BALLON ANGIOPLASTY AS TREATMENT OF CENTRAL VENOUS CATHETER DYSFUNCTION BY FIBRIN SHEATH: SINGLE CENTER EXPERIENCE

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Background

Fibrous connective tissue sheath as well denominated as fibrin sheath, is a cast of cells and detritus (albumin, fibrinogen, lipoproteins and coagulation factors) that forms around the central venous catheters (CVC), causing central stenosis and dysfunction. The current recommendations of the American guidelines (NFK / DOQI) endorse, with a degree of recommendation B, percutaneous transluminal angioplasty with catheter balloon (PTA) after checking the existence of fibrin sheath.

Objectives

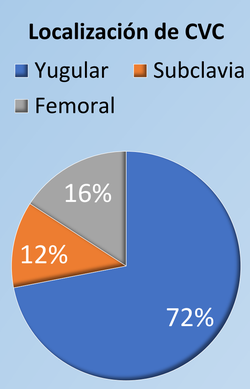
- To establish the incidence of the fibrin sheath in our population as a cause of tunneled central venous hemodialysis catheter dysfunction.
- Determine the primary (PP) and secondary (SP) patency rates, as well as the mean event-free time (catheter-related blood stream infection (CRBSI) or dysfunction).

Methods:

Retrospective observational cohort study, including patients with dysfunctional tunneled central venous hemodialysis catheters inserted during the years 2014 and 2015 in our vascular access unit. For the statistical analysis, descriptive analysis techniques were used and the proportions were compared by Chi-square test and continuous variables using a Student T-test. Kaplan-Meier survival curves were used for the analysis of patency rates. P values under 0.05 were considered as significant.

Results:

During the study period, a total of 82 dysfunctional tunnelled CVCs were placement in 44 patients with CKD 5D out of a total of 304 procedures.



	Frecuencia	Porcentaje
Yugular	59	72,0
Subclavia	10	12,2
Femoral	13	15,9
Total	82	100,0

Variable	N = 44	Valor p
Age (years)	71.45 ± 12.25 (38-88)	NS
Sexo F/M	M=26 F=18	NS
Comorbidity Hypertension	40 (90.9%)	NS
Diabetes Mellitus	16 (36.4%)	NS
Dyslipidemia	22 (505)	NS
Ischemic Heart disease	20 (45.5%)	NS
Peripheral vascular disease	8 (18.2%)	NS
Antiplatelet therapy	18 (40.9%)	NS
Anticoagulant therapy	5 (11.4%)	NS

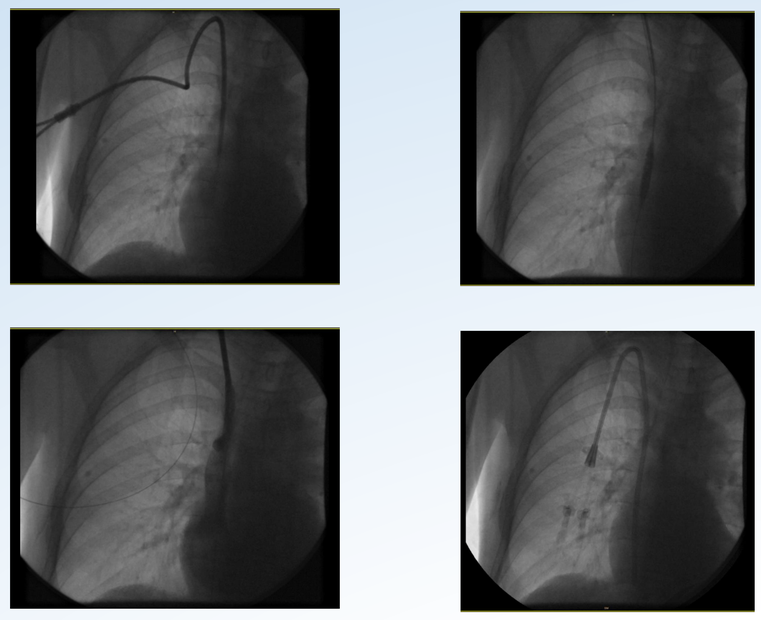
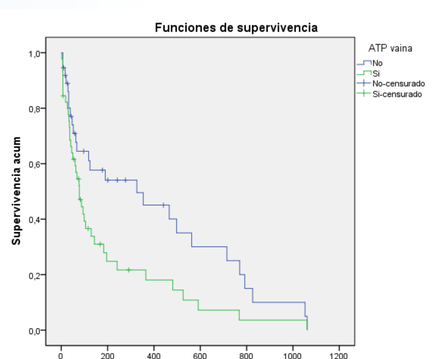


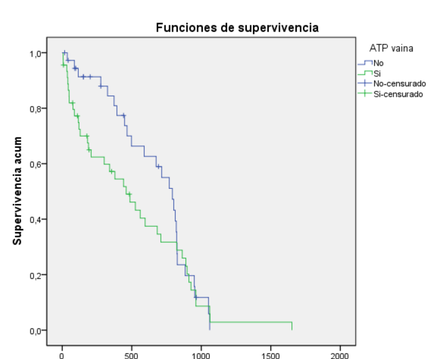
Table 1 summarizes data on the patency obtained in each of the two subgroups (simple replacement(NO PTA) vs replacement and PTA with balloon catheter).

	No PTA	PTA	P value
PP (days)	307.5 ± 59	191.2 ± 41.7	0.148
PS (days)	631.2 ± 54.2	590 ± 63.4	0.552
Catheter dysfunction -free time	312 ± 58.7	191.4 ± 41.7	0.141
CRBSI-free time	246.6 ± 51.1	141.9 ± 29.5	0.098

PP: Primary permeability, SP: Secondary permeability

	PP	PS	P value
1m	78	95.1	NS
3m	45.1	80.5%,	NS
6m	31.7	68.3%	NS
12m	19.5	54.9%,	NS





Conclusions:

1.- In our study group, a high incidence of fibrin sheath was detected as a cause of dysfunction of tunneled hemodialysis catheters (55%).
2.- In the subgroup of patients with PTA we showed a tendency to lower patency rates (PP and SP) and greater number of events (dysfunction and infections).
3.- PTA with balloon catheter on the presence of fibrin sheath results in a useful endovascular treatment in the management of the dysfunction of tunneled CVCs.

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