to missing access type, needle gauge or blood pressure data.

HISTORY AND EXAM

Left upper arm graft created several months ago. Surgeon unknown. Referred for angiogram. Indication is high venous pressures by Vasc-Alert. The patient had consistent, elevated VAPR results and was sent for an angiogram on 6/1/07. The access was determined to have a significant stenosis. The red arrow on the graph indicates the intervention date, and a drop in VAPR values below the threshold is seen after the procedure.

PROCEDURE

The patient's left arm was prepped and draped in the usual sterile fashion. Lidocaine was used for local infiltration. A 21-gauge micro puncture needle was used to cannulate the graft facing downstream. The 0.018-inch micro guidewire was advanced up the arm, and a 5 French sheath was inserted over the wire. A 5 French straight catheter was placed over the wire with tip at the level of the rib edge. Venogram revealed 90% stenosis of the venous anastomosis. A 7 French sheath was exchanged for the 5 French over a 0.035-inch guidewire.

Medications were given to achieve adequate conscious sedation. An 8X4 workhorse balloon was used to angioplasty the venous anastomosis lesion with marked improvement.

A retrograde axillary arteriogram revealed normal inflow and no stenosis. A large, tender aneurysm is noted just above the apex of the graft, medial to the venous limb.

Hemostasis was obtained with a z-stitch at the cannulation site. The patient tolerated the procedure.

FINDINGS

1. Dysfunctional arteriovenous graft, left upper arm axillary axillary
2. 90% stenosis venous anastomosis
3. Large aneurysm, inner upper arm, medial to the proximal 3rd of the venous limb of the AV graft

SUMMARY

The patient was sent for access angiography and found to have a hemodynamically significant stenosis that was treated by angioplasty. Shortly after intervention the patient's VAPR results returned to normal and fell below the threshold.