

"Navigating Hemodialysis Vascular Access Challenges: Insights into Optimal Management of Arteriovenous Fistula Complications"



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Introduction

Vascular access is essential for renal replacement therapy. The native arteriovenous fistula (AVF) is the preferred access for hemodialysis due to its longevity and low rate of complications. However, complications can occur.

Materials and Methods

The retrospectively collected data in our study include all AVFs performed in the vascular surgery department between January 2020 and September 2021, focusing on those with the occurrence of complications. Our objective is to identify possible risk factors, the incidence and clinical presentation of each complication, and to evaluate the outcomes of their management.



Discussion

Complications of arteriovenous fistulas are much rarer than those of prosthetic grafts. Late juxta-anastomotic stenoses of distal fistulas should be treated by surgical revision of the arteriovenous anastomosis. Early venous anastomotic stenoses of grafts should be detected and treated mostly by percutaneous endoluminal angioplasty.

Thromboses of grafts benefit from percutaneous declotting associated with endoluminal angioplasty of the venous anastomosis. Complications of arteriovenous access for chronic hemodialysis are much more frequent in the case of prosthetic arteriovenous grafts than in the case of direct arteriovenous fistulas. The presence of diabetes, advanced age, and long-term hemodialysis are severity factors that threaten the vital prognosis.

The surgical treatment of many of these complications (stenosis and thrombosis) can currently be replaced by percutaneous treatment under radiological control. Open surgery still plays a predominant role in the treatment of aneurysms, high flows, and ischemic complications. The surgeon is the ultimate coordinator of vascular asset management.

Results

In our series comprising 115 constructed AVFs, including 38 brachiocephalic, 25 brachio basilic, and 52 radiocephalic, we observed complications in 48 patients, representing a frequency of 41.7%. Thromboses (26) and aneurysms (13) were the most common, followed by maturation failure (03) and high-flow states (06). Clinical factors (diabetes, hypertension, heart disease, non-compliance), biological factors (anemia, hematologic disorders), and ultrasound findings (poor venous capital) nevertheless allow identification of situations at high risk of failure or complications. Early recurrence of thrombosis prompts an etiological investigation before considering a new AVF creation. The treatment was surgical.



Conclusions

Complications of AVFs are common. Greater attention should be paid to understanding and preventing these complications.

