

RADIOLOGISCHE BILDGBUNG FÜR DIE SONDENEXTRAKTION STELLENWERT DER PHLEBOGRAPHIE

Priv.-Doz. Dr. A. Keyser

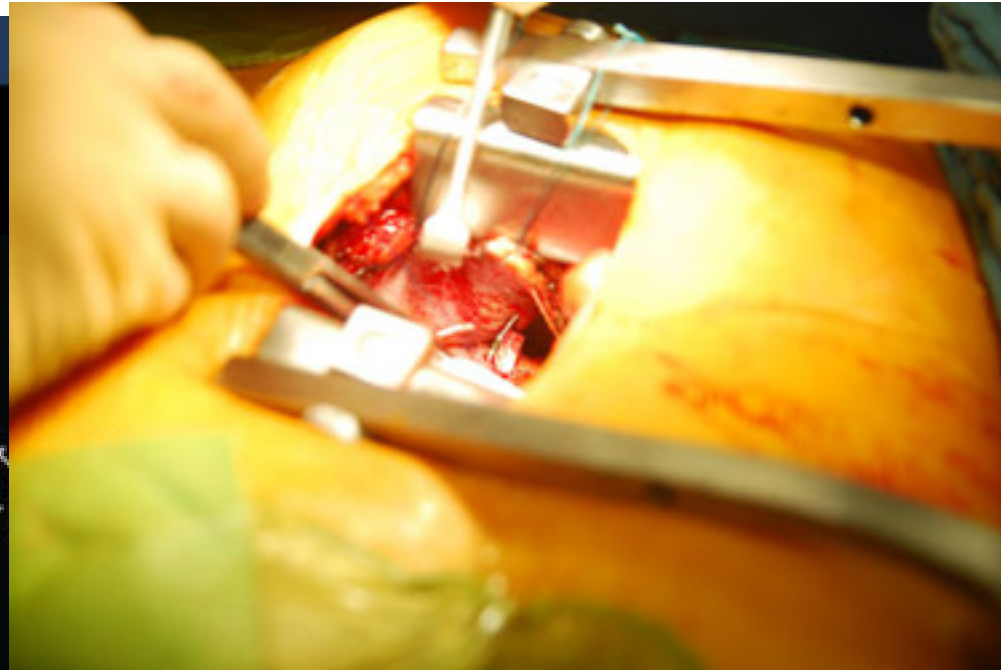
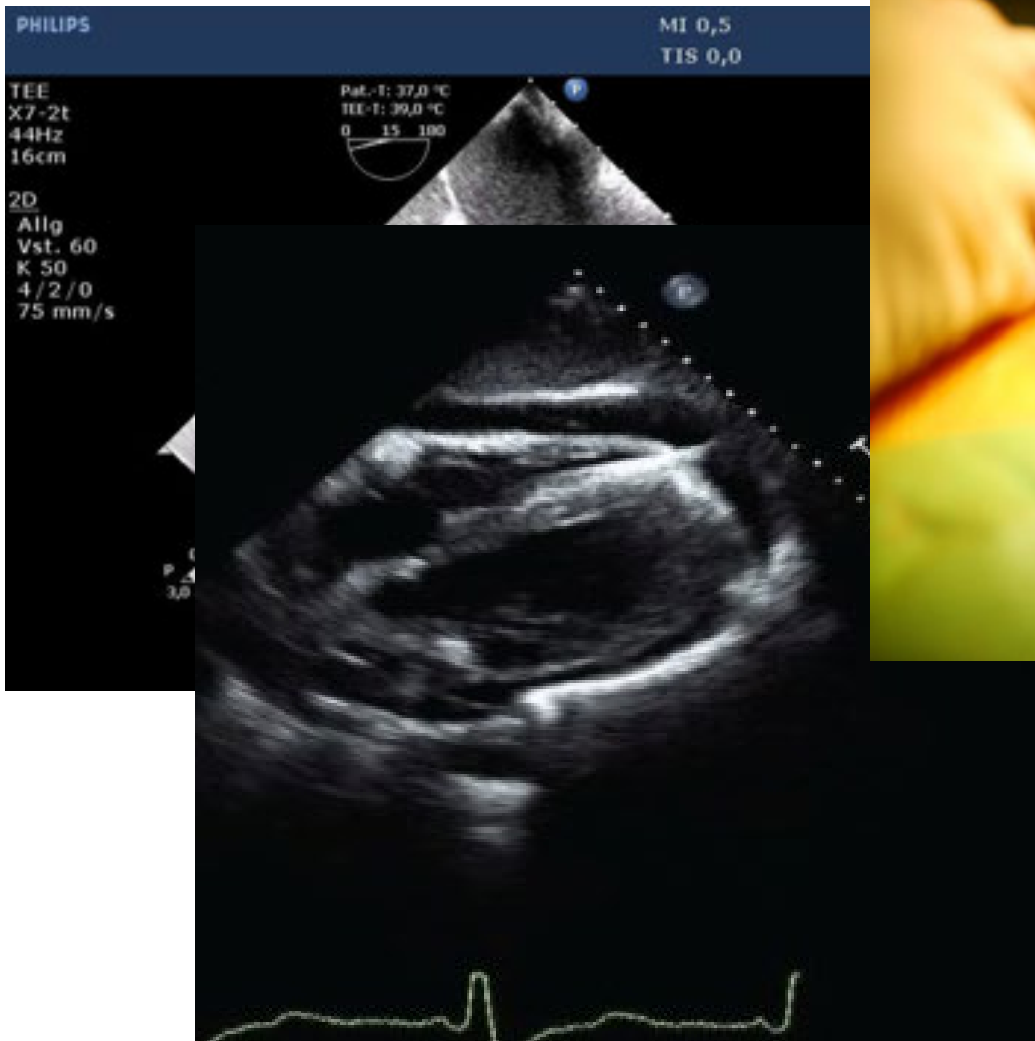
Herz-, Thorax- u. herznahe Gefäßchirurgie
Univ. Klinikum Regensburg
Direktor Prof. Dr. med. C. Schmid

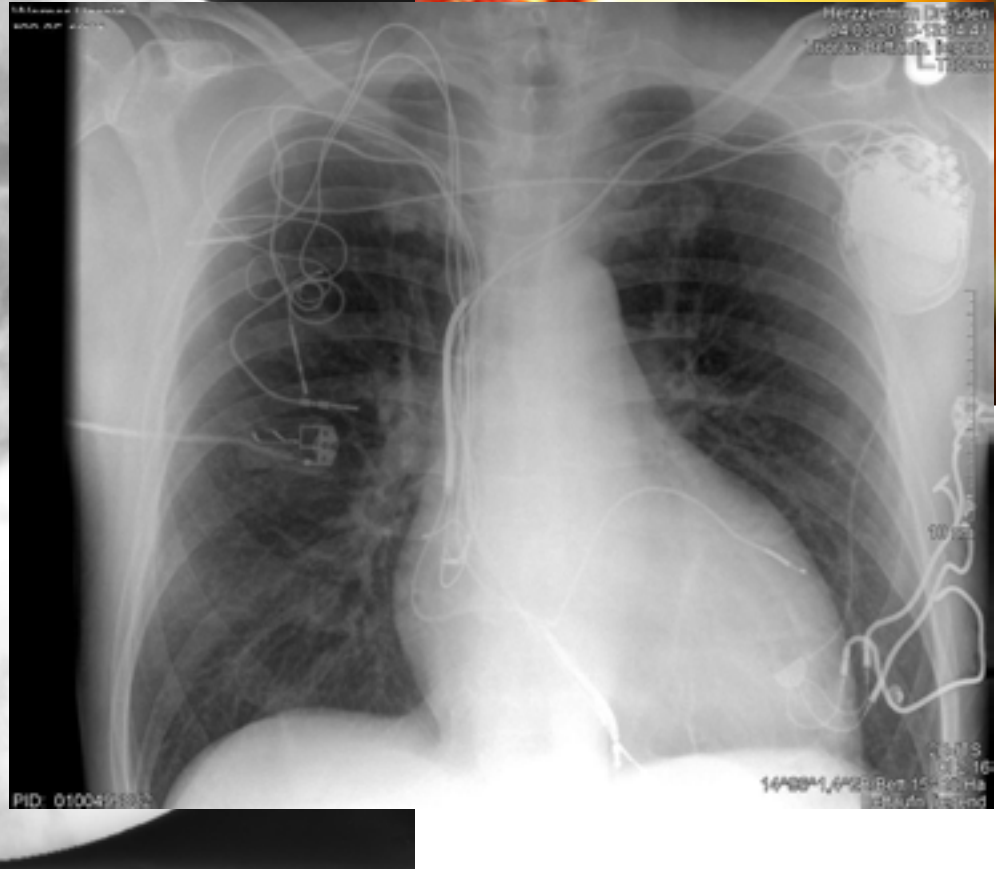
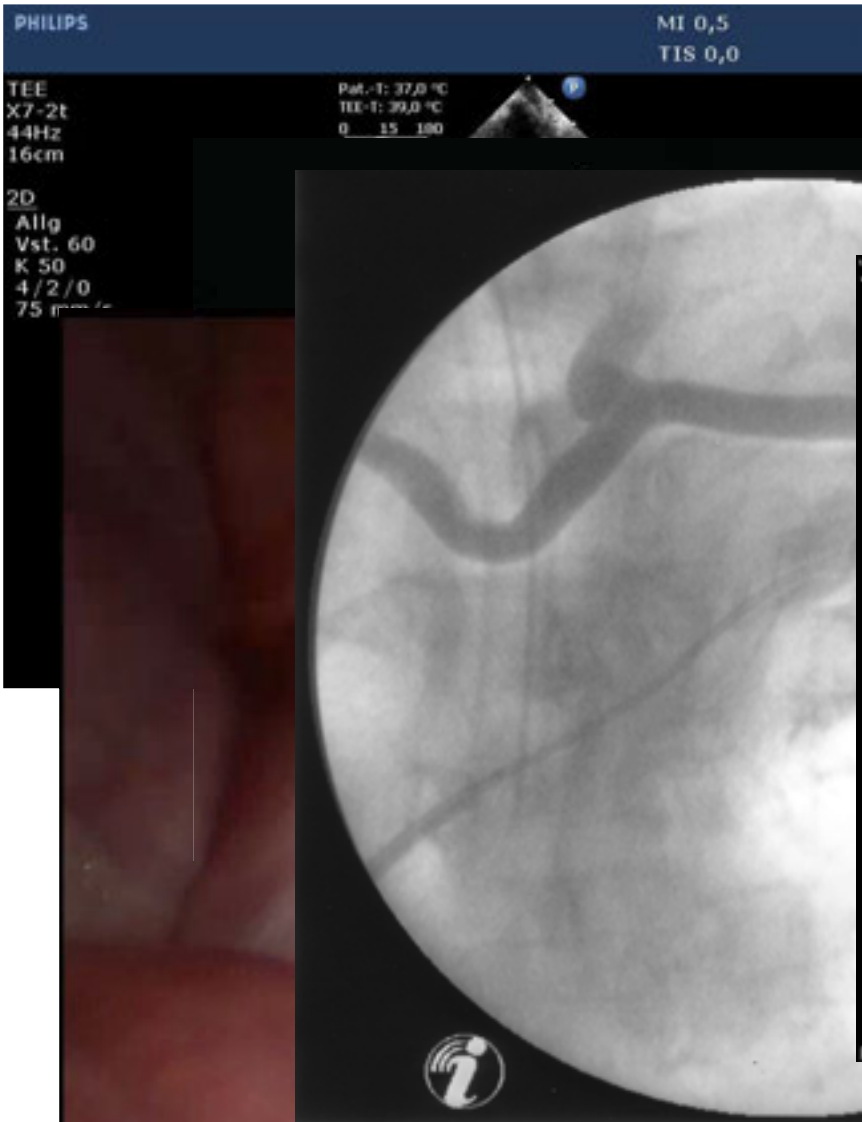
8. Anwendertreffen zur Sondenextraktion, Berlin

16. / 17.09.2022

Disclosure

- Philips
 Invited speaker
- Boston Scientific
 Consultant in education courses
Invited speaker
- St. Jude Medical
 Invited speaker
- Medtronic
 Consultant in education courses
Invited speaker
- DGK
 Consultant in education courses
Invited speaker





Risiko Stratifikation für Sonden-Extraktion

2017 HRS expert consensus statement on cardiovascular implantable electronic device lead management and extraction



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[Heart Rhythm, Vol 14, No 12, December 2017](#)

The GermAn Laser Lead Extraction GallerY: GALLERY

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Risiko Stratifikation für Sonden-Extraktion

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VOL. 5, NO. 2, 2019

Efficacy and Safety of Transvenous Lead Extraction in the Device Laboratory and Operating Room Guided by a Novel Risk Stratification Scheme



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Paul A. Friedman, MD,^a Yong-Mei Cha, MD^a

 **ESC**
European Society
of Cardiology

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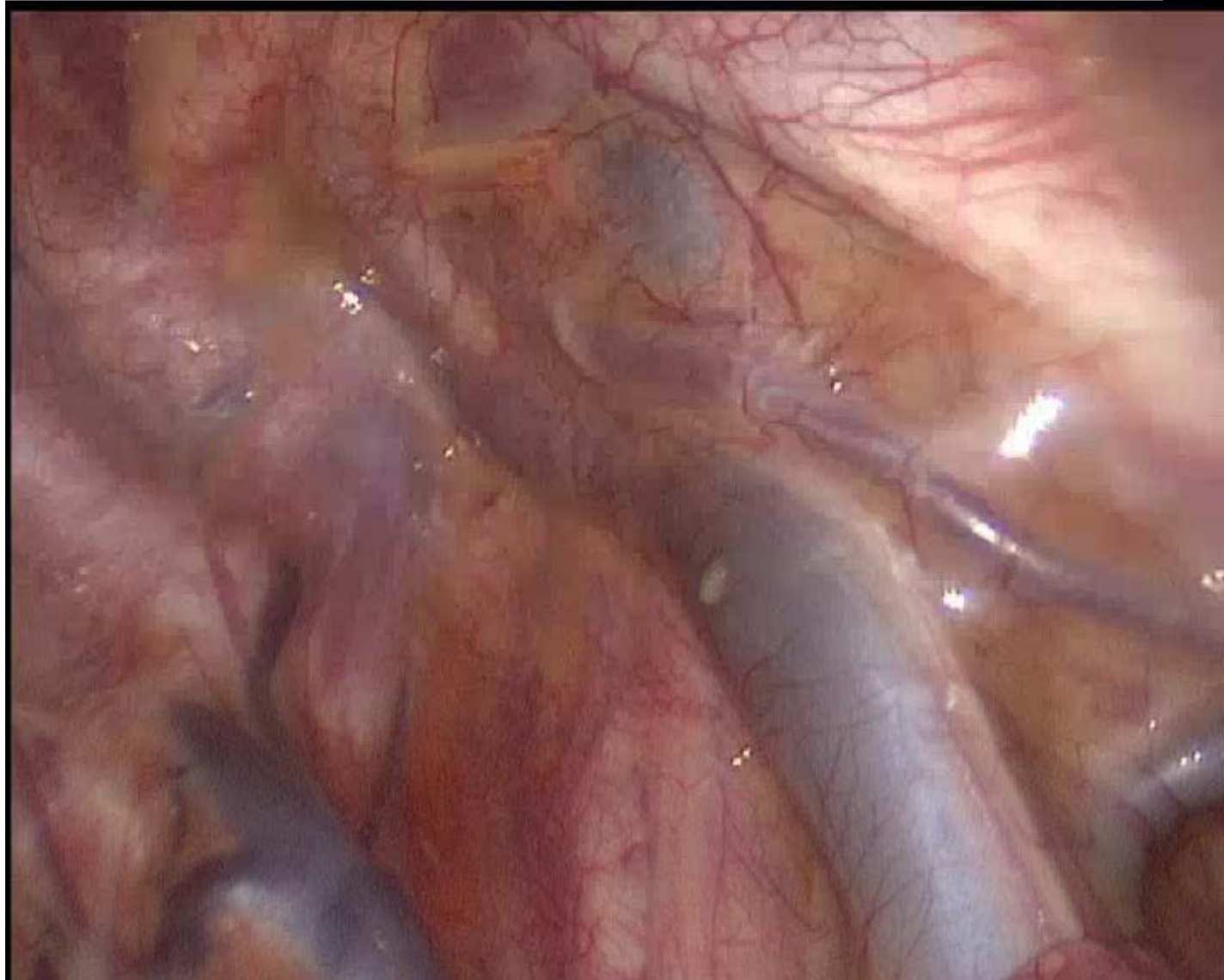
CLINICAL RESEARCH
Leads and lead extraction

Risk stratification of patients undergoing transvenous lead extraction with the ELECTRa Registry Outcome Score (EROS): an ESC EHRA EORP European lead extraction ConTrolled ELECTRa registry analysis

Baldeep S. Sidhu ^{1,2*}, **Salma Ayis**³, **Justin Gould** ^{1,2}, **Mark K. Elliott** ^{1,2},
Vishal Mehta ^{1,2}, **Charles Kennergren**⁴, **Christian Butter**⁵, **Jean-Claude Deharo**⁶,
Andrzej Kutarski ⁷, **Aldo P. Maggioni** ^{8,9}, **Angelo Auricchio** ¹⁰,
Karl-Heinz Kuck¹¹, **Carina Blomström-Lundqvist**¹², **Maria Grazia Bongioni**¹³, and
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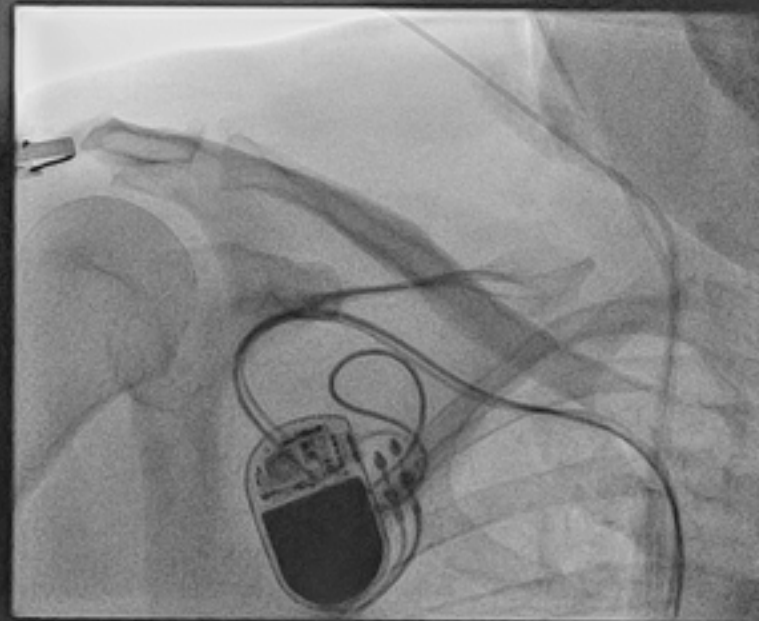
Received 19 November 2020; editorial decision 22 January 2021; accepted after revision 5 February 2021; online publish-ahead-of-print 22 February 2021



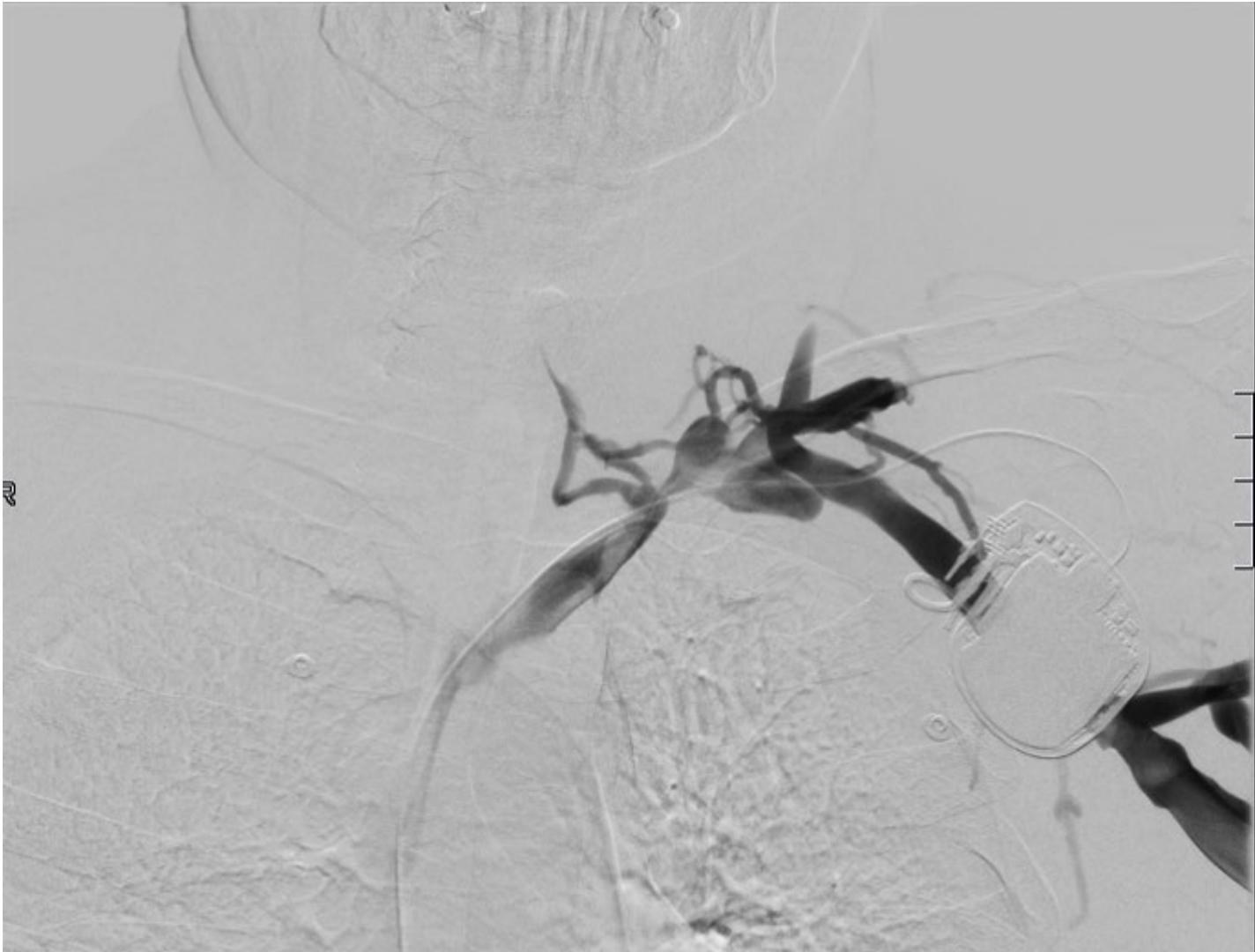
Doppler- / Duplexsonographie?



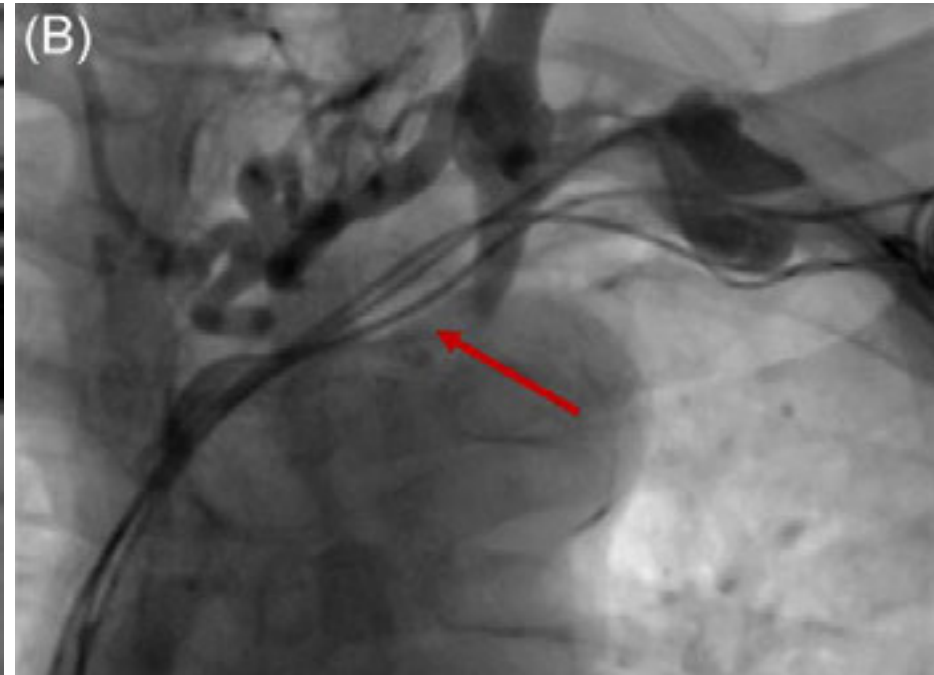
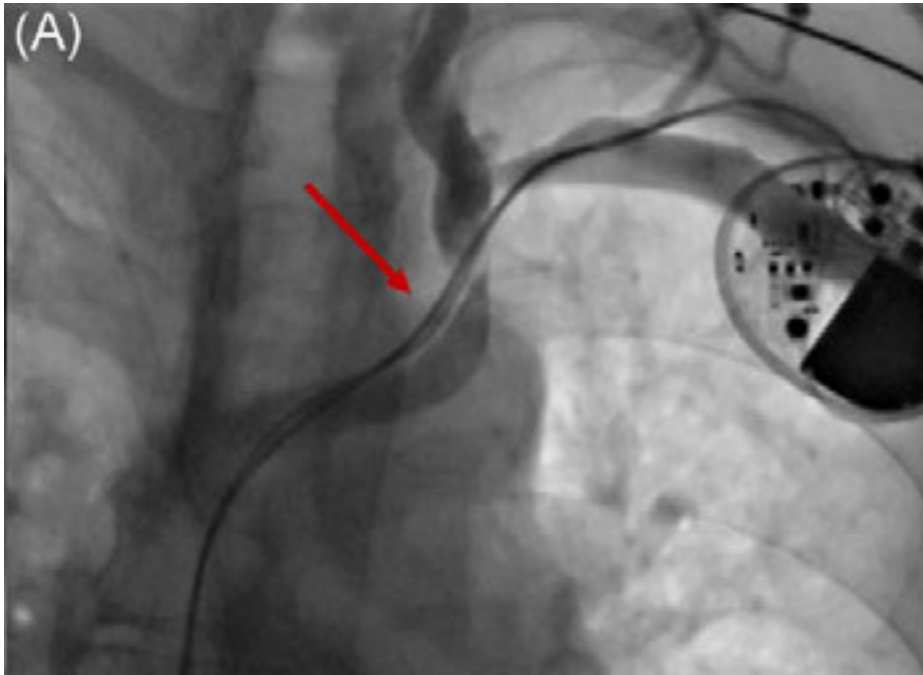
Shear stress at junction -> Stenose



Verwachsungen / Adhärenzen



Verwachsungen / Adhärenzen



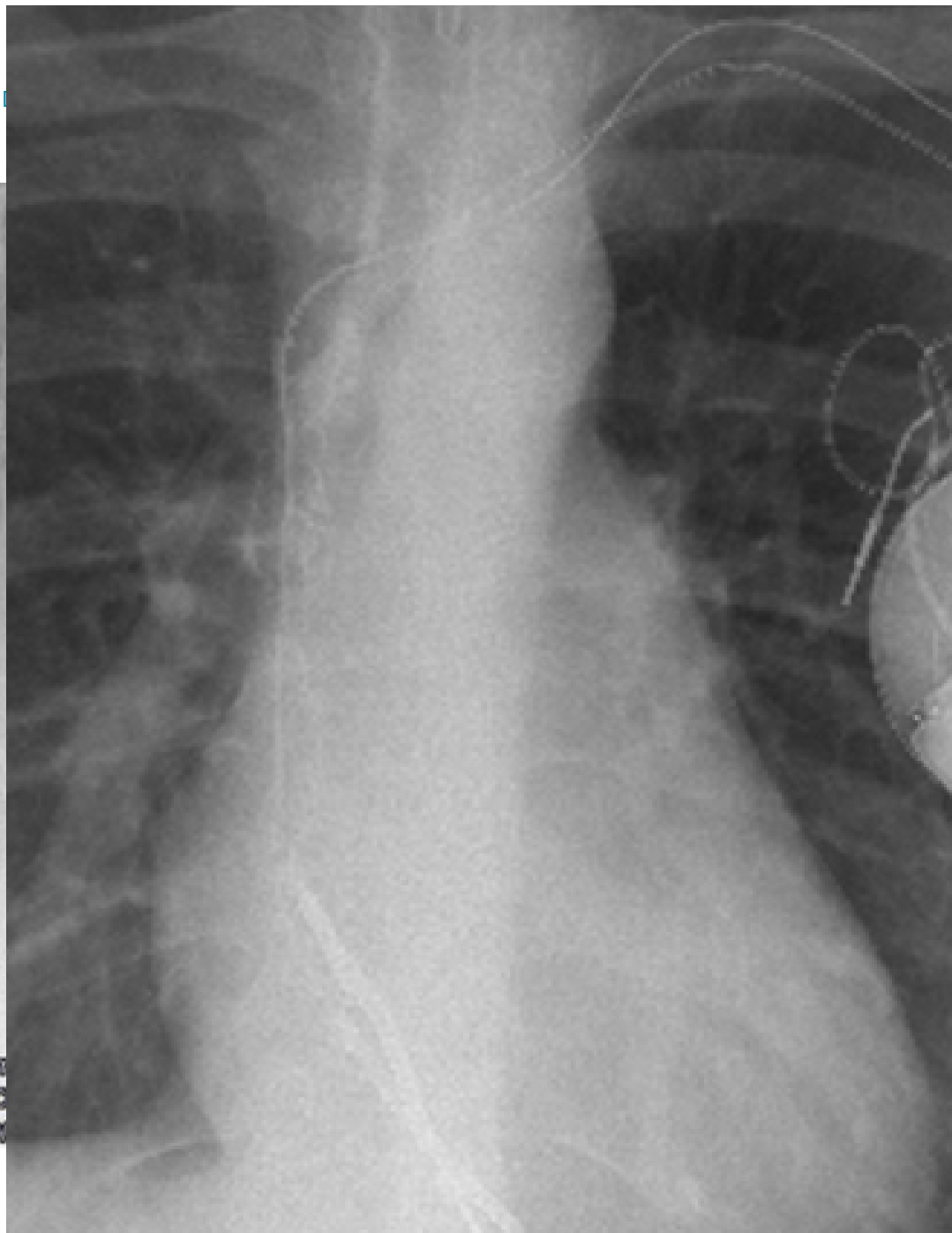
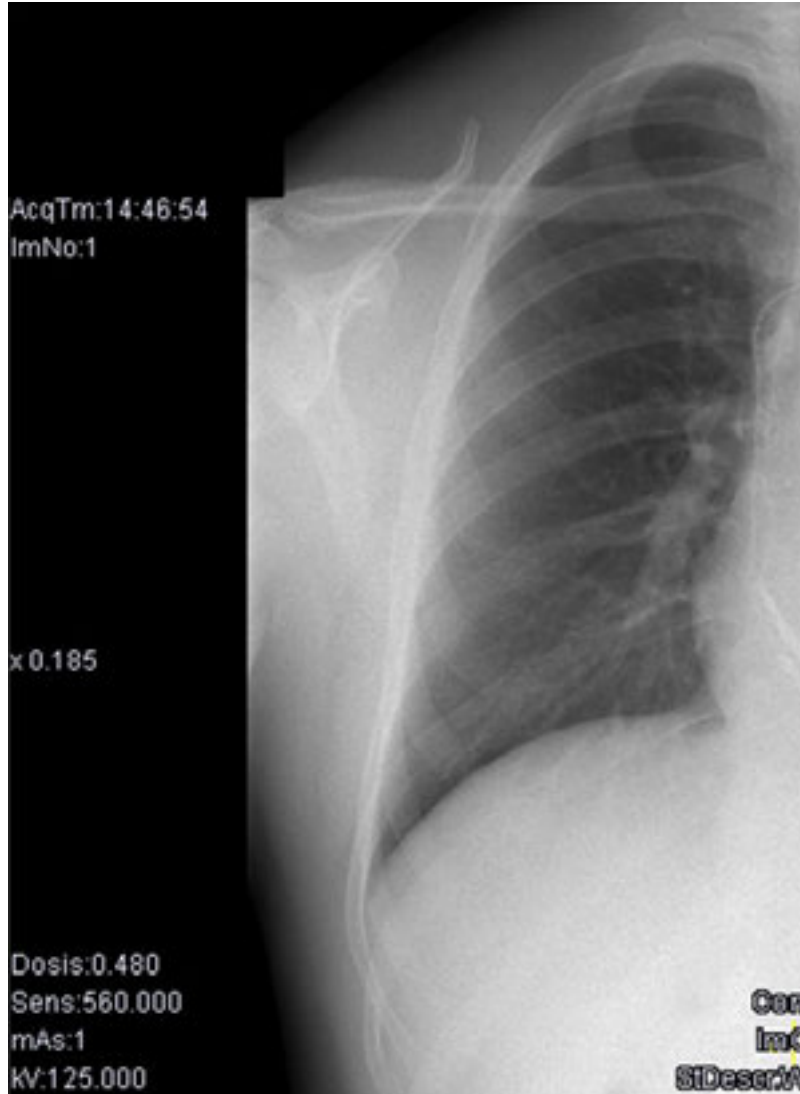
Beispiele extensiver Verwachsungen /Adhärenzen aus der Literatur

Aus:

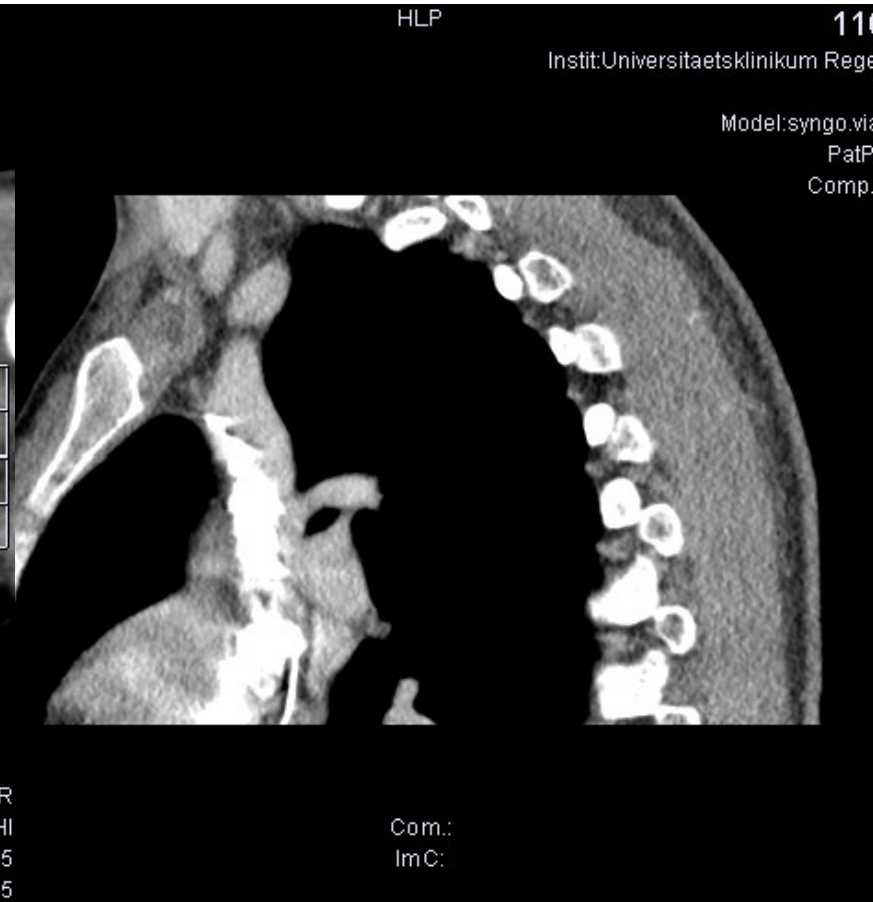
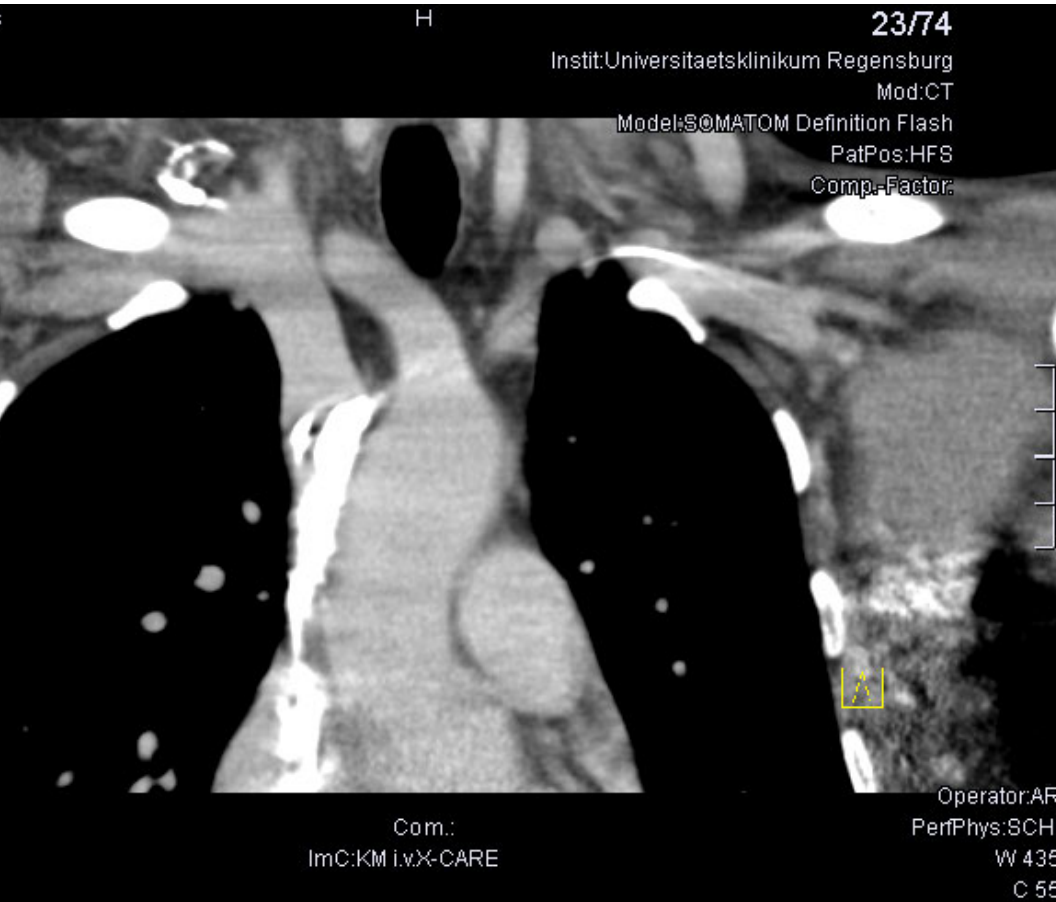
Abdoelhassan M, Bontempi L, Cerini M, Salghetti D, Arabia,G, Giacobelli D et al

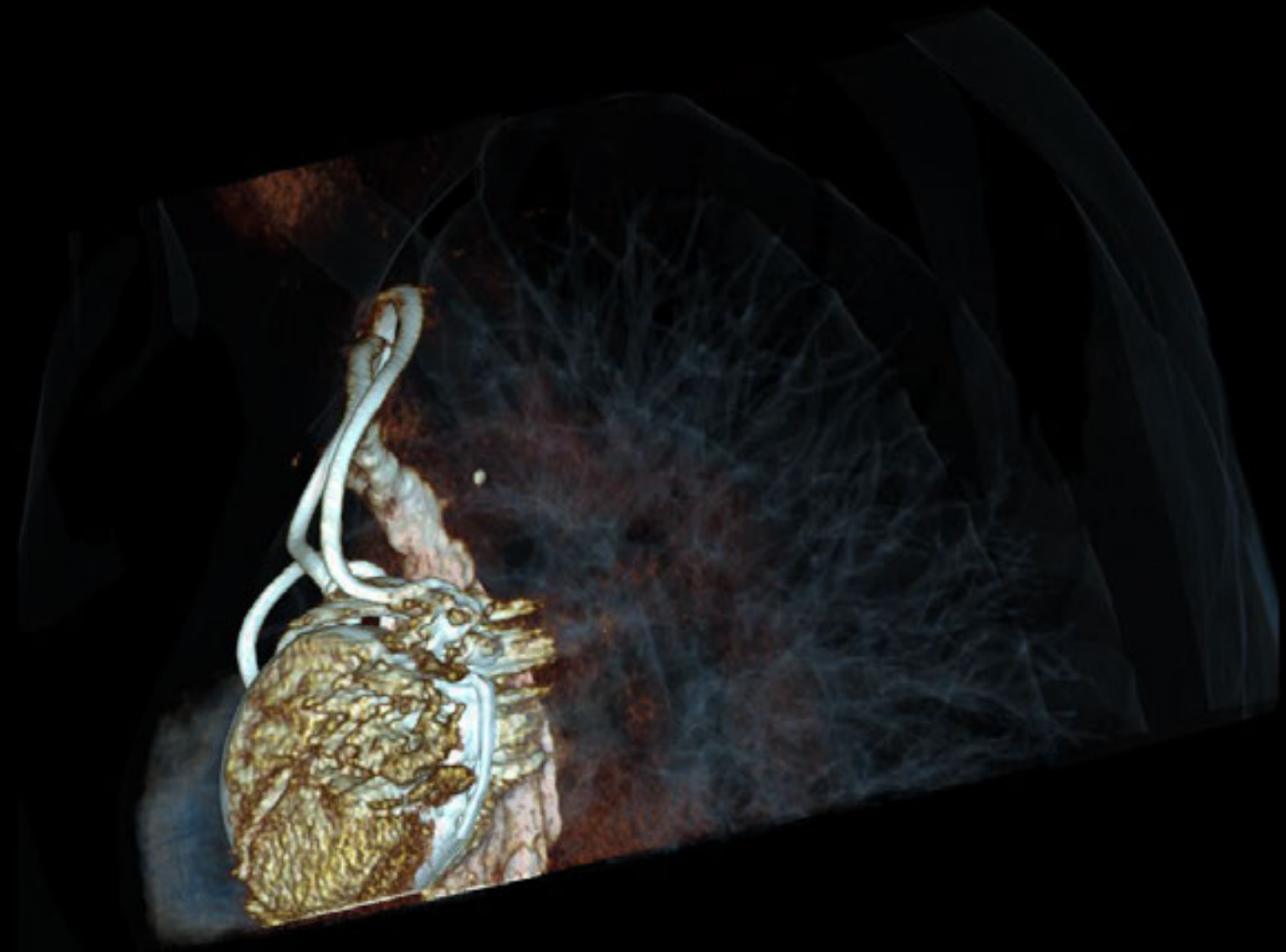
[The role of preoperative venography in predicting the difficulty of a transvenous lead extraction procedure.](#)

J Cardiovasc Electrophysiol. 2022; 33: 1034-1040

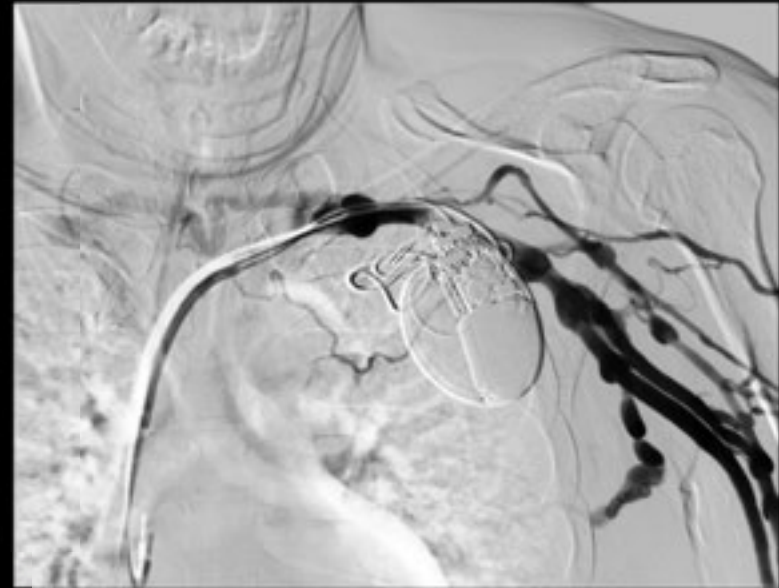






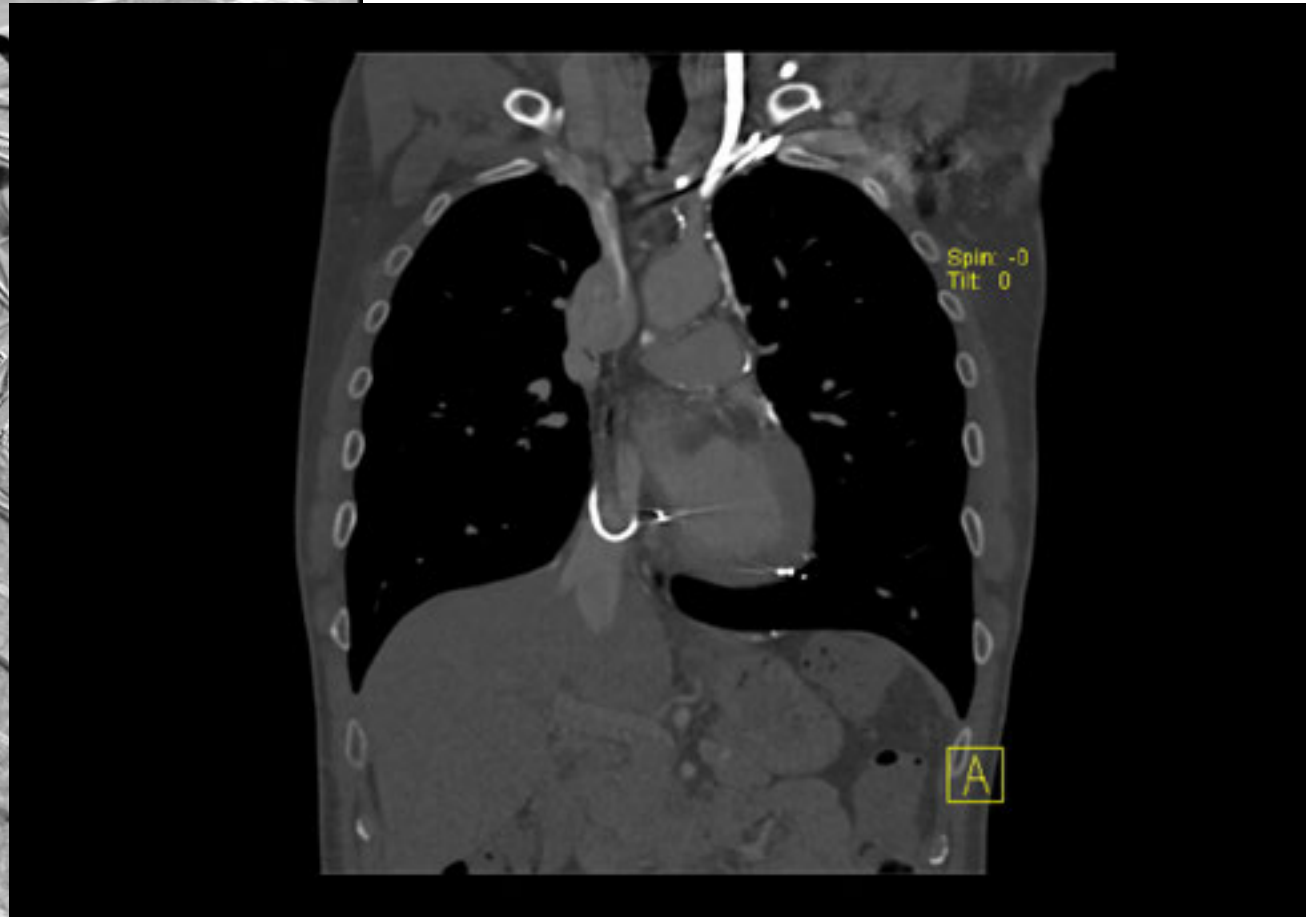
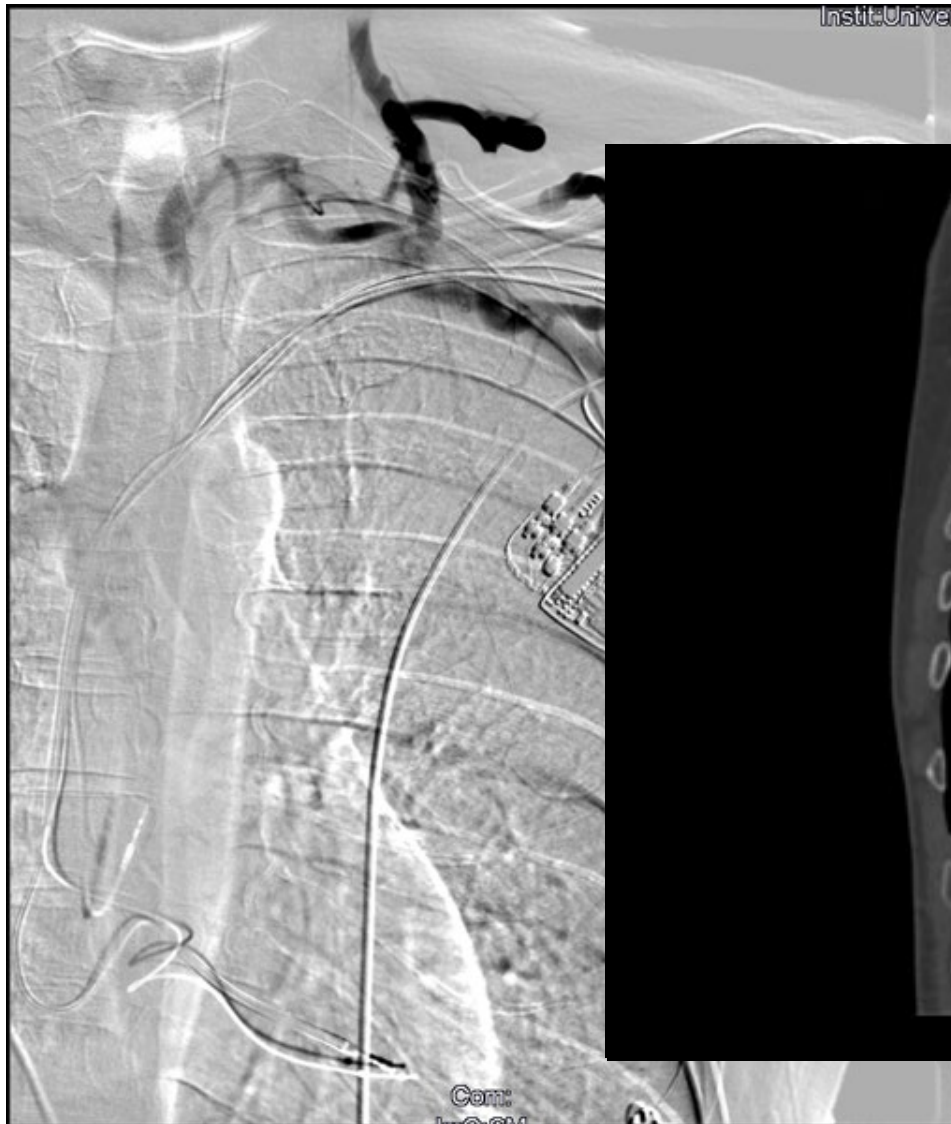


Okklusion



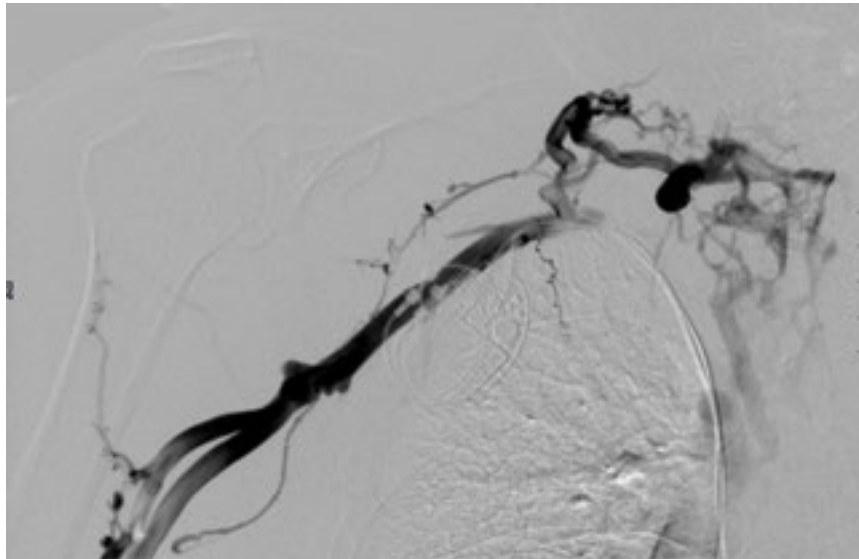
Okklusion





Venöser Verschluss bei Infektion intrakardial implantierter elektrischer Systeme

- n = 475 (2015 – 2021)
- alle CIED Re-Operation mit Sondenbeteiligung
- alle präoperativ digitale Subtraktionsvenographie



Keyser A, Jungbauer C, Rennert J, Linnemann B, Schmid C, Schopka S.
[Assessment of association between venous occlusion and infection of cardiac implantable electronic devices.](#)
Angiology (2021); ahead of print

univariate Analyse Category
n Patienten



Anzahl CIED Eingriffe mit Sondenbeteiligung
Implantierbare Cardioverter Defibrillatoren

	V. subclavia offen	V. subclavia verschlossen	p
	361 (76%)	114 (24%)	-
	1 (1/2)	1 (1/2)	0.105
	237 (65.7%)	48 (42.1%)	0.247

multivariate Analyse individual Variable

Variable	Coefficient	Standard Error	Wald Statistic	P value	Odds Ratio	5% Conf. Lower	95% Conf. Upper
Constant	-4.057	1.464	7.677	0.006	0.0173	0.000981	0.305
Koronare Herzerkrankung	0.833	0.385	4.696	0.030	2.301	1.083	4.889
Z.n. herzchirurgischem Eingriff	0.693	0.347	3.973	0.046	1.999	1.012	3.950
Novel orale Antikoagulation	-1.120	0.486	5.303	0.021	0.326	0.126	0.846
Infizierte CIED	4.332	0.430	101.599	<0,001	76.086	32.771	176.653

Sensitivität: 64,2%

Spezifität: 96,1%

Venöser Verschluss : immer gleich?

Venöser Verschluss : immer gleich?



Venöser Verschluss : infektionstypisch



