Migrated Basilic Vein Stents

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An arteriovenous fistula is the preferred vascular access for hemodialysis. Secondary thrombosis secondary to a venous stenosis is the most common complication seen with AV fistulas, and currently, percutaneous endovascular intervention (balloon angioplasty and stenting) is considered the treatment of choice for venous stenosis. Despite being less invasive than surgery, these interventions present a unique subset of potential complications with limited evidence available on optimal treatment.

We report a case of migrated basilic vein stents in a seventeen-year-old male undergoing hemodialysis through a brachiobasilic AV fistula. The complication was treated by fixing the stents to the venous wall using non-absorbable sutures. The objective was to prevent further stent migration towards the heart and thus, steer away from a probable catastrophic event.


Venous stenosis is the most common complication associated with AV fistulas in adults and children in modern vascular practice; the initial modality of treatment in most cases is percutaneous endovascular intervention1,2.

High-pressure balloons, cutting balloons and stents are used when dealing with venous lesions, and stenting is recommended as it prevents the expected recoil seen with venous lesions3. These interventional procedures have their unique risks and complications, such as stent thrombosis, vessel perforation, misplacement and migration1,2.

The aim of this presentation is to report a safe procedure to prevent further stent migration and cardiac catastrophe.

THE CASE

A seventeen-year-old male with cerebral palsy was undergoing regular hemodialysis in the hospital via right brachiobasilic AV fistula. The end stage renal disease was secondary to severe vesicoureteric reflux.

High dynamic venous pressures were recorded during different dialysis sessions and the patient was complaining of right upper limb swelling and pain. Physical examination revealed right upper limb edema and multiple venous collaterals at the shoulder suggestive of venous hypertension secondary to a venous stenosis.

A fistulogram was performed under sedation. This revealed a flow-limiting stenosis at the distal aspect of the venous limb, see figure 1. The lesion was crossed with a Terumo Guide Wire and catheter. Angioplasty was performed using a 12mm x 4cm balloon; this was followed by the deployment of a self-expandable stent within the stenosis 8mm x 6cm. Stent sizing was based on the operator’s judgment after balloon angioplasty; ultrasonography was not used for sizing the stents.

The stent was clearly undersized and migrated proximally towards the thoracic cavity. Balloon angioplasty of the stent was performed using a 12mm x 4cm balloon; this was followed by the deployment of a self-expandable stent within the stenosis 8mm x 6cm. Stent sizing was based on the operator’s judgment after balloon angioplasty; ultrasonography was not used for sizing the stents.

Figure 1: Stenotic Lesion within Right Basilic Vein

The stent was clearly undersized and migrated proximally towards the thoracic cavity. Balloon angioplasty of the stent was performed using a 12mm x 4cm balloon; this was followed by the deployment of a self-expandable stent within the stenosis 8mm x 6cm. Stent sizing was based on the operator’s judgment after balloon angioplasty; ultrasonography was not used for sizing the stents.

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