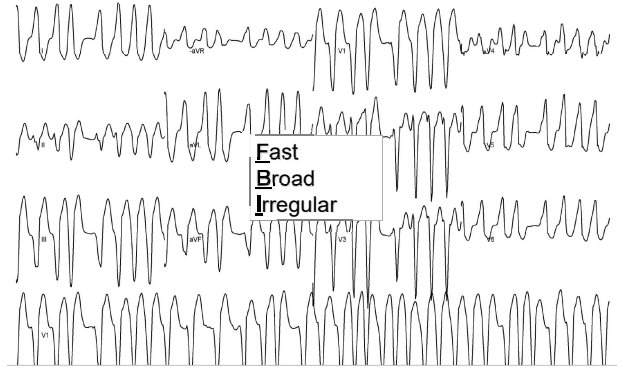


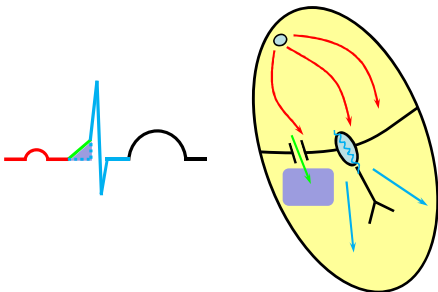
## Moderne Rhythmologie

Jan Steffel

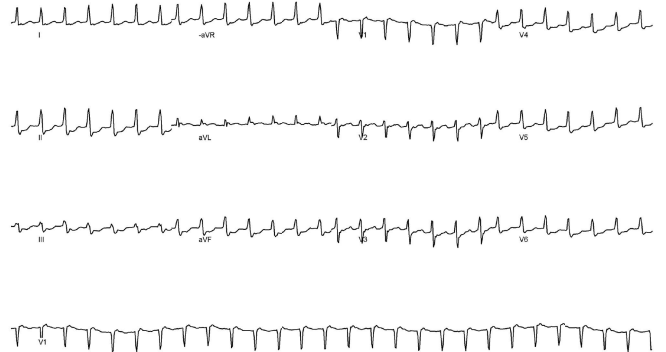
### "Herzgesunde" Patientin kommt auf die Notfallstation...



### WPW

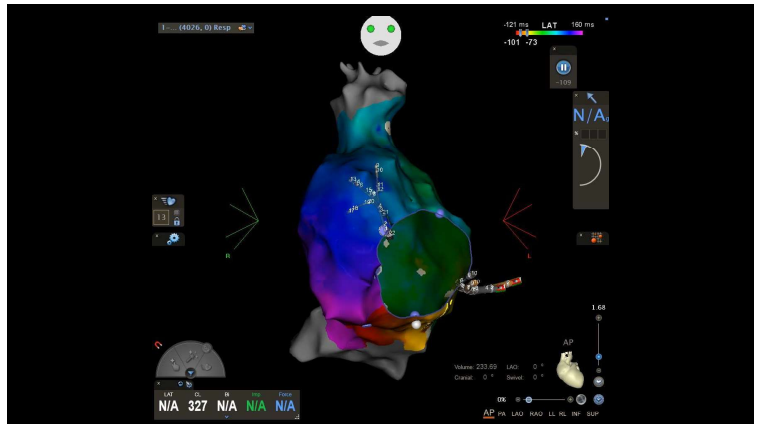
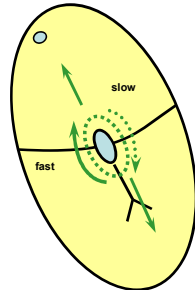
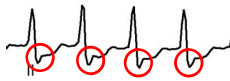


### Rezidivierende Schmalcomplextachykardie



## Typische AVNRT

- Schmal-komplex-tachykardie
- Kurze R-P Dauer (< 90ms)
- Typische Klinik...



## 22-Jähriger Patient, 40% VES Burden



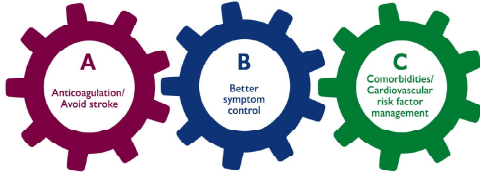
## Rhythmusstörungen mit Potential für "Heilung"

- AVNRT **95-98%**
- WPW **90-95%**
- Typisches Vorhofflattern **>90%**
- Idiopathische VES **80-90%**

- Komplikationsrisiko: 1% Leiste, <1% Tamponade
- Medikamentöse Therapie: Wenig effektiv, NW

"CC to ABC" – 2020 ESC Atrial Fibrillation Guidelines

Treat AF: The ABC pathway



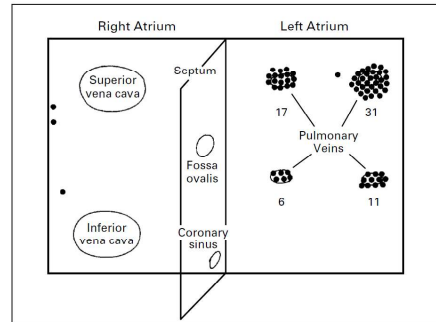
1. Identify low-risk patients  
CHA<sub>2</sub>DS<sub>2</sub>-VASc 0(m), 1(f)
2. Offer stroke prevention if  
CHA<sub>2</sub>DS<sub>2</sub>-VASc ≥ 1(m), ≥ 2(f)  
Assess bleeding risk, address  
modifiable bleeding risk factors
3. Choose OAC (NOAC or VKA  
with well-managed TTR)

- Assess symptoms,  
QoL, and patient's  
preferences
- Optimize rate  
control
- Consider a rhythm  
control strategy  
(CV, AADs, ablation)

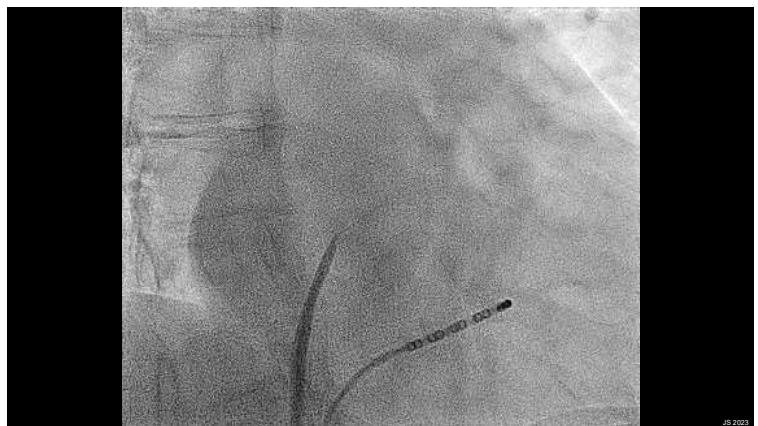
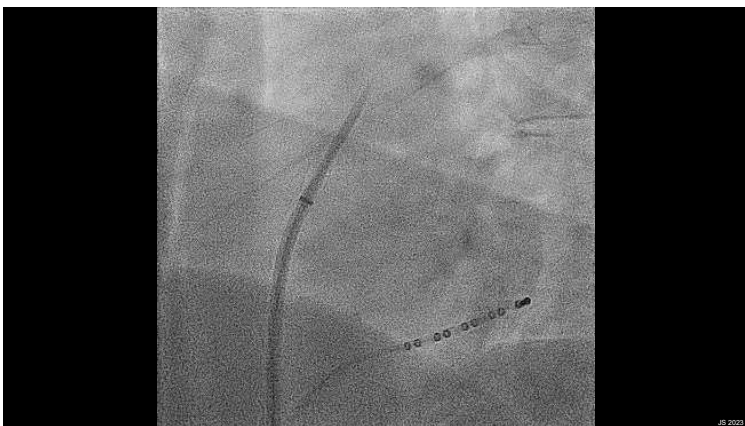
- Comorbidities and  
cardiovascular risk  
factors
- Lifestyle changes  
(obesity reduction,  
regular exercise,  
reduction of alcohol use,  
etc.)

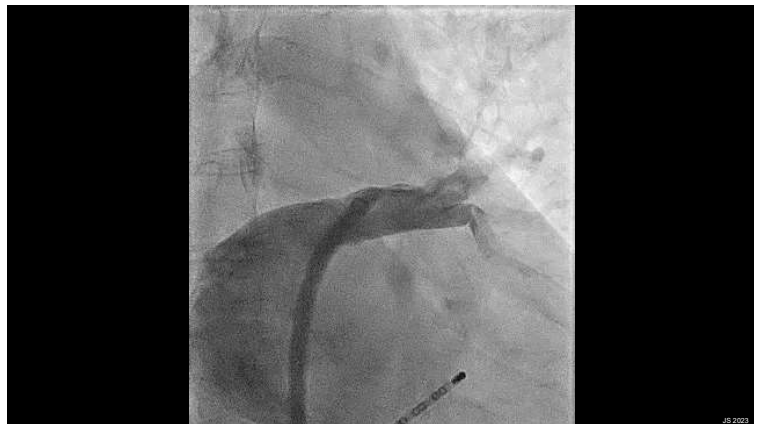
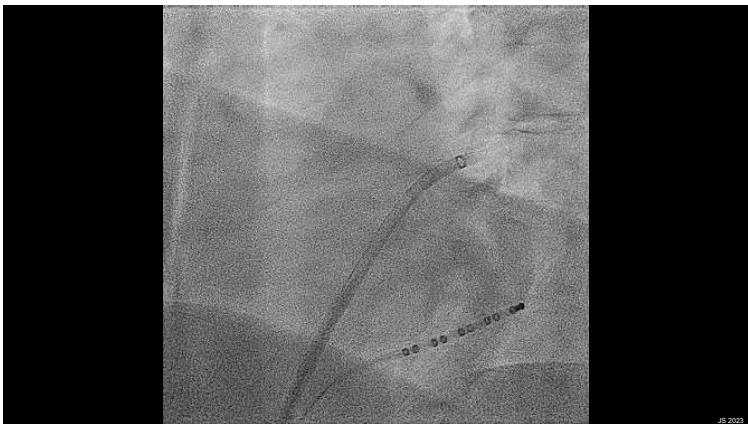
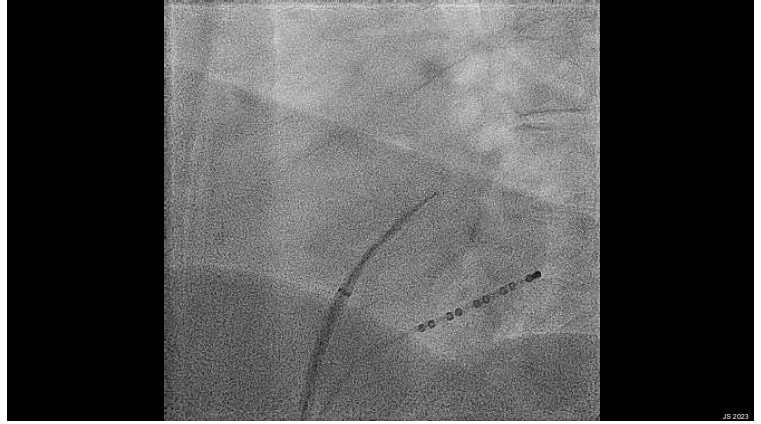
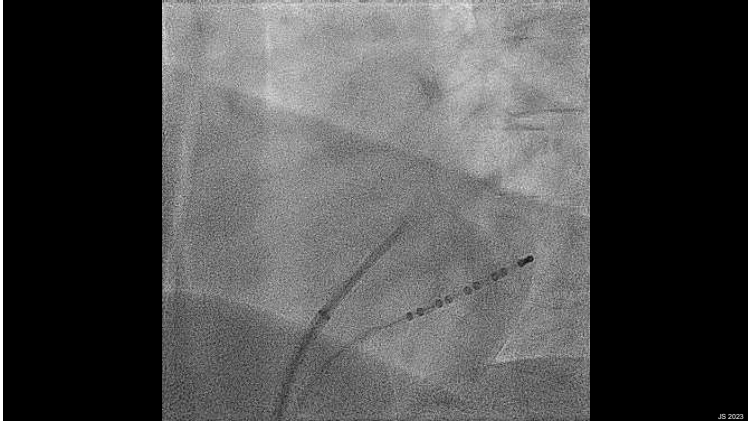
Hindricks et al., European Heart Journal 2020

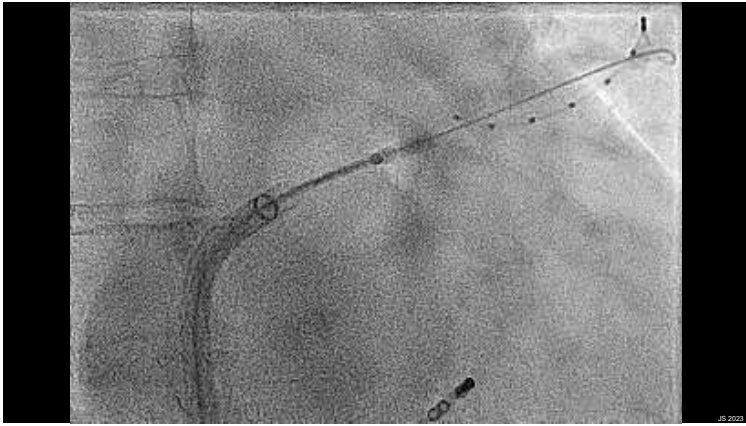
Ursprung des Vorhofflimmerns



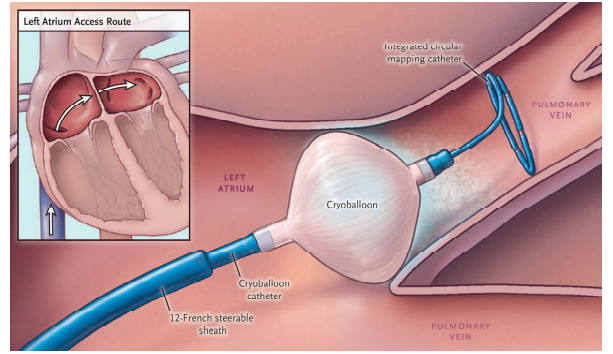
Halaszgure et al., NEJM 1998







### Cryo ablation for AF

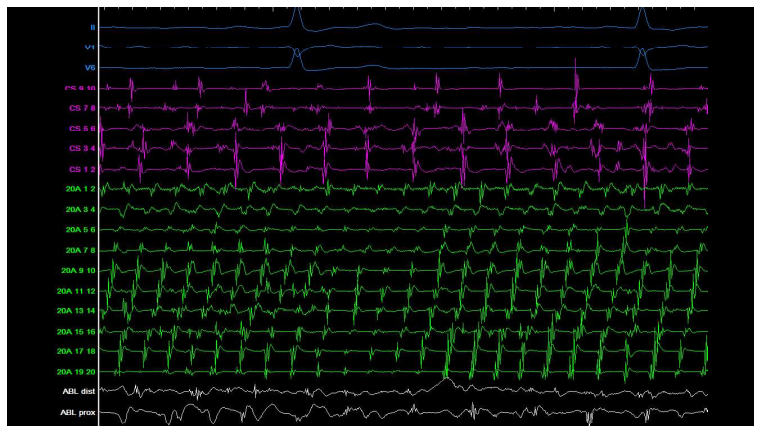


Kuck et al., NEJM 2016

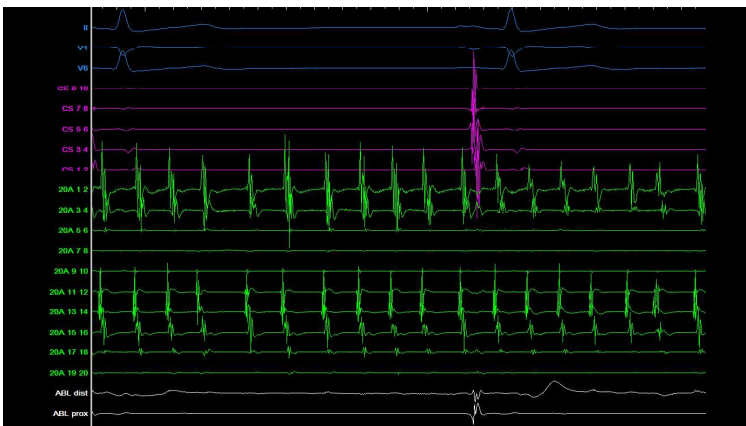
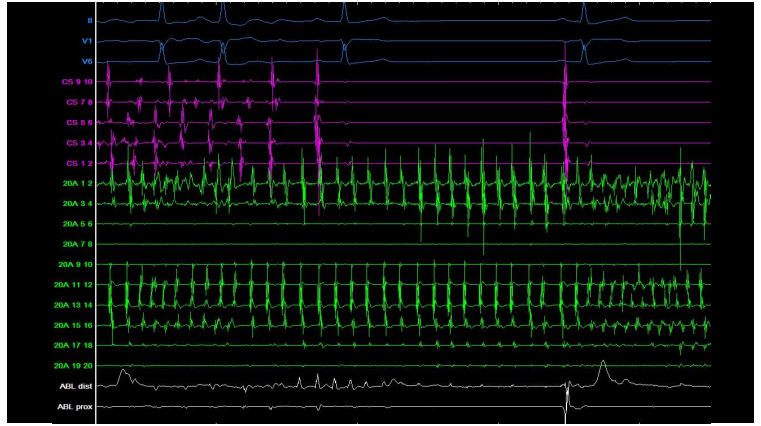
### Radiofrequenzablation für VHF



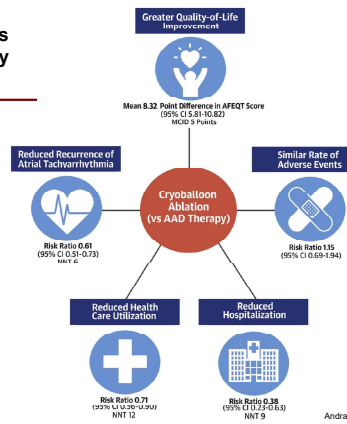
JS 2023







### Cryo ablation as first-line therapy in AF



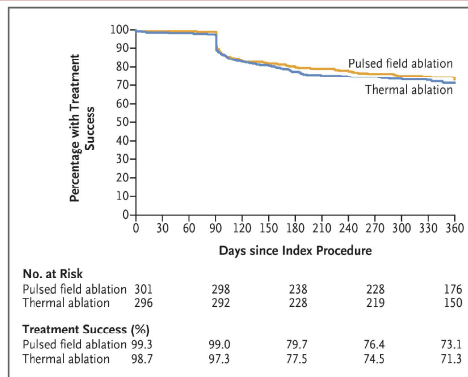
### Vorhofflimmern Ablation – Eigene Erfahrung

#### VHF Ablationen (seit Okt 2021): 530

Perikarderguss	2 (0.4%)
Leistenkomplikation	2 (0.4%)
Dekompensation	1 (0.2%)
Phrenikusparese (transient)	6 (1.1%)

JB 2023

### Pulsed-field ablation of Atrial Fibrillation



Reddy et al., NEJM 2023

### Pulsed-field ablation of Atrial Fibrillation

**Table 3. Serious and Nonserious Adverse Events**

Event	Serious Adverse Events†		Serious or Nonserious Adverse Events‡	
	Pulsed Field Ablation (N=305)	Thermal Ablation (N=302)	Pulsed Field Ablation (N=305)	Thermal Ablation (N=302)
	number of patients (percent)			
Any event	6 (2.0)§	4 (1.3)	7 (2.3)§	6 (2.0)
Death	1 (0.3)	0	1 (0.3)	0
Myocardial infarction	0	0	0	0
Persistent phrenic nerve palsy	0	0	0	2 (0.7)
Stroke	0	1 (0.3)	0	1 (0.3)
TIA	1 (0.3)	0	1 (0.3)	0
Systemic thromboembolism	0	0	0	0
Cardiac tamponade or perforation	2 (0.7)	0	2 (0.7)	0
Bleeding	1 (0.3)	0	2 (0.7)	0
Pulmonary edema	1 (0.3)	1 (0.3)	1 (0.3)	1 (0.3)
Vascular-access complication	1 (0.3)	2 (0.7)	1 (0.3)	2 (0.7)
Heart block	0	0	0	0
Gastric motility or pyloric spasm	0	0	0	0
Pulmonary vein stenosis	0	0	0	0
Atrioesophageal fistula	0	0	0	0

Reddy et al., NEJM 2023

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#### ORIGINAL ARTICLE

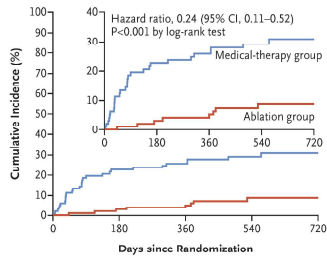
## Catheter Ablation in End-Stage Heart Failure with Atrial Fibrillation

Christian Sohns, M.D., Henrik Fox, M.D., Nassir F. Marrouche, M.D., Harry J.G.M. Crijns, M.D., Ph.D., Angelika Costard-Jaeckle, M.D., Leonard Bergau, M.D., Gerhard Hindricks, M.D., Nikolaos Dages, M.D., Samuel Sossalla, M.D., Rene Schramm, M.D., Ph.D., Thomas Fink, M.D., Mustapha El Hamriti, M.D., Maximilian Moersdorf, M.D., Vanessa Sciacca, M.D., Frank Konietzschke, Ph.D., Volker Rudolph, M.D., Jan Gummert, M.D., Jan G.P. Tijssen, Ph.D., and Philipp Sommerer, M.D., for the CASTLE IITx Investigators

## CASTLE-HTx

### A Primary End Point

- death from any cause
- implantation of a left ventricular assist device
- urgent heart transplantation

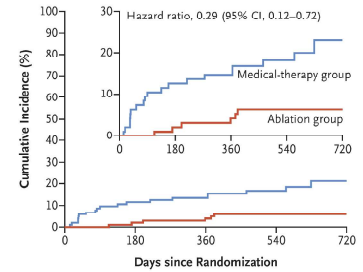


No. at Risk		0	180	360	540	720
Medical-therapy group	97	75	72	41	12	
Ablation group	97	94	88	50	20	

Sobne et al., NEJM 2023

## CASTLE-HTx

### B Death from Any Cause



No. at Risk		0	180	360	540	720
Medical-therapy group	97	85	83	45	13	
Ablation group	97	95	93	51	20	

Sobne et al., NEJM 2023

## Zusammenfassung

- Supraventrikuläre Tachykardien / idiopathische VES: EP + Ablation = Therapie der Wahl
  - AVNRT, WPW, Typisches Vorhofflattern, VES (idiopathisch)
- Vorhofflimmern:
  - Primäre Wahl bei vielen Patienten
  - Hohe Erfolgswahrscheinlichkeit (Rezidiv, "Burden") vs. Medikamente
  - Niedriges Komplikationsrisiko
  - Daten für prognostischen Benefit
- Individuelle Entscheidungsfindung mit Patient, Kardiologe, Hausarzt