Dr. Björn H. Gemein – Radiologisches Zentralinstitut – Krankenhaus Nordwest – Frankfurt am Main

KRANKENHAUS NORDWEST

pAVK – Neues & Bewährtes

Aorta & Becken

Fallvorstellung & Diskussion

saint
Radiologische Interventionen
Symposium für angewandte interventionsradiologische Techniken
www.saint-kongress.de

10.09.2010 11:30-12:00

S3-Leitlinie Angiologie: Periphere arterielle Verschlusskrankheit (pAVK)

AWMF-Register Nr. 065/003

http://www.uni-duesseldorf.de/AWMF/ll/065-003.htm

http://www.uni-duesseldorf.de/AWMF/ll/065-003.pdf

Methodenreport zur S3-Leitlinie PAVK

http://www.uni-duesseldorf.de/AWMF/ll/065-003m.pdf

Inter-Society Consensus for the Management of PAD (TASC)

http://www.tasc-2-pad.org/upload/SSRubriqueProduit/Fichier2/597.pdf

ACC/AHA 2005 guidelines for the management of patients with peripheral arterial disease

http://www.guideline.gov/content.aspx?id=8503

TASC-Definition

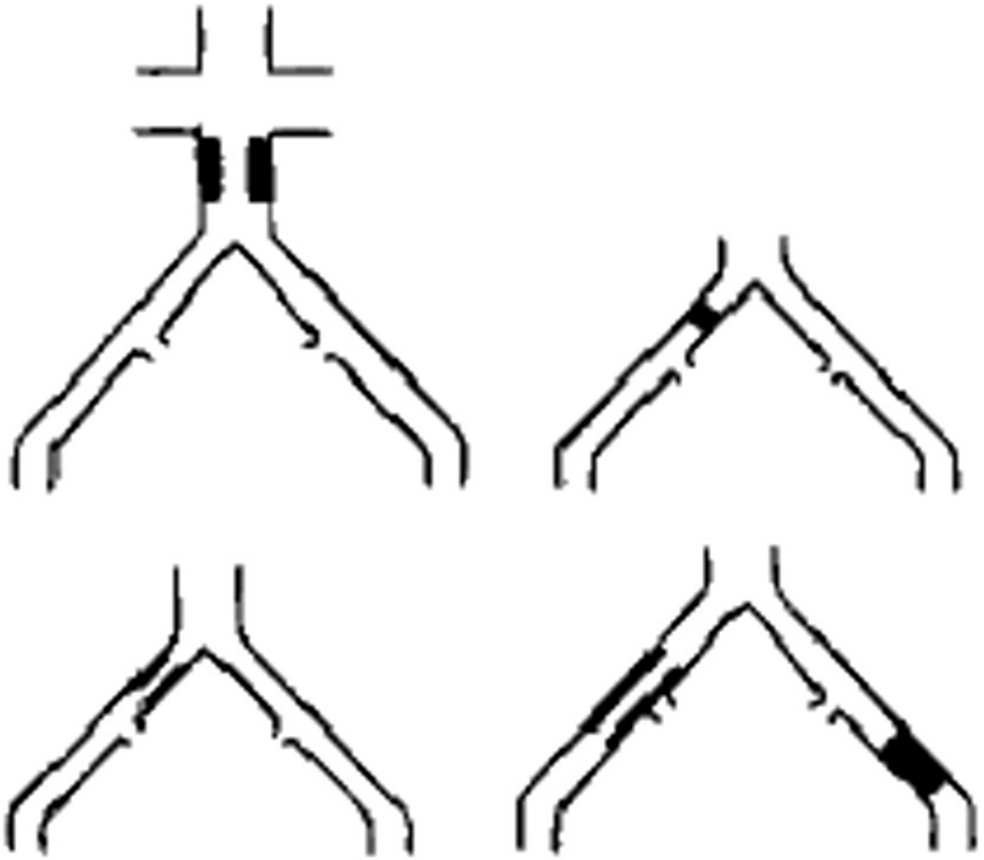
von Läsionen

der Beckenarterien

Typ A - D

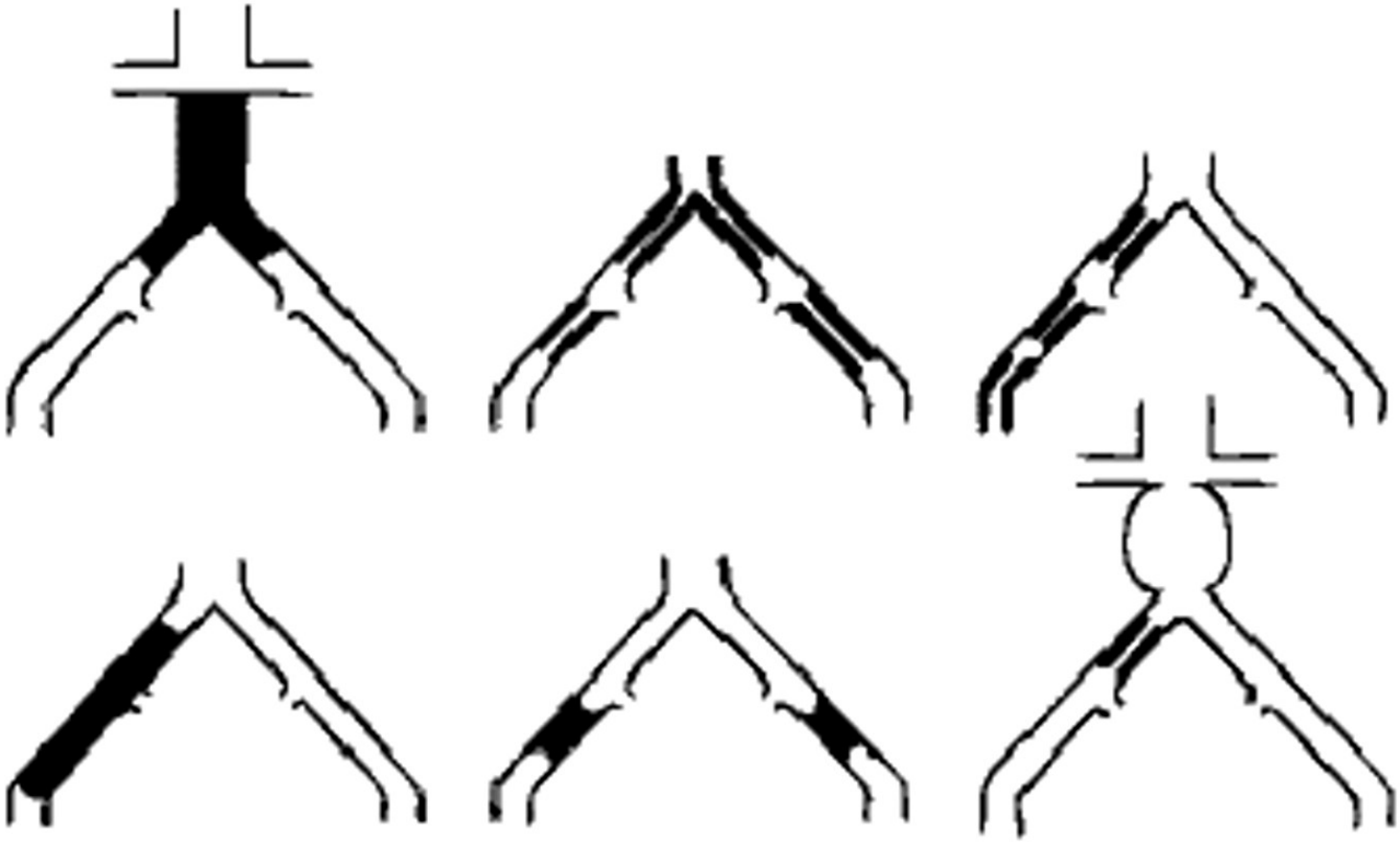
Typ-A-Läsionen

Typ-B-Läsionen



Typ-C-Läsionen

Typ-D-Läsionen



Empfehlungen zur endovaskulären Therapie von aortoiliakale Läsionen

- Typ-A-Läsionen: endovaskuläre Therapie ist primäre Behandlungsart
- Typ-B-Läsionen: endovaskuläre Therapie ist zu bevorzugen
- Typ-C-Läsionen: endovaskuläre Therapie ist möglich
- Typ-D-Läsionen: gefäßchirurgische Behandlung ist Therapie der Wahl

Empfehlungen zur endovaskulären Therapie von aortoiliakale Läsionen

Typ-C-Läsionen:

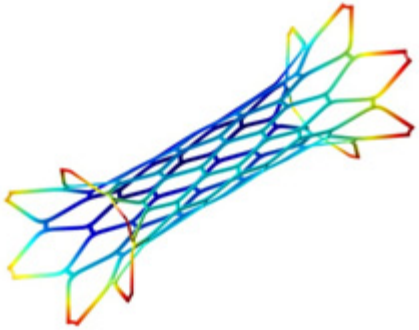
- Chirurgische Vorgehensweise ist zu bevorzugen bei Verschlüssen und Stenosen der Beckenarterien, welche die A. femoralis communis einbeziehen
- Interventionelle Therapie ist gerechtfertigt, wenn die chirurgische Therapie ein höheres Risiko oder eine geringere Aussicht auf Erfolg bietet bzw. wenn der Patient dies ausdrücklich wünscht

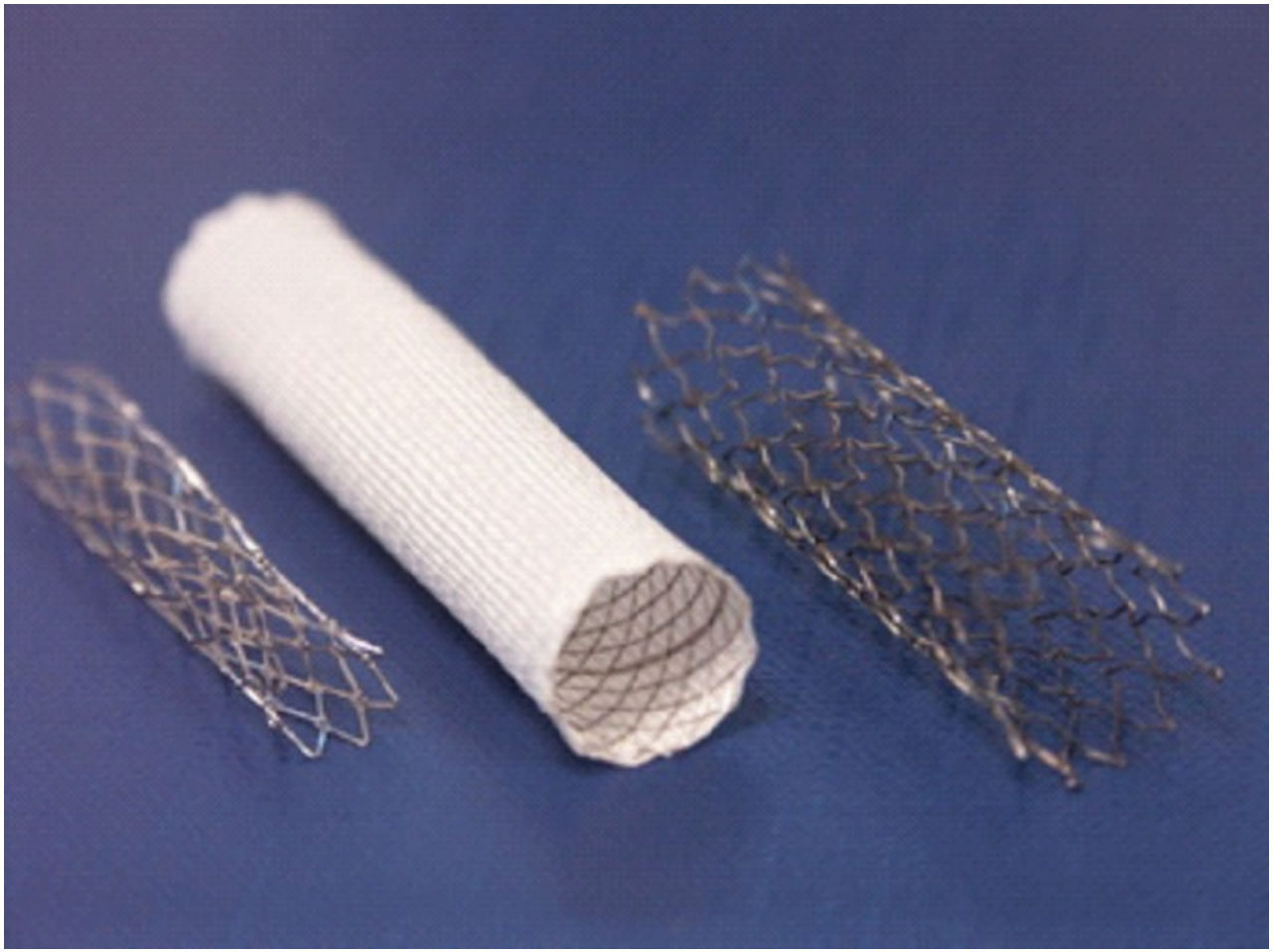
Empfehlungen zur endovaskulären Therapie von aortoiliakale Läsionen

Typ-D-Läsionen: interventionelle Behandlungen sind möglich bei

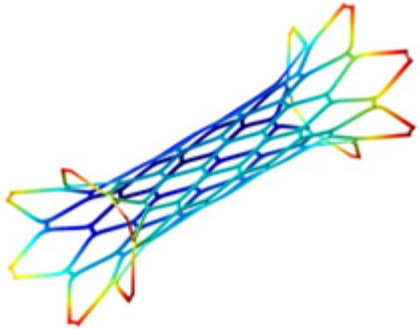
- unilateralen Verschlüssen sowohl der A. iliaca externa und der A. iliaca communis
- bilateralen Verschlüssen der A. iliaca externa

Stents



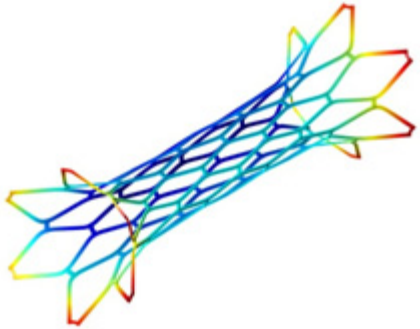


Indikation für den Stent



Beckenarterien: Stent-Implantation zusätzlich zu PTA, wenn das Ergebnis der PTA suboptimal ist oder verfehlt wurde (persistierende Reststenose > 50%, Recoiling, flusslimitierende Dissektion)

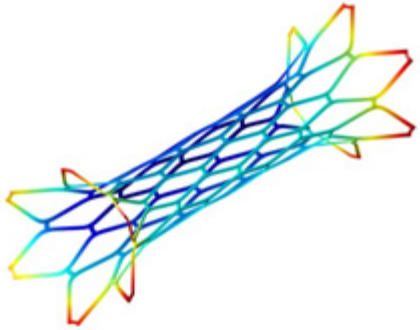
Indikation für den Stent



Primäre Stentimplantation bei

- Stenosen und Verschlüsse der A. iliaca communis
- Stenosen und Verschlüsse der A. iliaca externa

Langzeitoffenheitsraten nach Revaskularisation

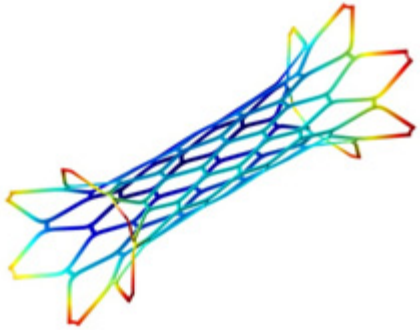


Iliakale Claudicatio:

Therapie	5-Jahres-Offenheitsrate
PTA	71 %
PTA + Stent	82 %
Aorto-(bi)femoraler Bypass	85 %

Norgren L et al., „Inter-Society Consensus for the Management of Peripheral Arterial Disease (TASC II)“, Eur J Vasc Endovasc Surg 2007; 33(1): S1-75

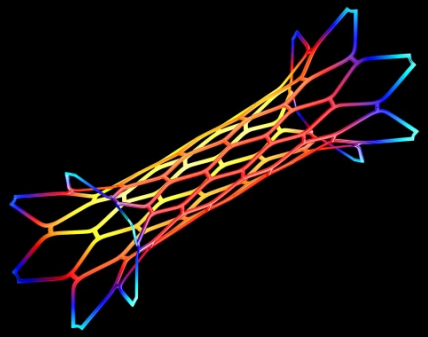
Langzeitoffenheitsraten nach Revaskularisation



„Kissing Stent“:

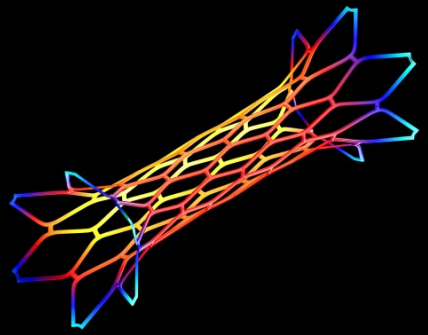
Zeitraum	Primäre Offenheitsrate
36 Monate	79,4 %

Haulon S et al., „Percutaneous reconstruction of the aortoiliac bifurcation with the "kissing stents" technique: long-term follow-up in 106 patients“, J Endovasc Ther. 2002 Jun; 9(3): 363-368



Fallbeispiele
Fallbeispiele
Fallbeispiele

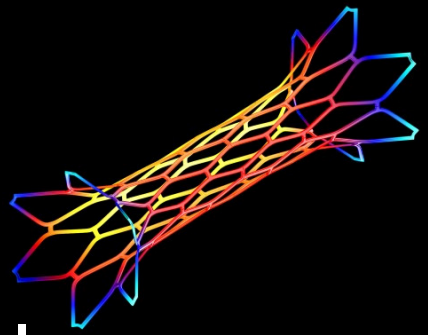
AIC-Stenose



Pat.: M., 79 J
Klin. Ang.: Beckenarterienstenose li

SUBTRACTION
Se:2
Im:2 (F7/12)
K.JÜRGEN
Study Date:17.08.2010
Study Time:08:40:48
MRN:
C563
W883

Stent AIC



Diag.: li AIC stenosiert, li AII verschlossen
Th.: Stent li AIC (8mm/6cm), PTA (7mm/4cm)

SUBTRACTION
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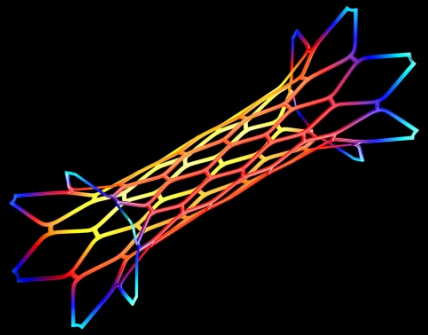
Im:10 (F9/12)
K.JÜRGEN
Study Date:23.08.2010
Study Time:08:24:08
MRN:
C583
W883

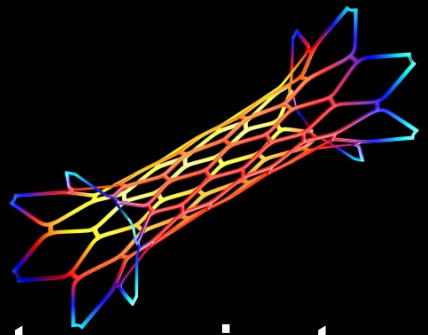
AIC-Stenose li > re



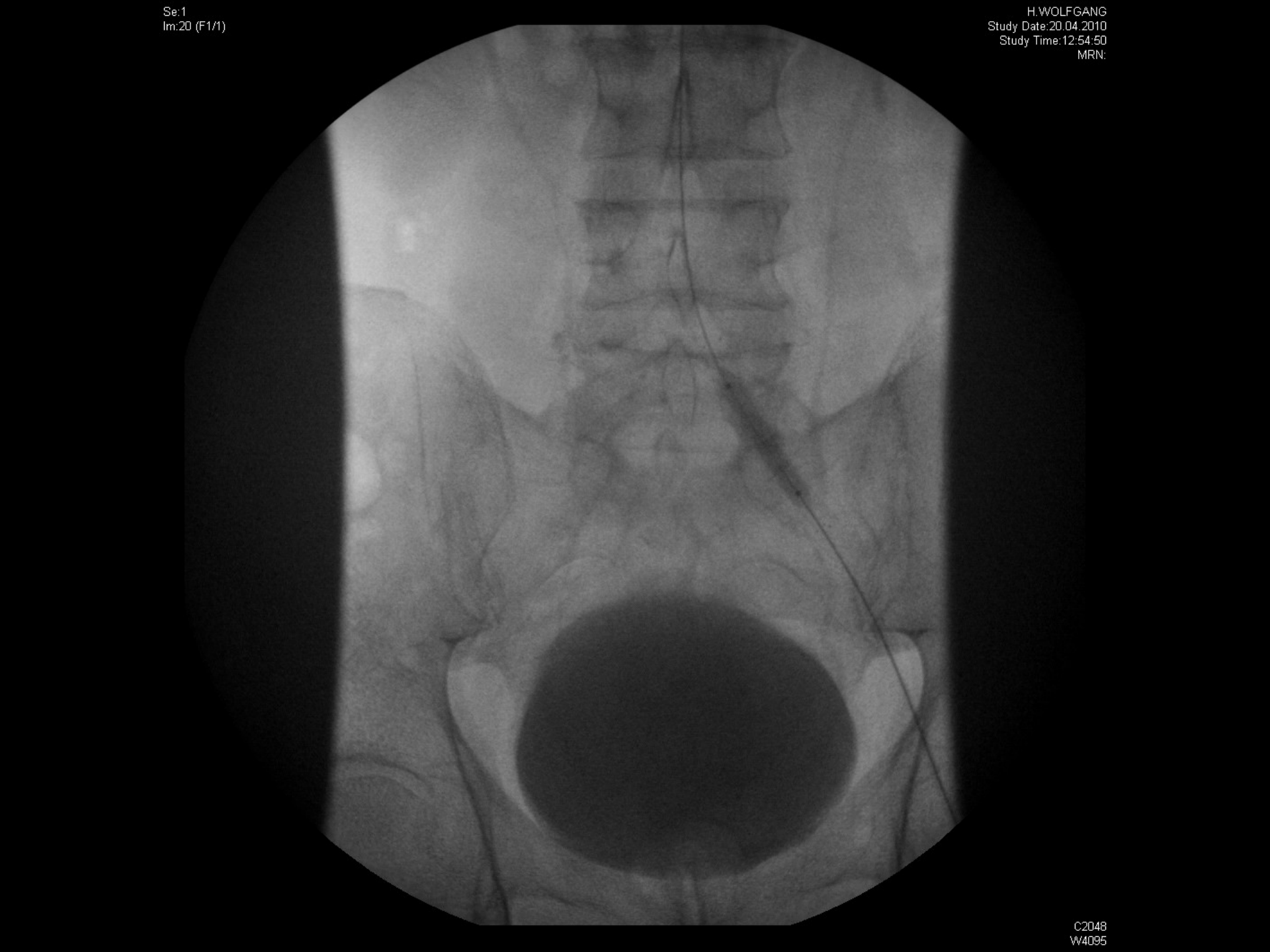
Pat.: M., 64 J
Klin. Ang.: V.a. Beckenstenose li > re

Se:1
Im:15 (F7/12)
H.WOLFGANG
Study Date:20.04.2010
Study Time:12:54:50
MRN:
C2048
W4095

Kissing Stent



Diag.: li AIC verschlossen, re AIC stenosiert
Th.: Stent li AIC (8mm/6cm), PTA (7mm/4cm), weiterhin Verschluss durch prox. Plaque. Stent bd AIC (8mm/6cm), PTA (7mm/4cm)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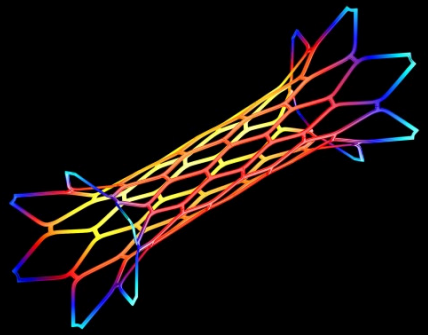
H.WOLFGANG
Study Date:20.04.2010
Study Time:12:54:50
MRN:
C2048
W4095

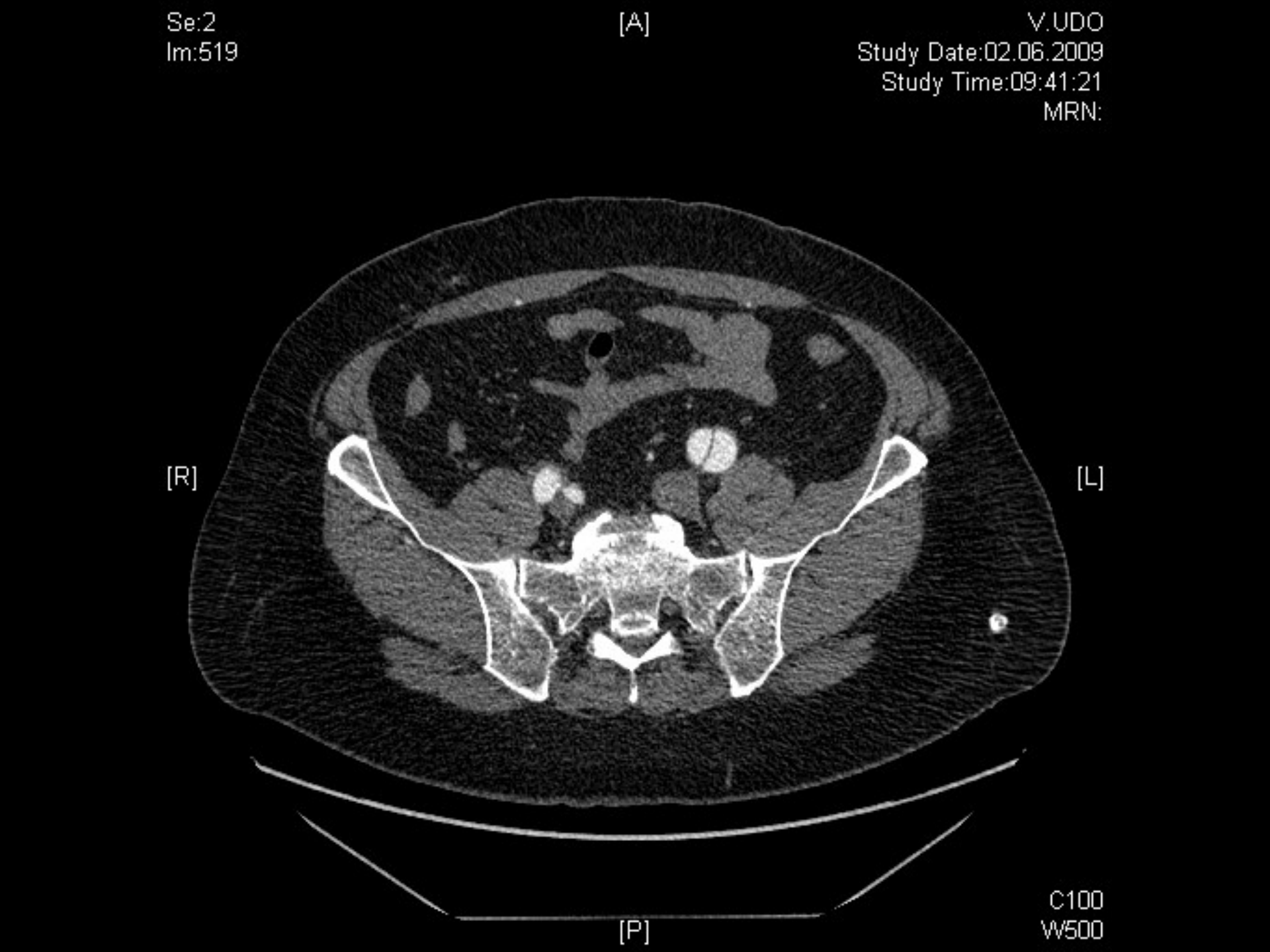
Se:1
Im:21 (F9/13)
H.WOLFGANG
Study Date:20.04.2010
Study Time:12:54:50
MRN:
C2048
W4095

Se:1
Im:23 (F9/13)
H.WOLFGANG
Study Date:20.04.2010
Study Time:12:54:50
MRN:
C2048
W4095

Iliakales Aneurysma



Pat.: M., 61 J
Klin. Ang.: V.a. Aneurysma li AIC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Im:519
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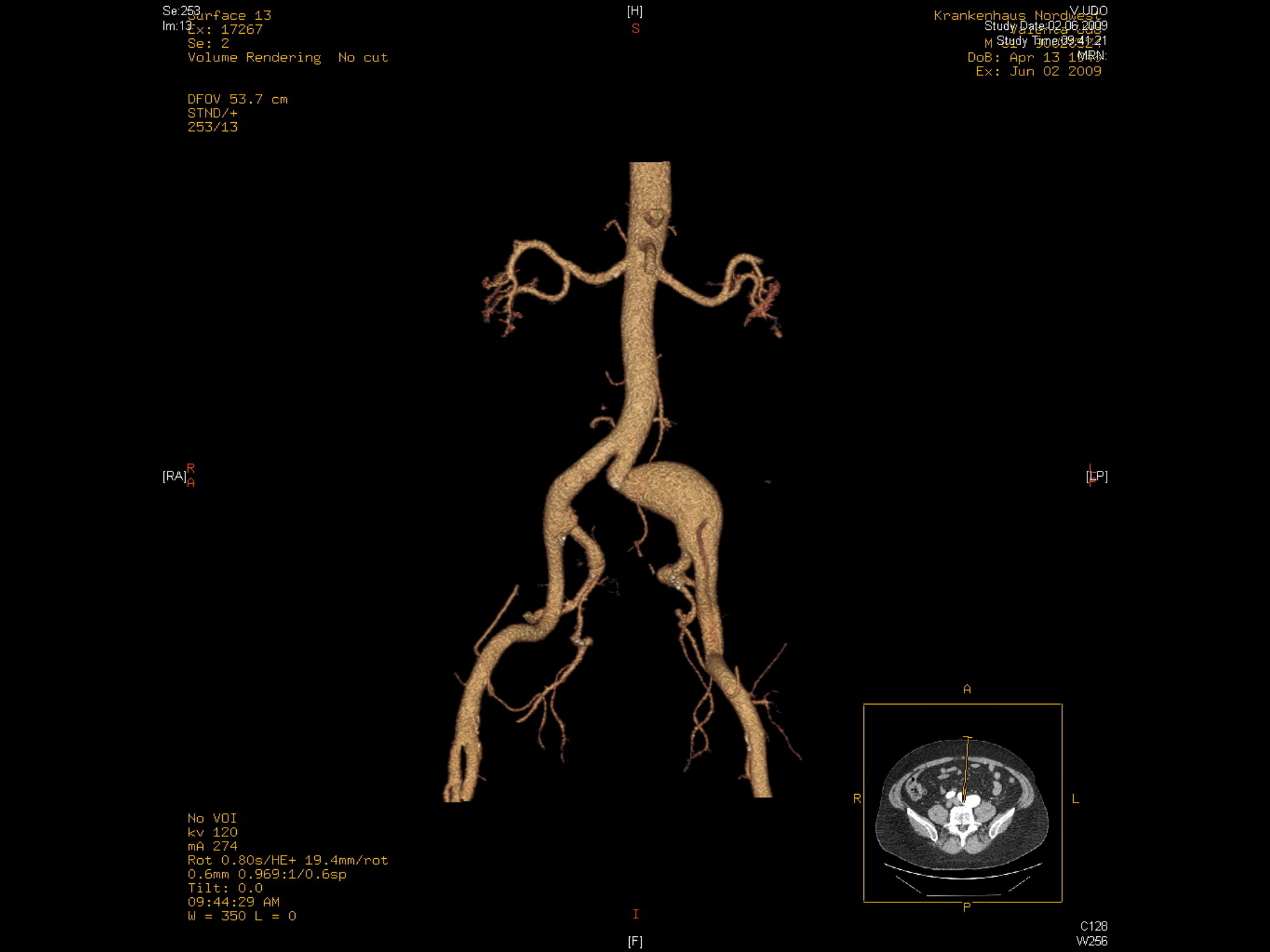
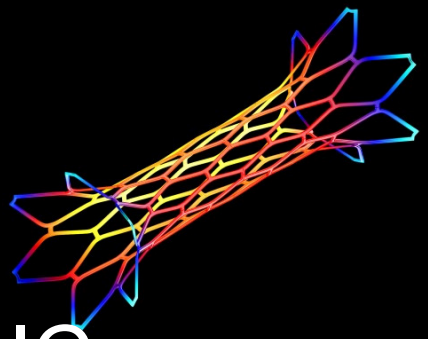
V.UDO
Study Date:02.06.2009
Study Time:09:41:21
MRN:
[R]
[L]
[P]
C100
W500


Se:253
Im:13
Surface 13
Ex: 17267
Se: 2
Volume Rendering No cut
DFOV 53.7 cm
STND/+
253/13
[H]
S
Krankenhaus Nordwest
Study Date:02.06.2009
Study Time:09:41:21
DoB: Apr 13 1
Ex: Jun 02 2009
MRN:
[RA]
R
A
[LP]
No VOI
kv 120
mA 274
Rot 0.80s/HE+ 19.4mm/rot
0.6mm 0.969:1/0.6sp
Tilt: 0.0
09:44:29 AM
W = 350 L = 0
I
[F]
A
R
L
P
C128
W256

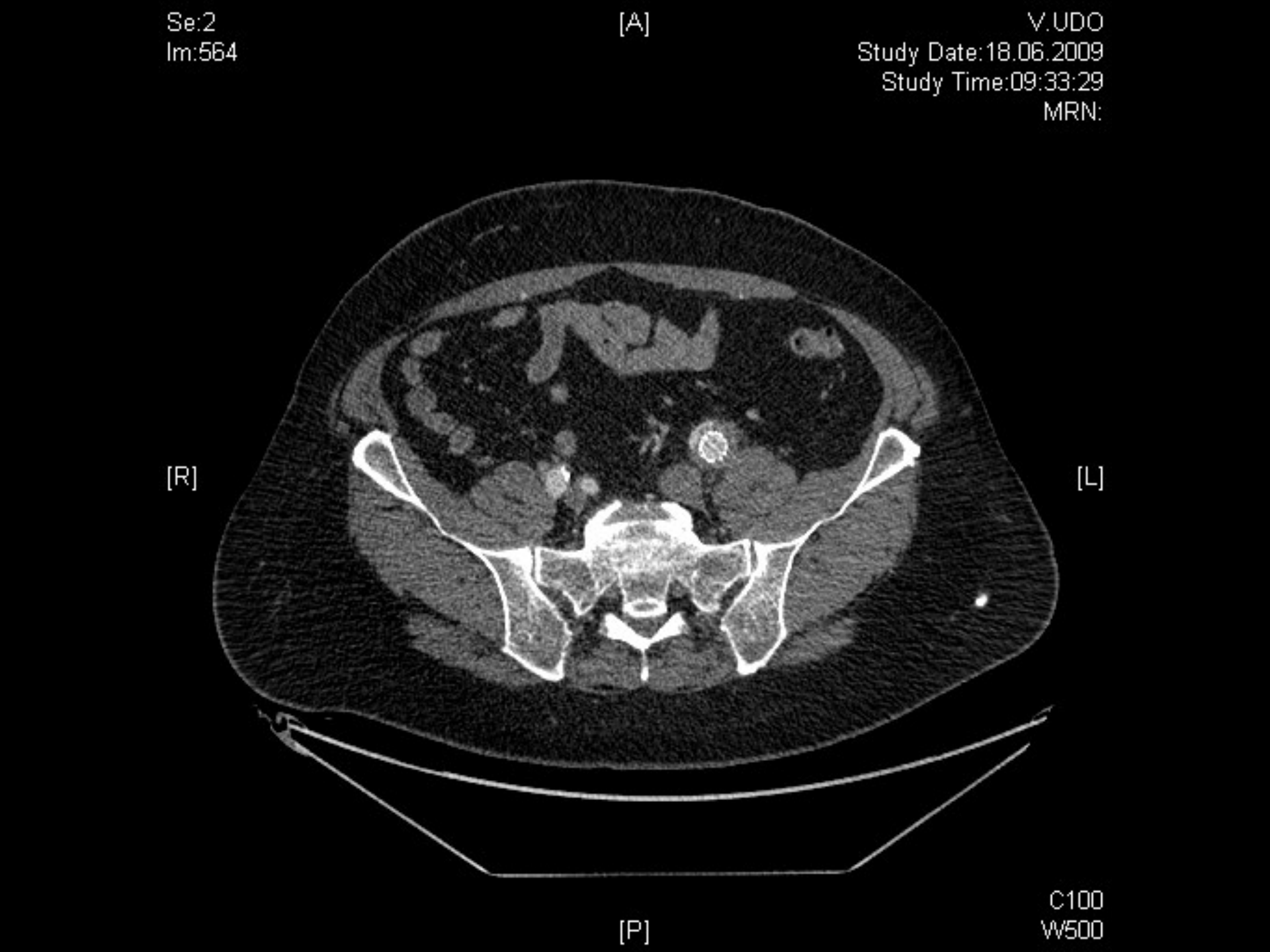
Se:1
Im:2 (F11/19)
V.UDO
Study Date:15.06.2009
Study Time:08:45:00
MRN:
C2048
W4095

Stent iliakales Aneurysma



Diag.: Disseziiertes Aneurysma li AIC

Th.: Coiling (5 Platinspiralen) li AII, Fluency Stentgraft (13,5mm/12cm), PTA (14mm).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Im:564
[A]
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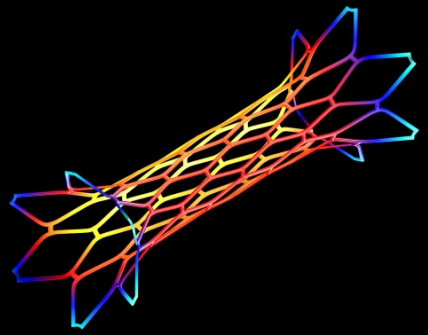
Study Time:09:33:29
MRN:
[R]
[L]
[P]
C100
W500

Stenose Bypass



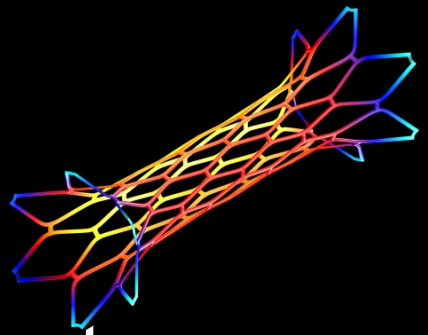
Pat.: M., 74 J
Klin. Ang.: pAVK 3 re. Z.n. femoro-femoralem Cross-over-Bypass vor 4 J, Z.n. femoro-profundalem und femoro-poplietalem Venenbypass re

Se:1
Im:10005 (F1/1)
F.WILHELM
Study Date:09.04.2010
Study Time:13:38:29
MRN:
C512
W512

Se:2
Im:10004 (F1/1)
F.WILHELM
Study Date:09.04.2010
Study Time:13:38:29
MRN:
C512
W512

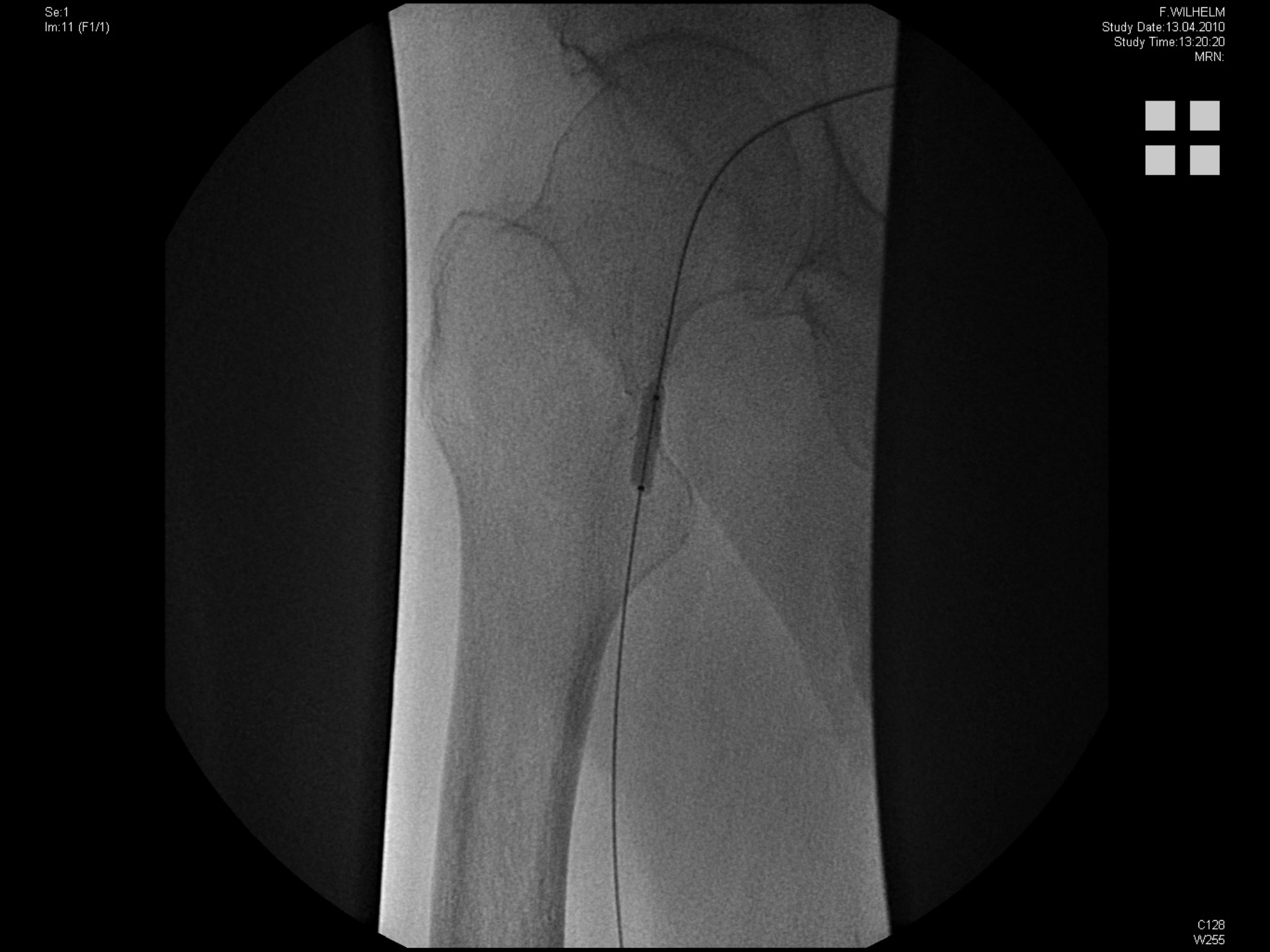
ZIRN Krankenhaus Nordwest GFM
F.WILHELM
Study Date:13.04.2010
Study Time:13:20:20
MRN:
pacs
90117998
13-04-2010
ROT
-19
ANG
2
Z-Maske:
1.00
Z-Bild:
3.00
Z-serie:
14:10:40
SERIE
8
6
MASKE BILD
2
C128
W255

PTA Bypass



Diag.: Cross-over-Bypass, Abgangsstenose re femoro-poplietaler Bypass, Stenose li Anastomose Cross-over-Bypass

Th.: PTA (5mm) re Bypass-Abgang und li Bypass-Anastomose (cross-over)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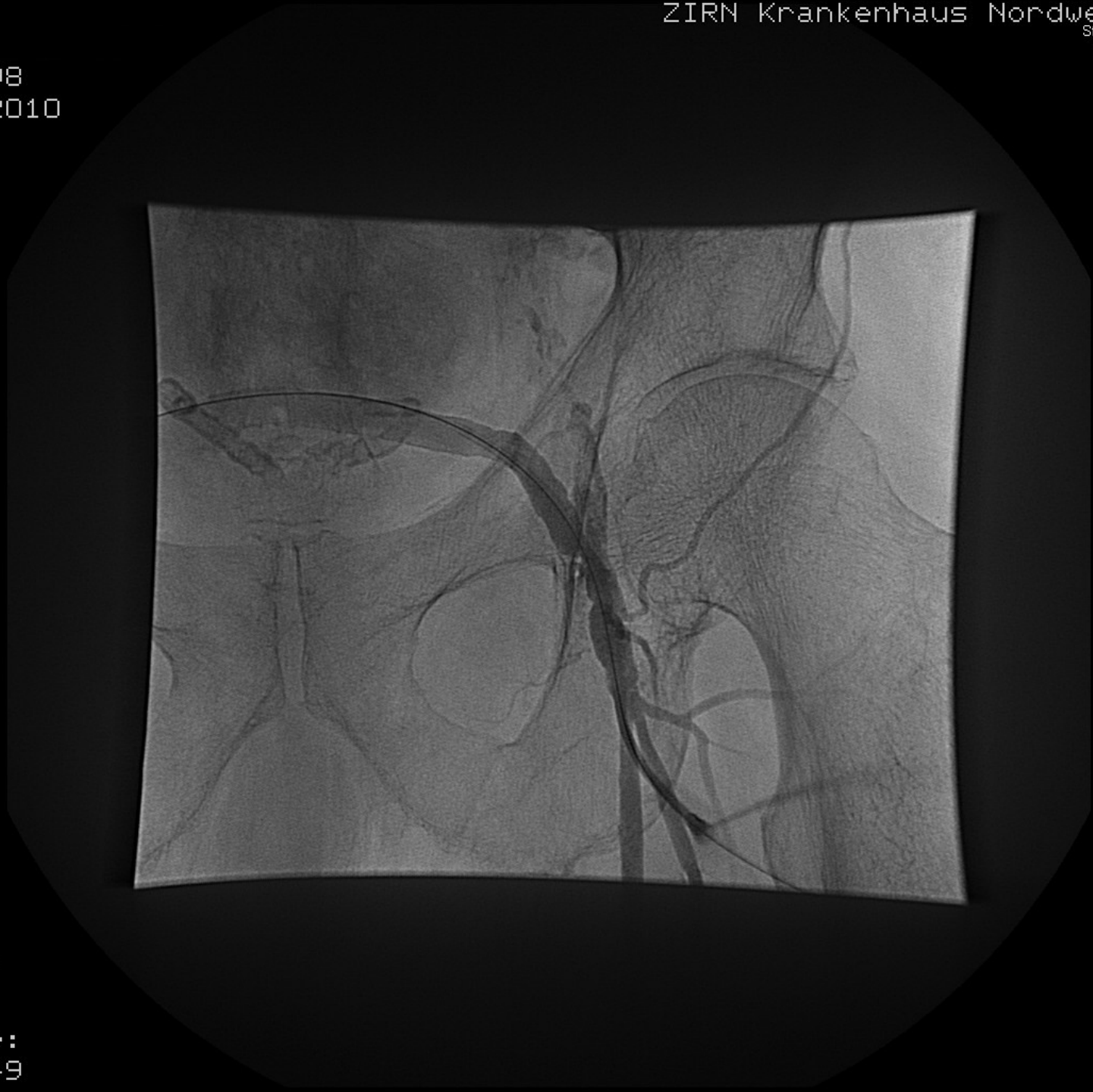
Im:11 (F1/1)
F.WILHELM
Study Date:13.04.2010
Study Time:13:20:20
MRN:
C128
W255

ZIRN Krankenhaus Nordwest GFM
F. WILHELM
Study Date:13.04.2010
Study Time:13:20:20
MRN:
pacs
90117998
13-04-2010
ROT
-19
ANG
2
Z-Maske:
1.00
Z-Bild:
3.00
Z-serie:
14:27:10
SERIE
10
7
MASKE BILD
2
C128
W255


ZIRN Krankenhaus Nordwest GFM
F. WILHELM
Study Date:13.04.2010
Study Time:13:20:20
MRN:
pacs
90117998
13-04-2010
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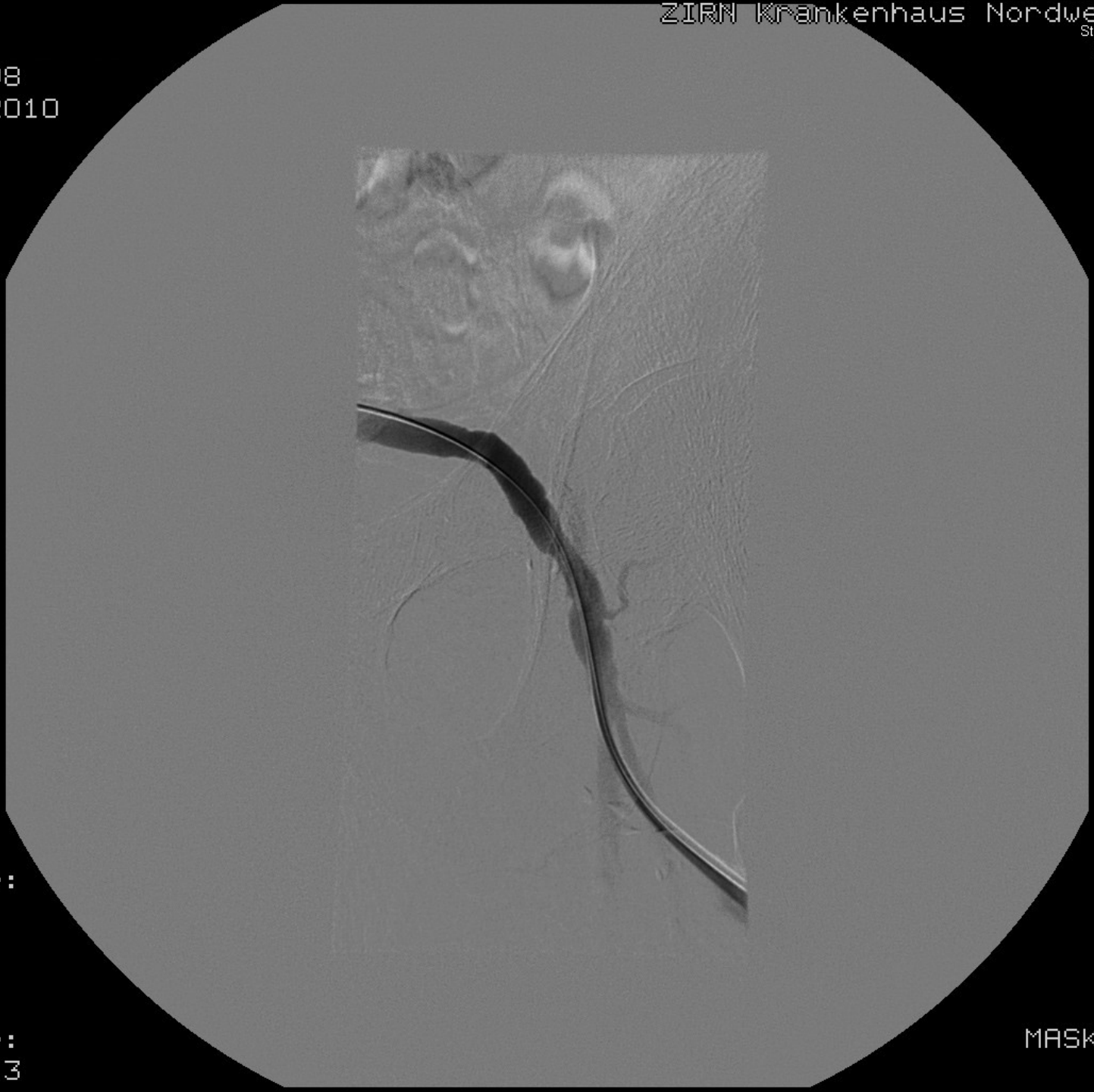
Z-Bild:
3.00
Z-serie:
15:00:49
SERIE
20
6
BILD
C128
W255

F.WILHELM
Study Date:13.04.2010
Study Time:13:20:20
MRN: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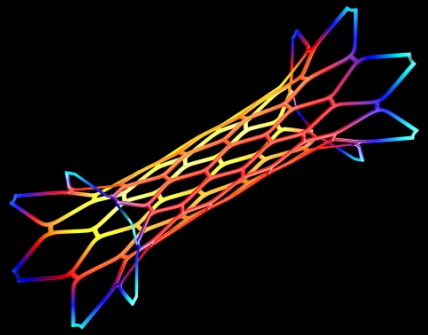
F. WILHELM
Study Date:13.04.2010
Study Time:13:20:20
MRN:
pacs
90117998
13-04-2010
ROT
-5
ANG
3
Z-Maske:
1.00
Z-Bild:
2.00
Z-serie:
15:10:13
SERIE
22
6
MASKE BILD
2
C128
W255

Stenose Bypass

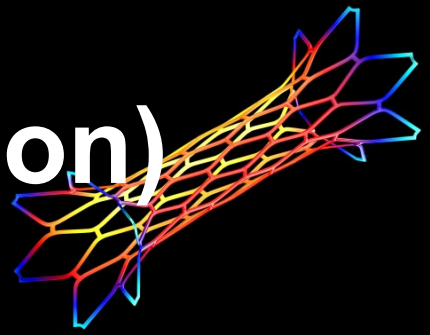


Pat.: M., 67 J
Klin. Ang.: femoro-poplietaler Bypass re,
Stenose prox.

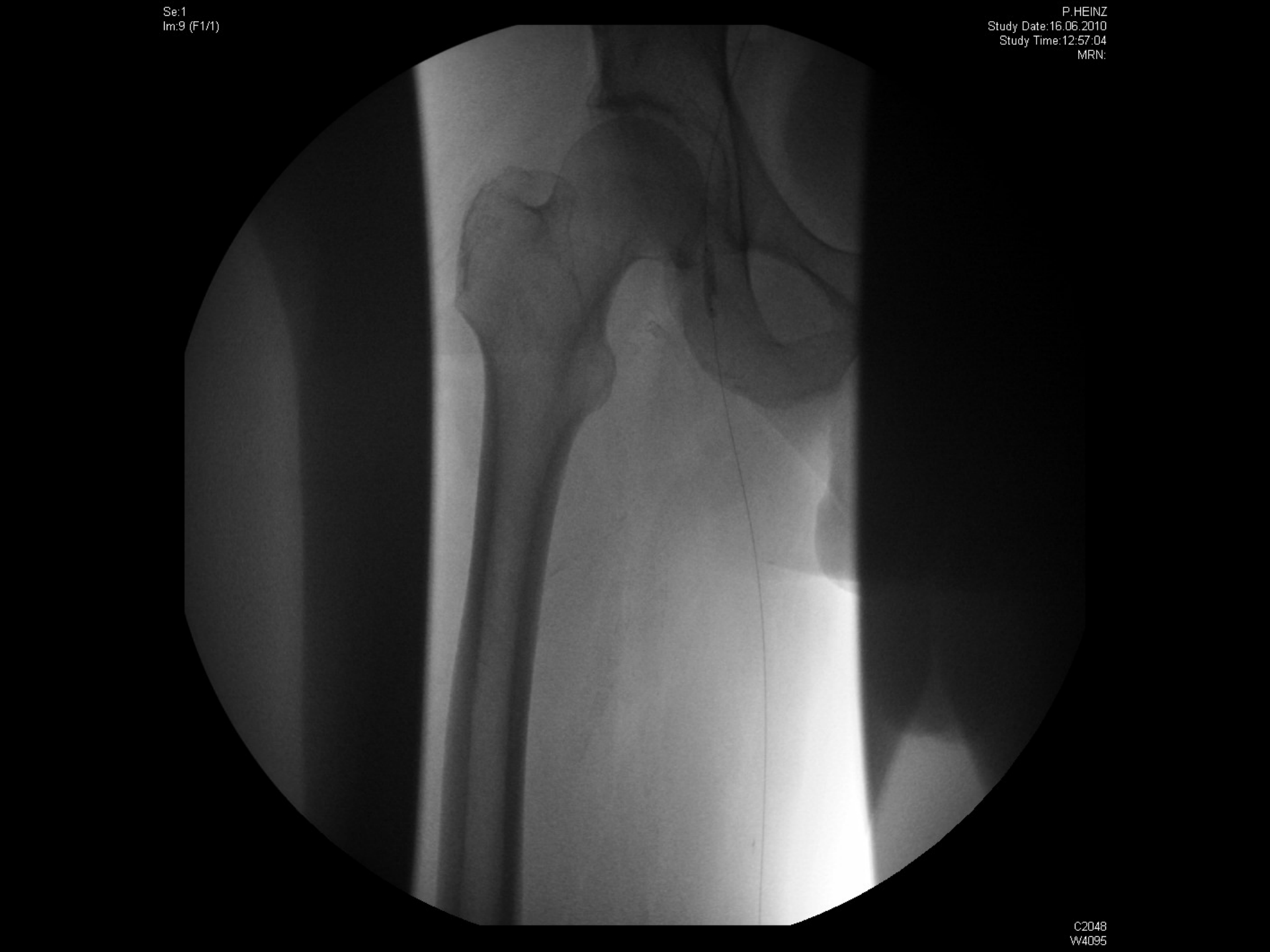
P.HEINZ
Study Date:16.06.2010
Study Time:12:57:04
MRN:

P.HEINZ
Study Date:16.06.2010
Study Time:12:57:04
MRN:

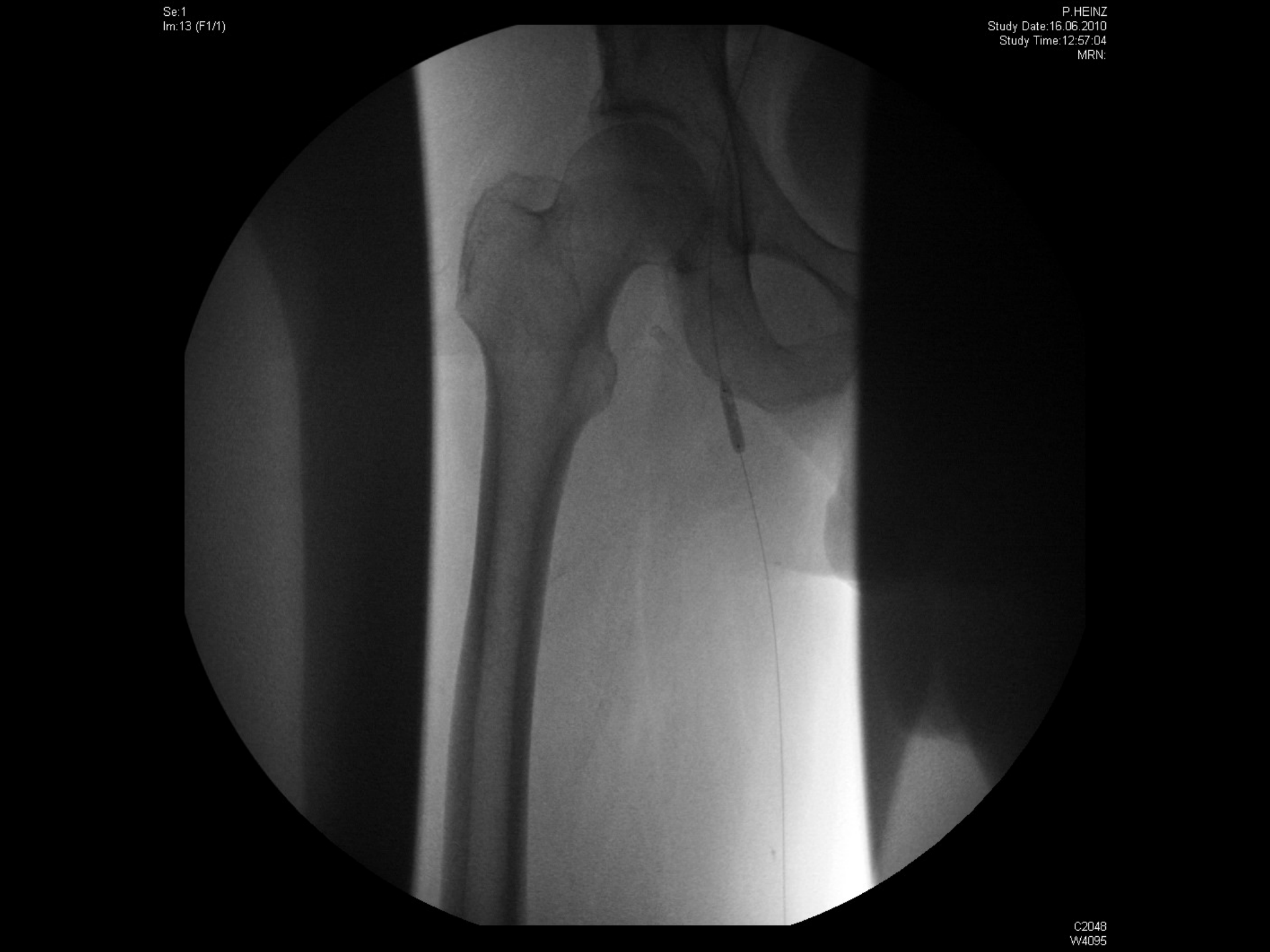
PTA Bypass (cutting balloon)



Diag.: hochgradige Stenose Bypass prox.
Th.: PTA Cutting balloon (5mm/5cm)


Se:1
Im:9 (F1/1)
P.HEINZ
Study Date:16.06.2010
Study Time:12:57:04
MRN:
C2048
W4095

P.HEINZ
Study Date:16.06.2010
Study Time:12:57:04
MRN:

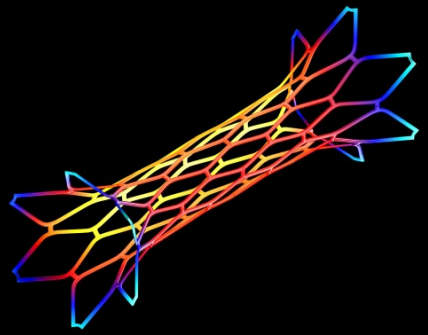

Se:1
Im:13 (F1/1)
P.HEINZ
Study Date:16.06.2010
Study Time:12:57:04
MRN:
C2048
W4095

Se:1
Im:19 (F6/8)

P.HEINZ
Study Date:16.06.2010
Study Time:12:57:04
MRN:

C2048
W4095

Grenzen der Intervention



Pat.: M., 79 J
Klin. Ang.: pAVK bds

SUBTRACTION
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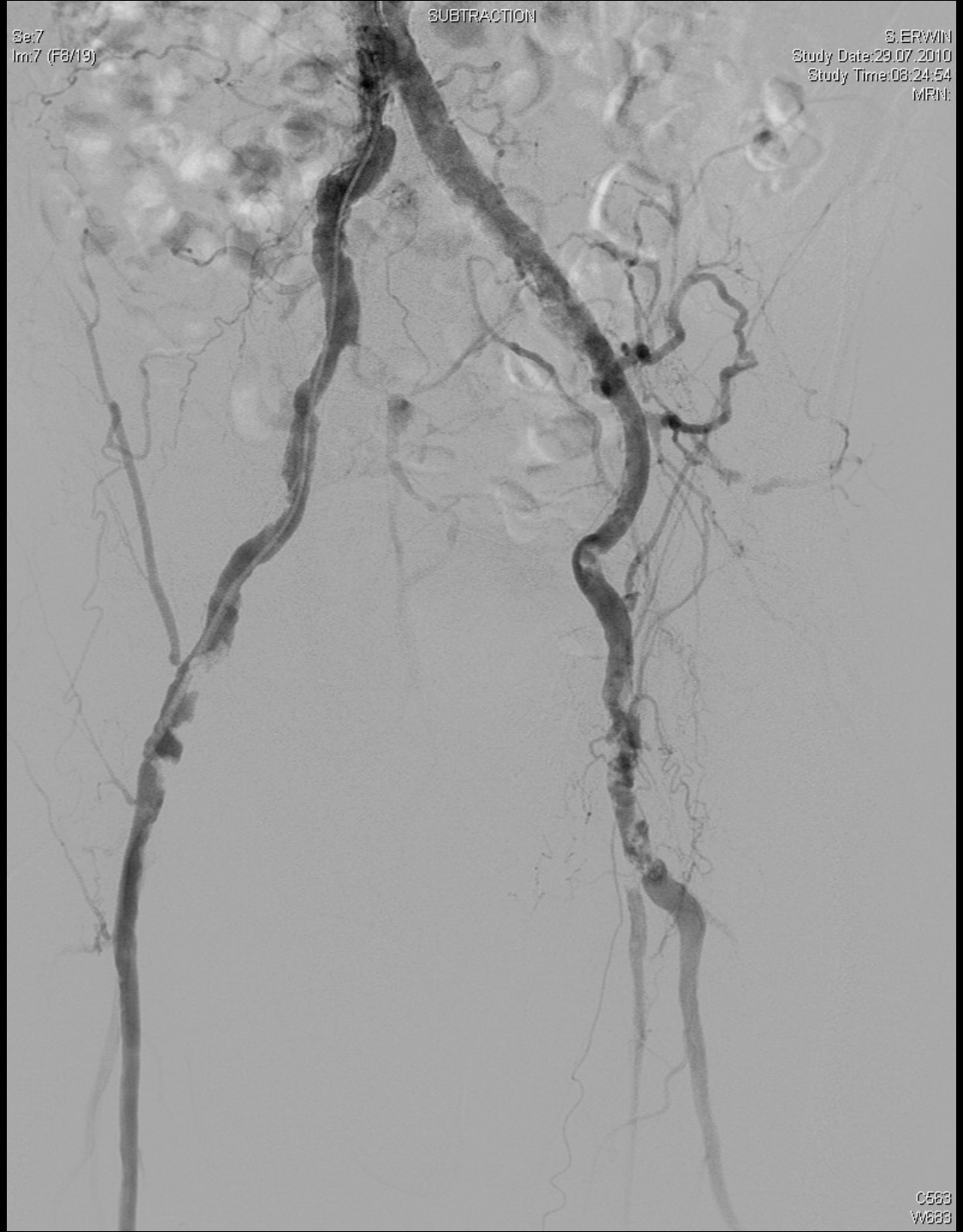
Im:2 (F8/12)
S.ERWIN
Study Date:29.07.2...
Study Time:08:24:54
MRN:
C563
VV683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Study Time:08:24:54
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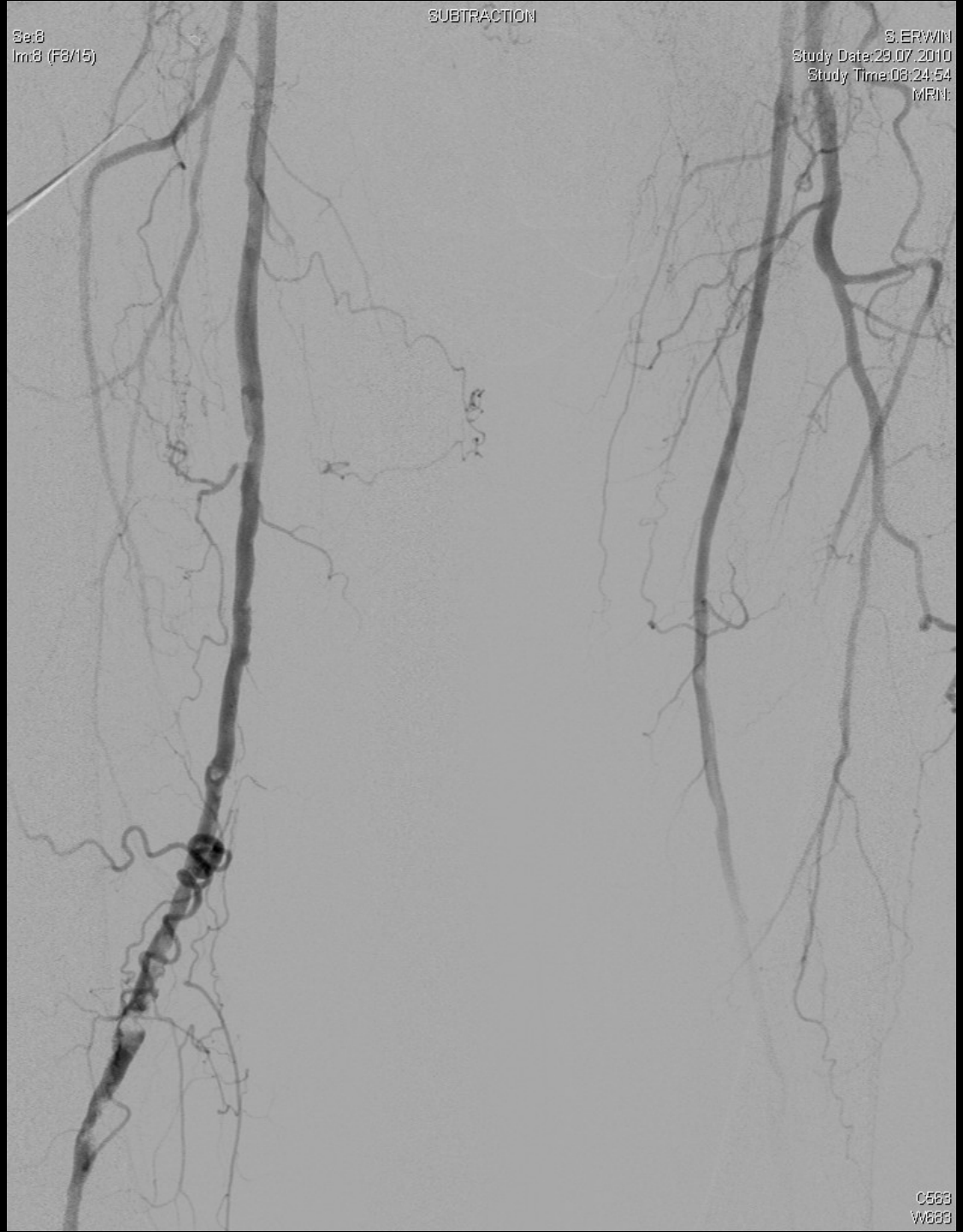
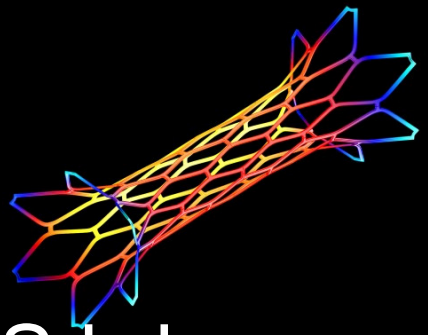
C683
W883

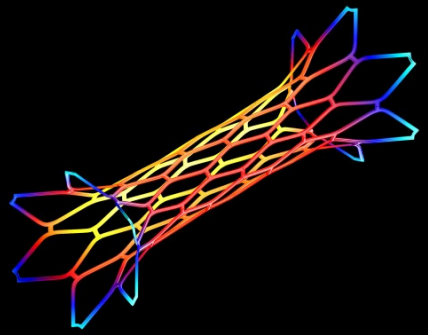

SUBTRACTION
Se:8
Im:8 (F8/15)
S.ERWIN
Study Date:29.07.2010
Study Time:08:24:54
MRN:
C683
W883

Indikation zur Operation



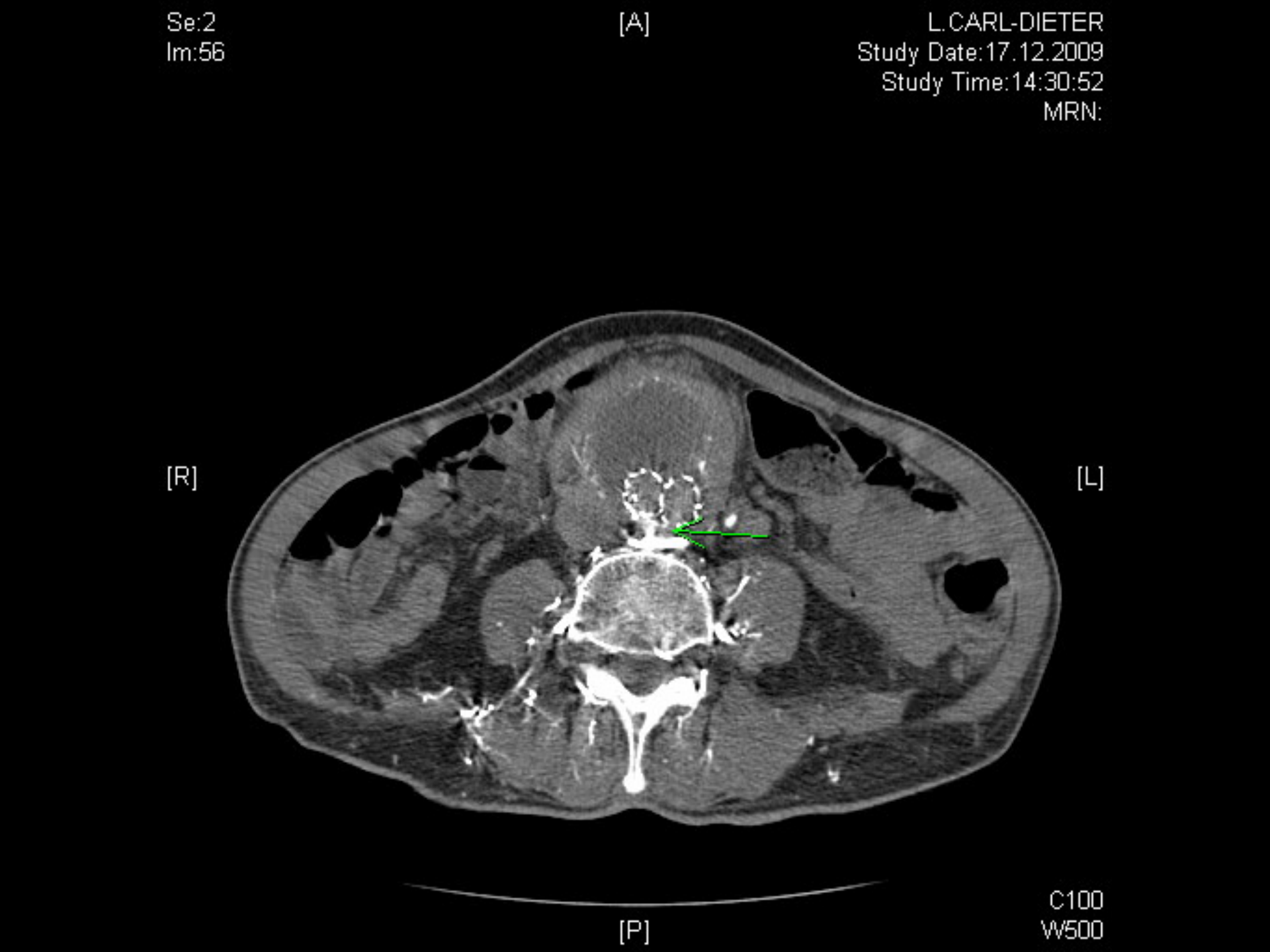
Diag.: Stenose li AIE, AFC bds, AFS bds, exzentrische Stenosen durch Kalkplaques
Th: Operativ (Gefäßchirurgie), intraoperativ
Stent re AFS dist.

Endoleak Aortenstent



Pat.: M., 70 J
Klin. Ang.: Aortenstent bei BAA, Endoleak

Se:2
Im:59
[A]
L.CARL-DIETER
Study Date:17.12.2009
Study Time:14:30:52
MRN:
[R]
[L]
[P]
C100
W500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L.CARL-DIETER
Study Date:17.12.2009
Study Time:14:30:52
MRN:
[R]
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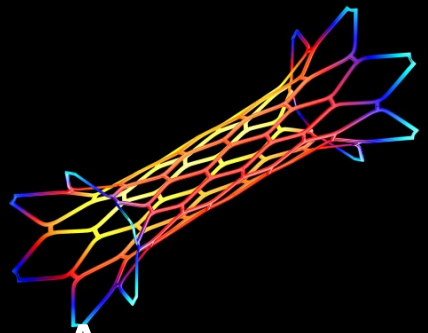
C100
W500

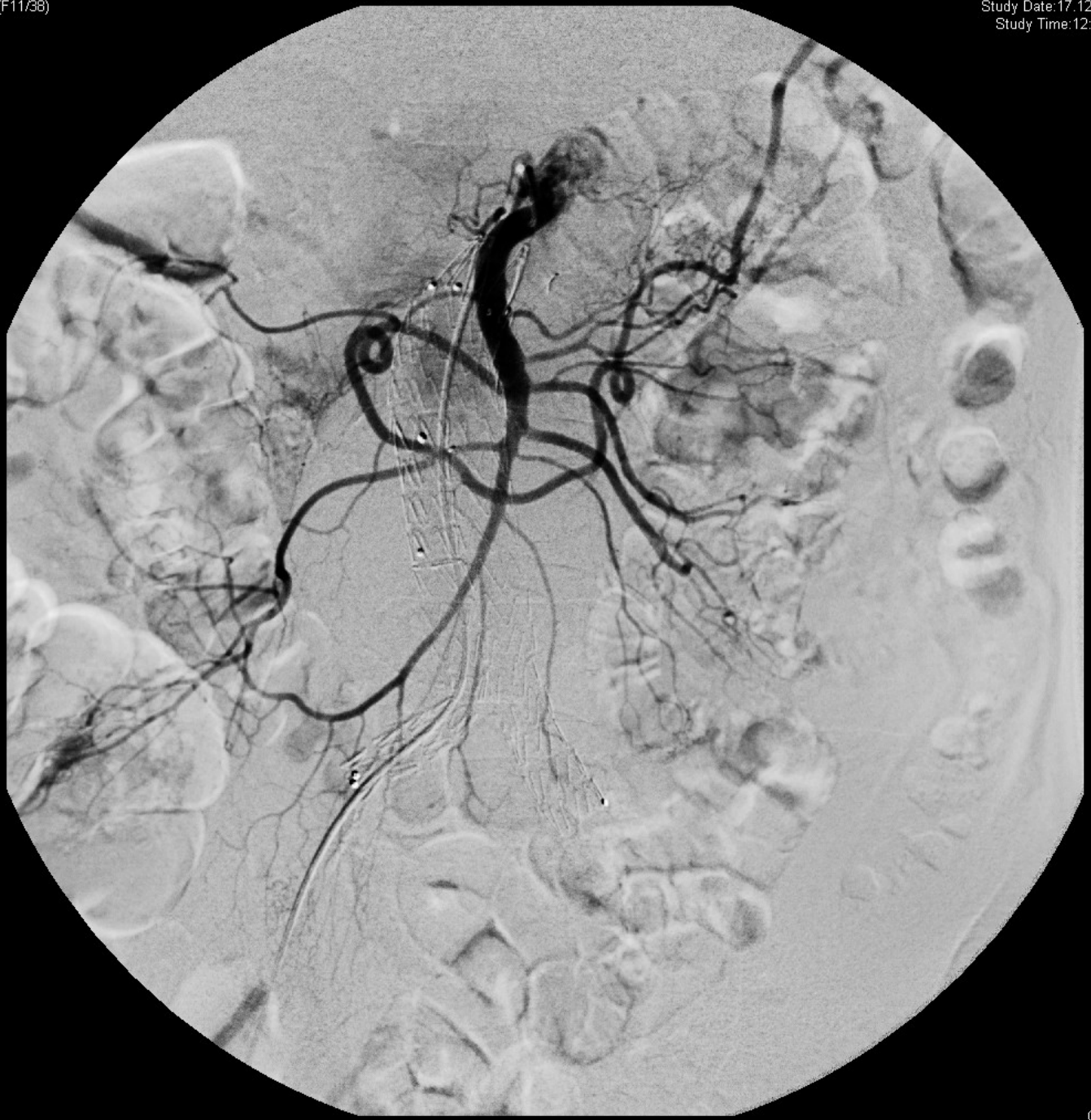
Verschluss Endoleak

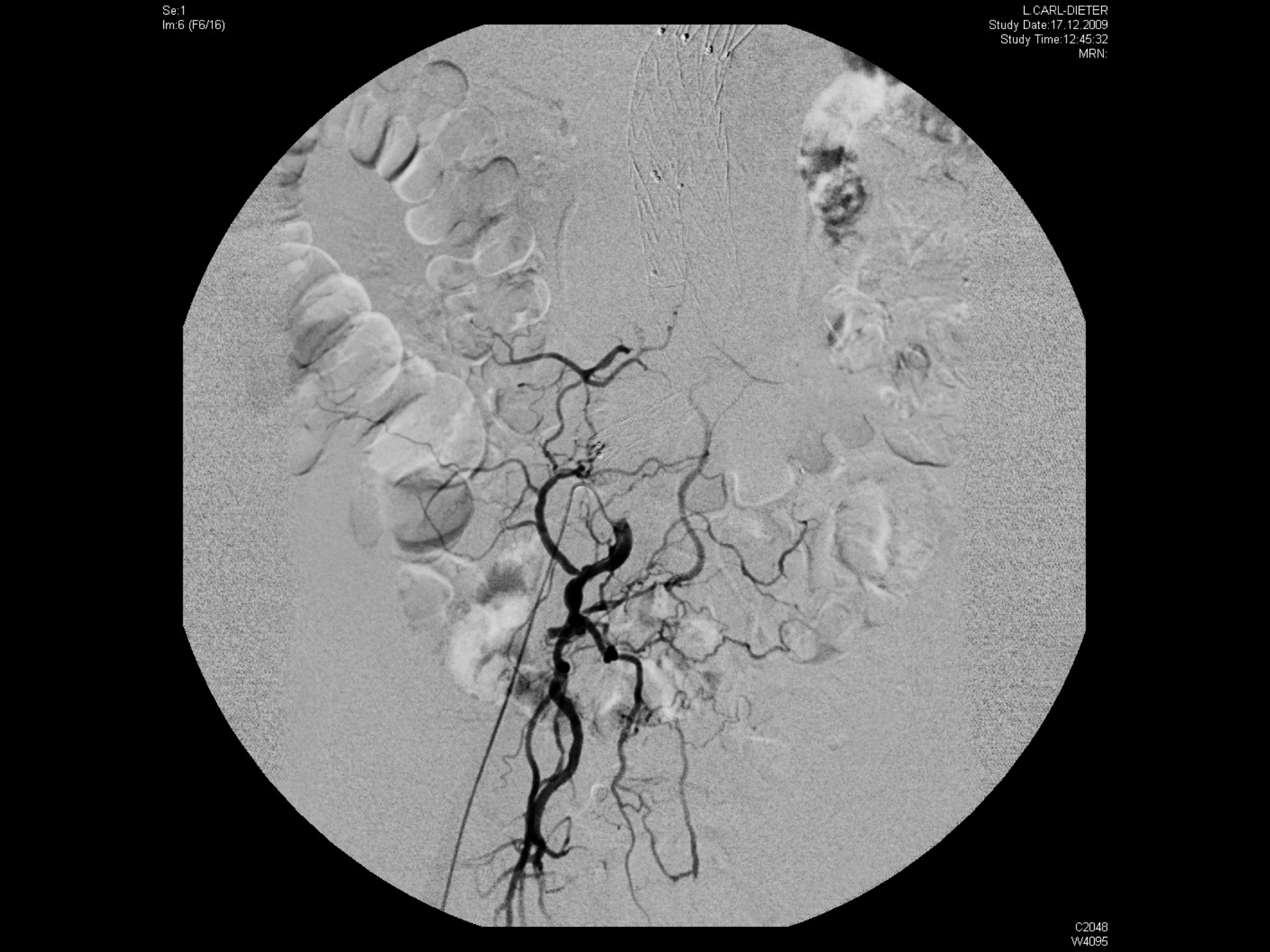


Diag.: Reperfusion des BAA 1. über A. mesenterica sup., Riolansche Anastomose, A. mesenterica inf., 2. über A. sacralis med. (+ Lumbalarterien LWK4), re A. iliaca int.
Th.: Coiling A. mesenterica inf. (Platinspirale 6mm/10cm), Coiling + Embolisation Lumbalarterien LWK4 (3 Spiralen + Partikel 500-710µm), Embolisation Muskelast AII (Partikel 500-710µm)

L.CARL-DIETER
Study Date:17.12.2009
Study Time:12:45:32
MRN:

L.CARL-DIETER
Study Date:17.12.2009
Study Time:12:45:32
MRN:

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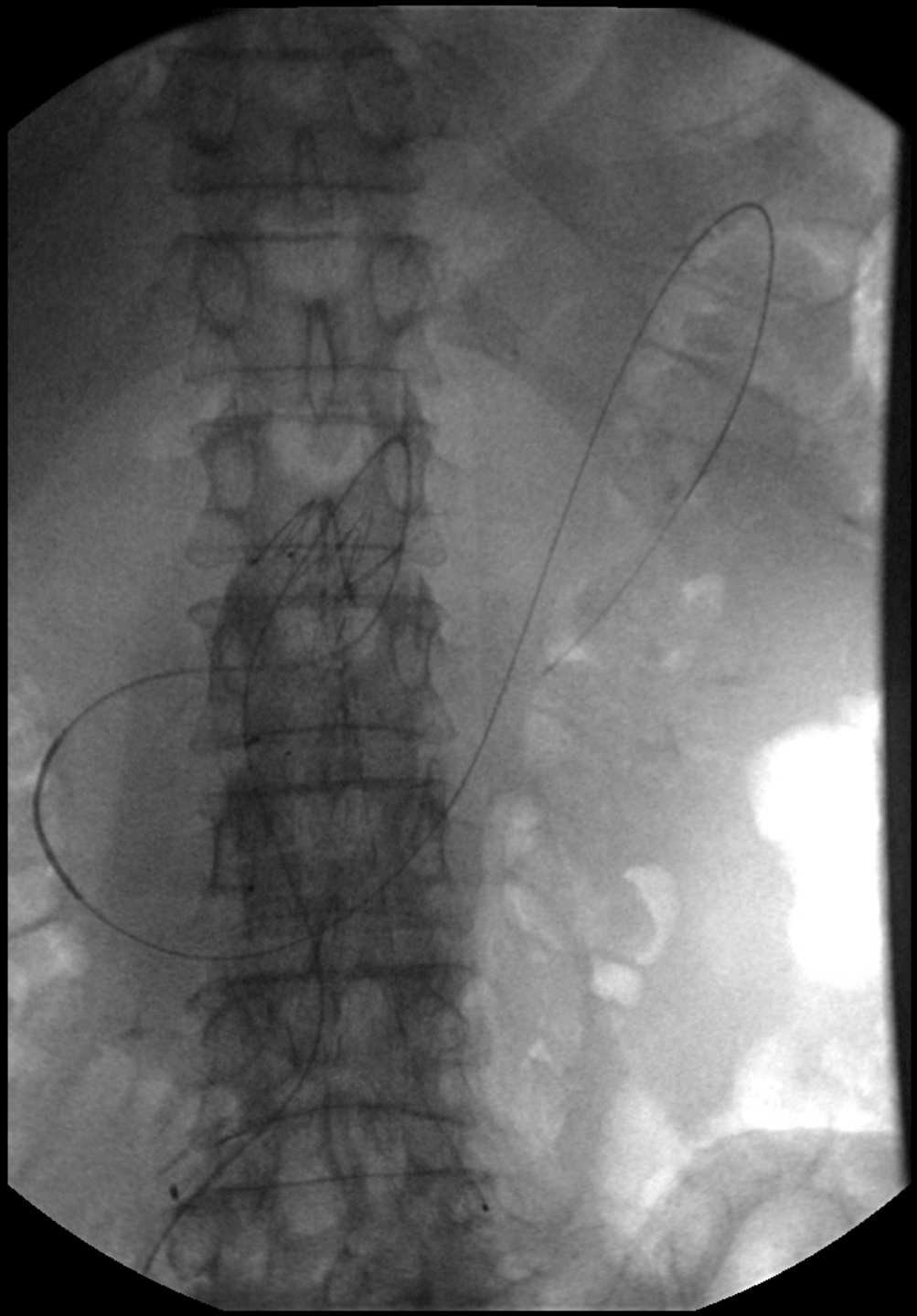
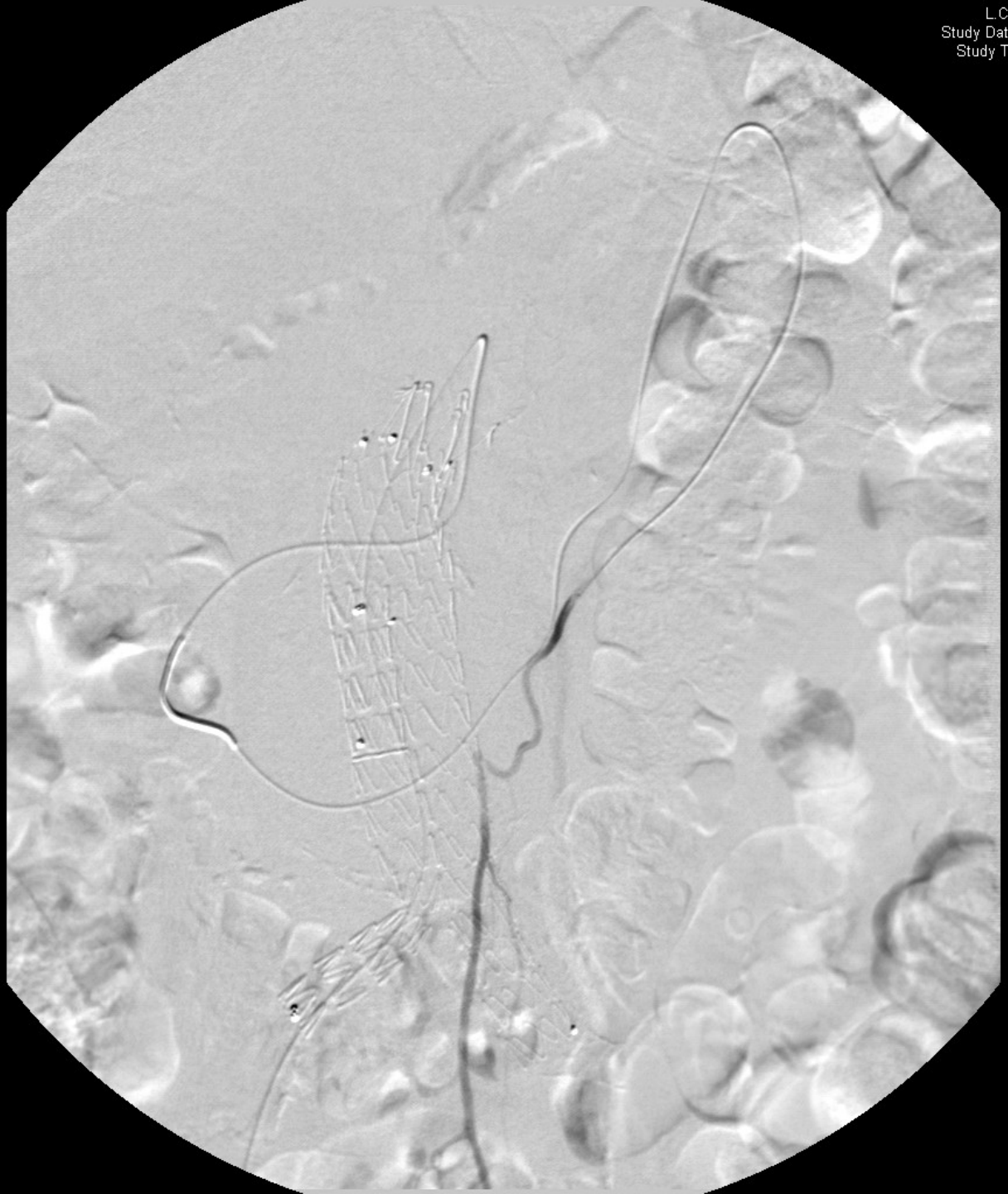
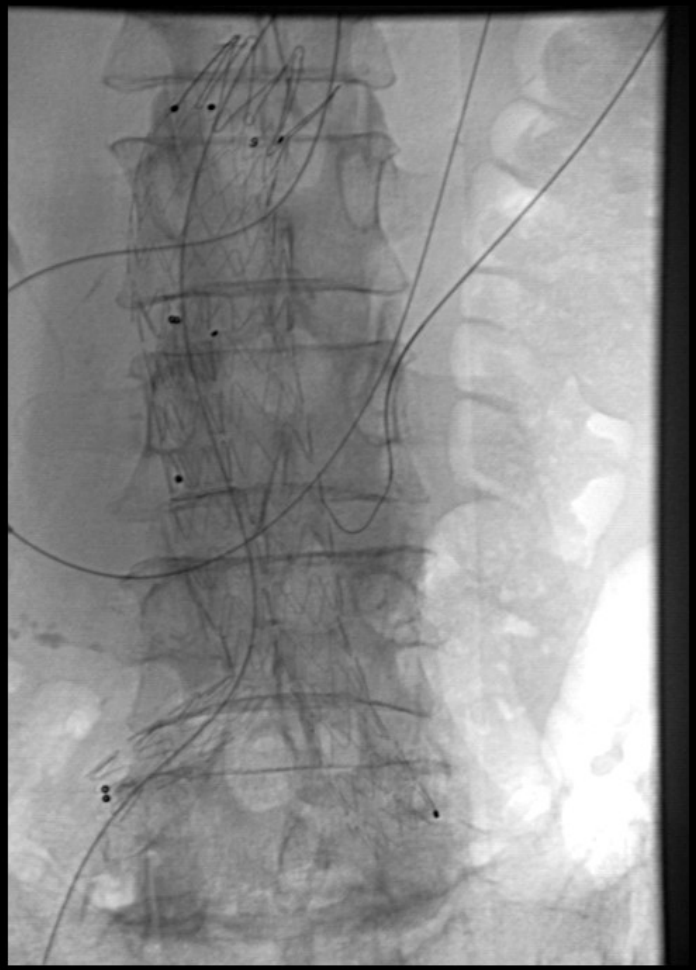
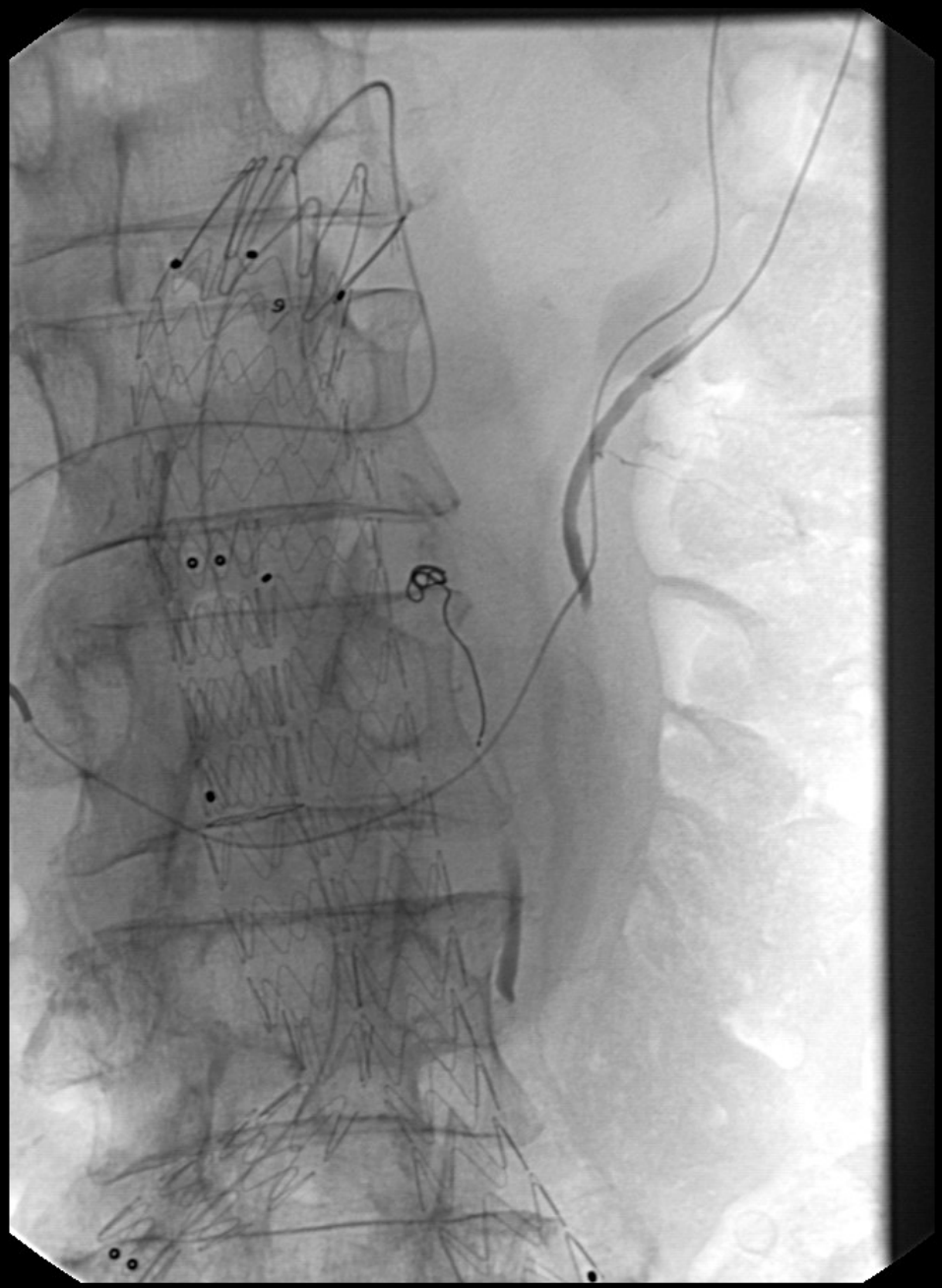
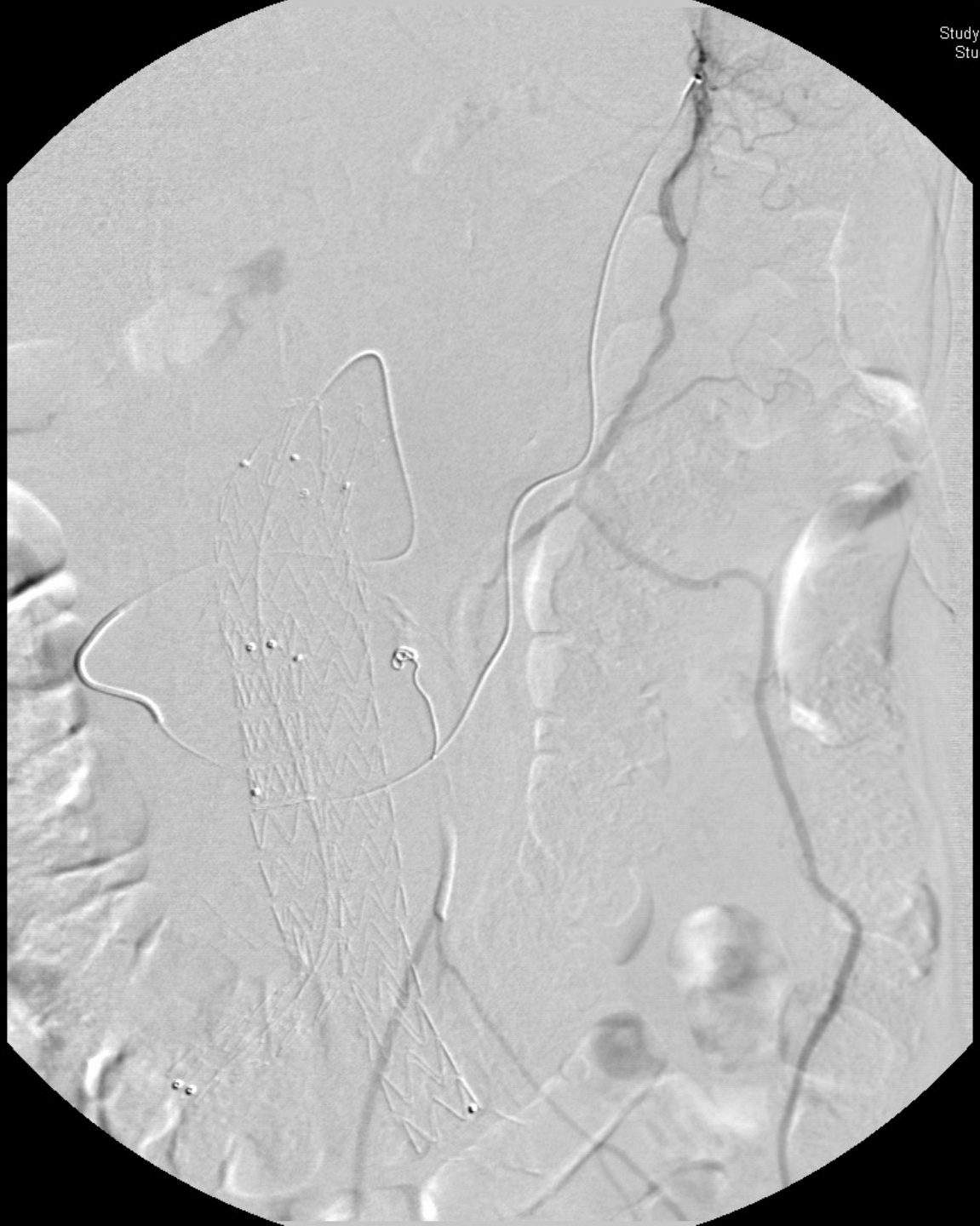
Im:6 (F6/16)
L.CARL-DIETER
Study Date:17.12.2009
Study Time:12:45:32
MRN:
C2048
W4095







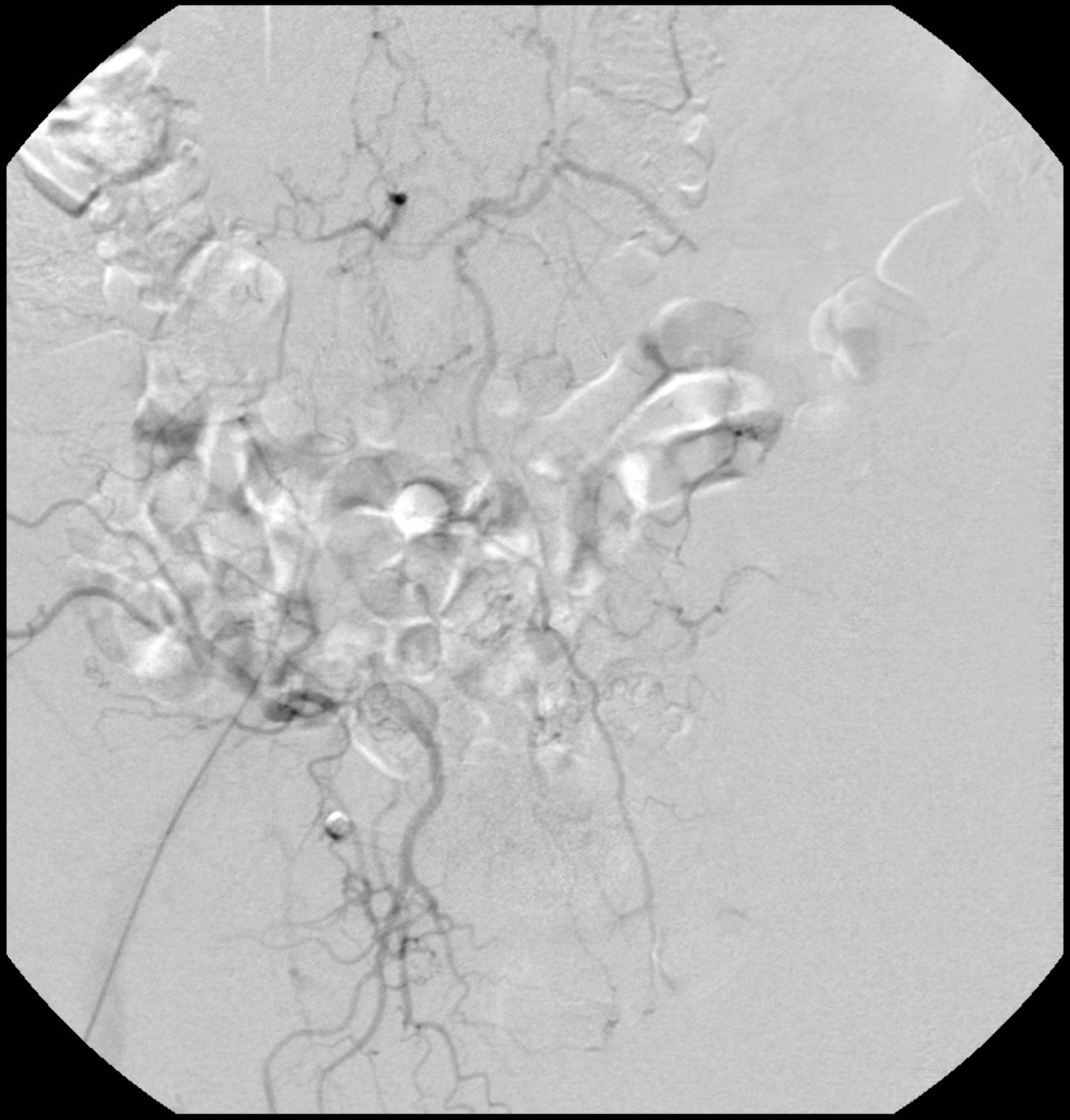




Se:1000
Im:42 (F1/1)
L.CARL-DIETER
Study Date:04.02.2010
Study Time:07:40:43
MRN:
C512
W1024

L.CARL-DIETER
Study Date:04.02.2010
Study Time:07:40:43
MRN:

L.CARL-DIETER
Study Date:04.02.2010
Study Time:07:40:43
MRN:



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L.CARL-DIETER
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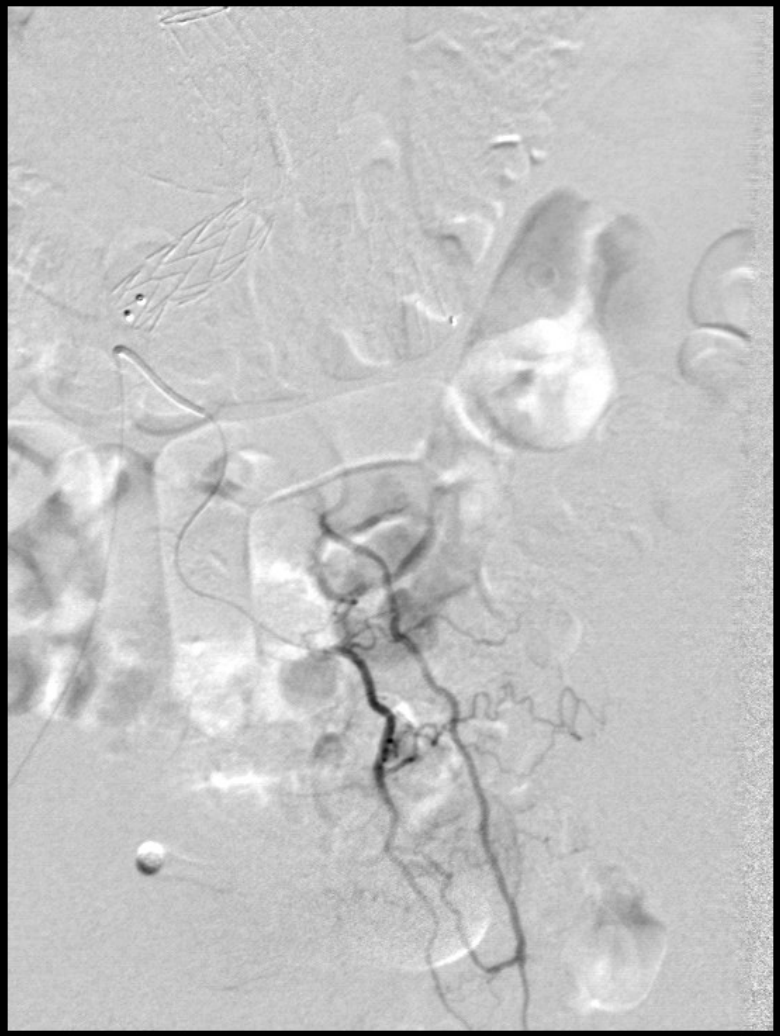
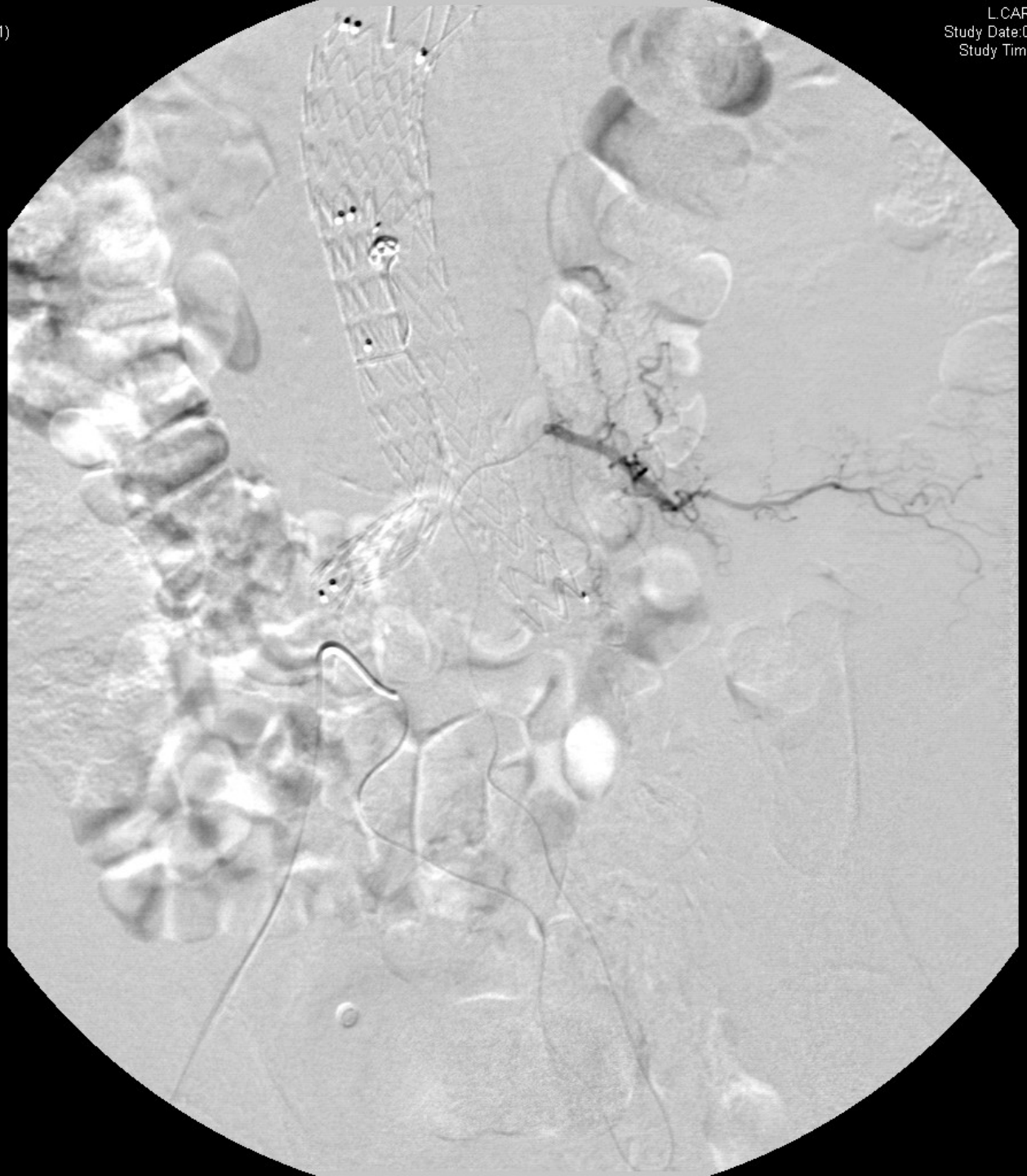
Study Time:07:40:43
MRN:



C512
W1024


Se:1000
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L.CARL-DIETER
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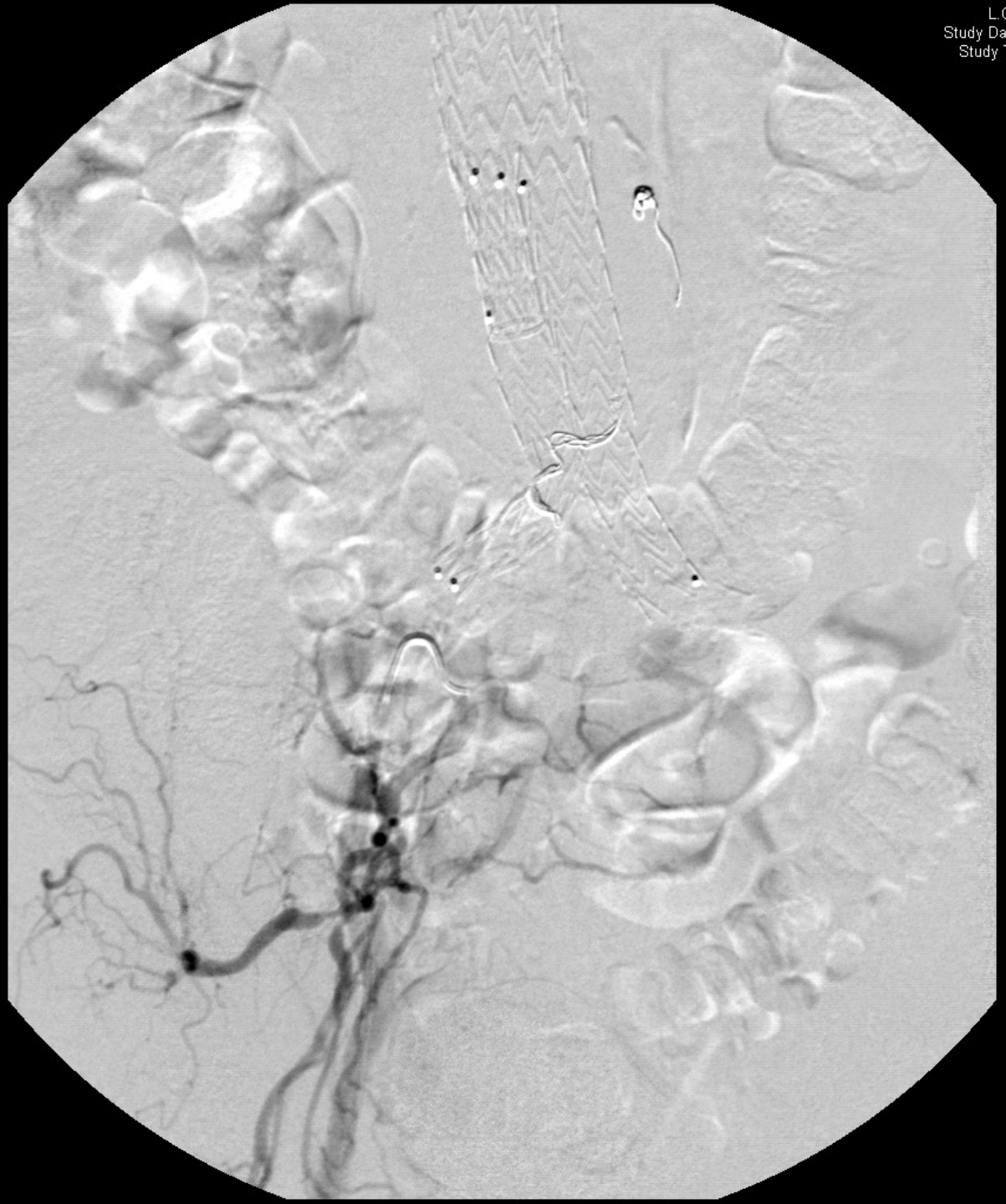
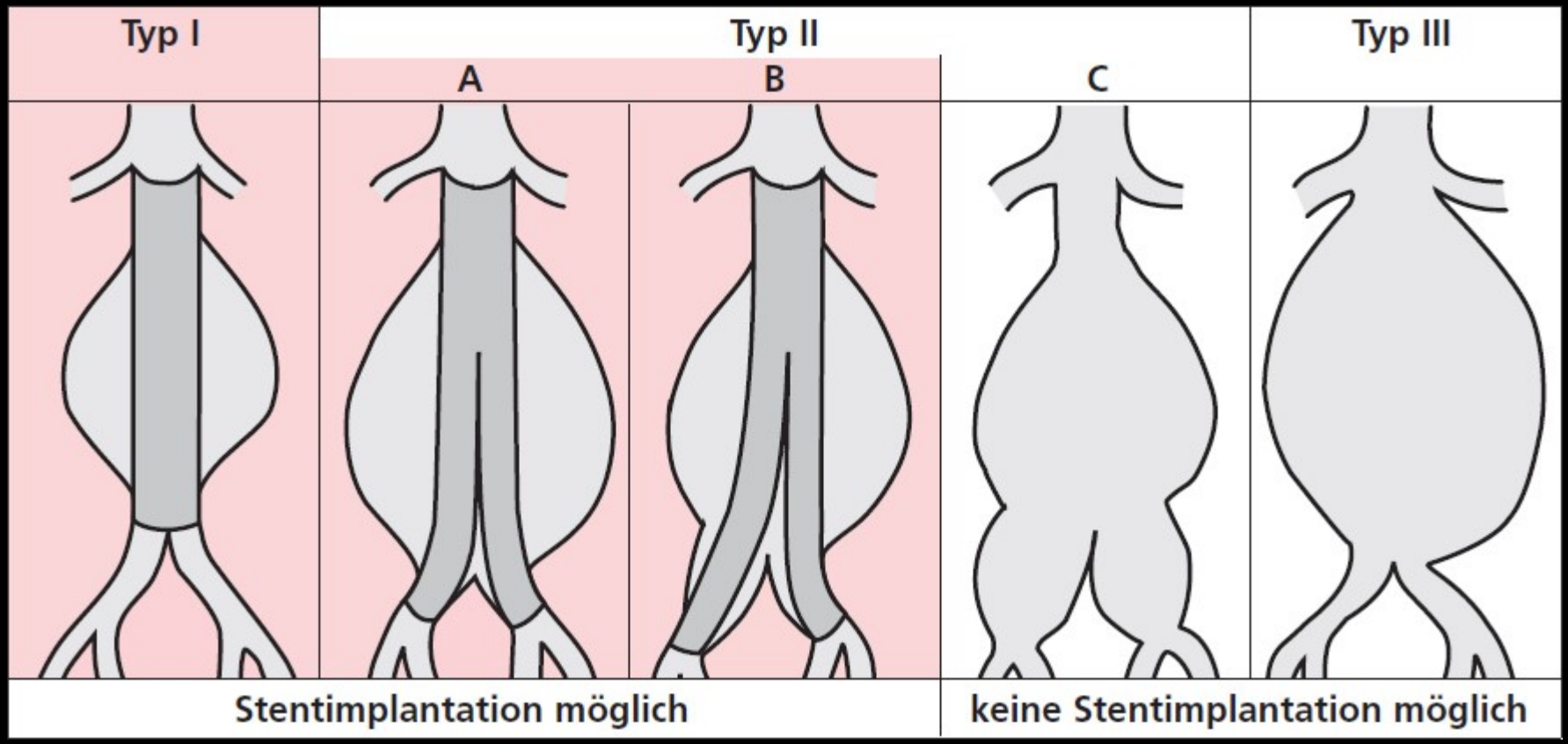
Study Time:07:40:43
MRN:
C512
W1024


Se:1000
Im:64 (F1/1)
L.CARL-DIETER
Study Date:04.02.2010
Study Time:07:40:43
MRN:
C512
W1024

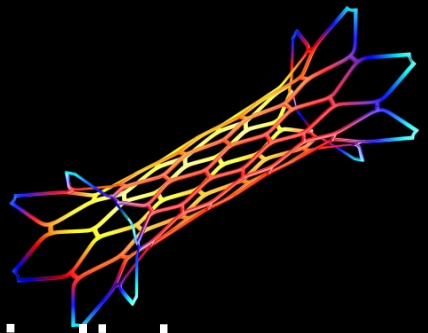
DON‘T PANIC!

020733278
11-Jan-1930
6-Mar-2002
4:49:51.79
Manipulated, MIP THIN
Spin: 5
Tilt: 6
PF
A
L 50.0
120 ml Flow 5

Klassifikation des BAA



Allenberg JR et al., „Infrarenal abdominal aortic aneurysm: morphological classification as decision aid for therapeutic procedures“, Zentralbl Chir 1996; 121: 721-726



Endovaskuläres Vorgehen nicht möglich:

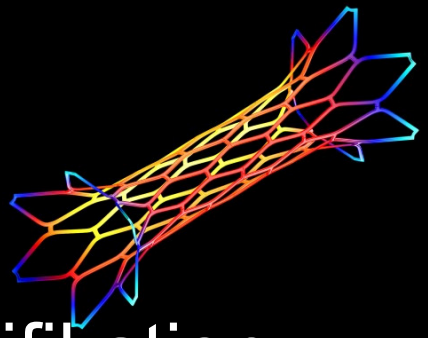
- starkes Kinking der Aorta
- starkes Kinking der Beckenarterien
- bilaterale hochgradige Stenosierungen der Beckenarterien

Pfeiffer T, Sandmann W, „Die endovaskuläre Therapie des abdominalen Aortenaneurysmas“, Dtsch Ärztebl 2002; 99: A1160-1167 [Heft 17]

Teschner M, Dragojevic D, „Therapie infrarenaler Bauchaortenaneurysmen“, Dtsch Ärztebl 1997; 94: A2820-2827 [Heft 43]

Allenberg JR, „Current status of abdominal aortic aneurysm therapy“, Langenbecks Arch Chir 1997; 382: 117-118

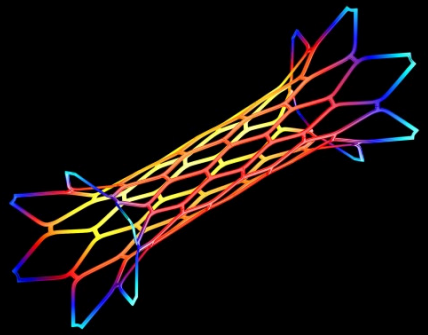
Take Home Points · · ·



- S3-Leitlinie zur pAVK, TASC-Klassifikation
- TASC Läsion Typ A-C: Intervention möglich
- Typ C aufgrund neuer längerer biegsamer Stent(graft)s auch bei Stenosen > 10 cm
- Typ D: für erfahrene Radiologen möglich

- Primär Stent bei Verschluss und exzentrischer Stenose (Kalkplaque)

Take Home Points · · ·



- Cutting balloons Wahl bei narbigen Stenosen, z.B. Bypass-Anastomosen
- Aneurysmen: Schnittbild zur Abklärung thrombotischer Randsaum, Kalzifizierung
- Aorta: interventionell machbar, jedoch zunehmend Domäne der Gefäßchirurgie

www.awmf.org · www.guideline.gov · www.leitlinien.de · www.tasc-2-pad.org

www.saint-kongress.de