

Interventionell radiologi

Behandlande åtgärder i anslutning till -
och med ledning av - bildgivande metoder

”Minimally invasive therapy”

Interventionell radiologi

Vaskulär

Icke-
vaskulär

Endovaskulär radiologi

- **FÖRBÄTTRA
BLODFLÖDE:**

- PTA

- Trombolys

- **STÄNGA
BLODFLÖDE:**

- Embolisering av kärl

- Stänga aneurysm

PTA = perkutan transluminal angioplastik

- Ballongdilataation
- Stentning
- Stentgraft
- Laser
- Mekanisk borr

PTA –var?

- Carotis
- Kranskärl
- Njurartärer
- Bukartärer
- Aorta
- Perifera kärl
- Dialysfistlar
- Vener

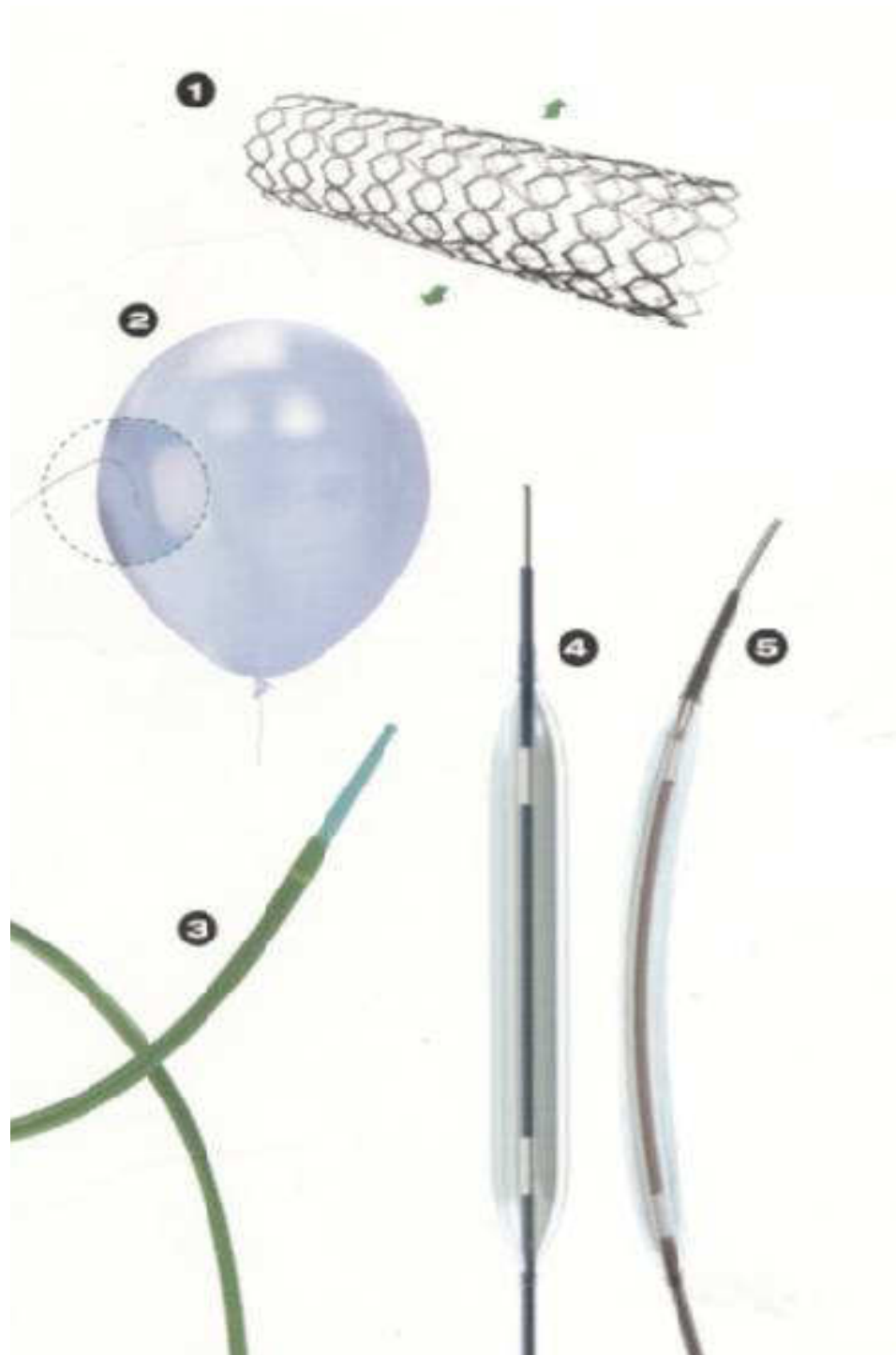
PTA – när?

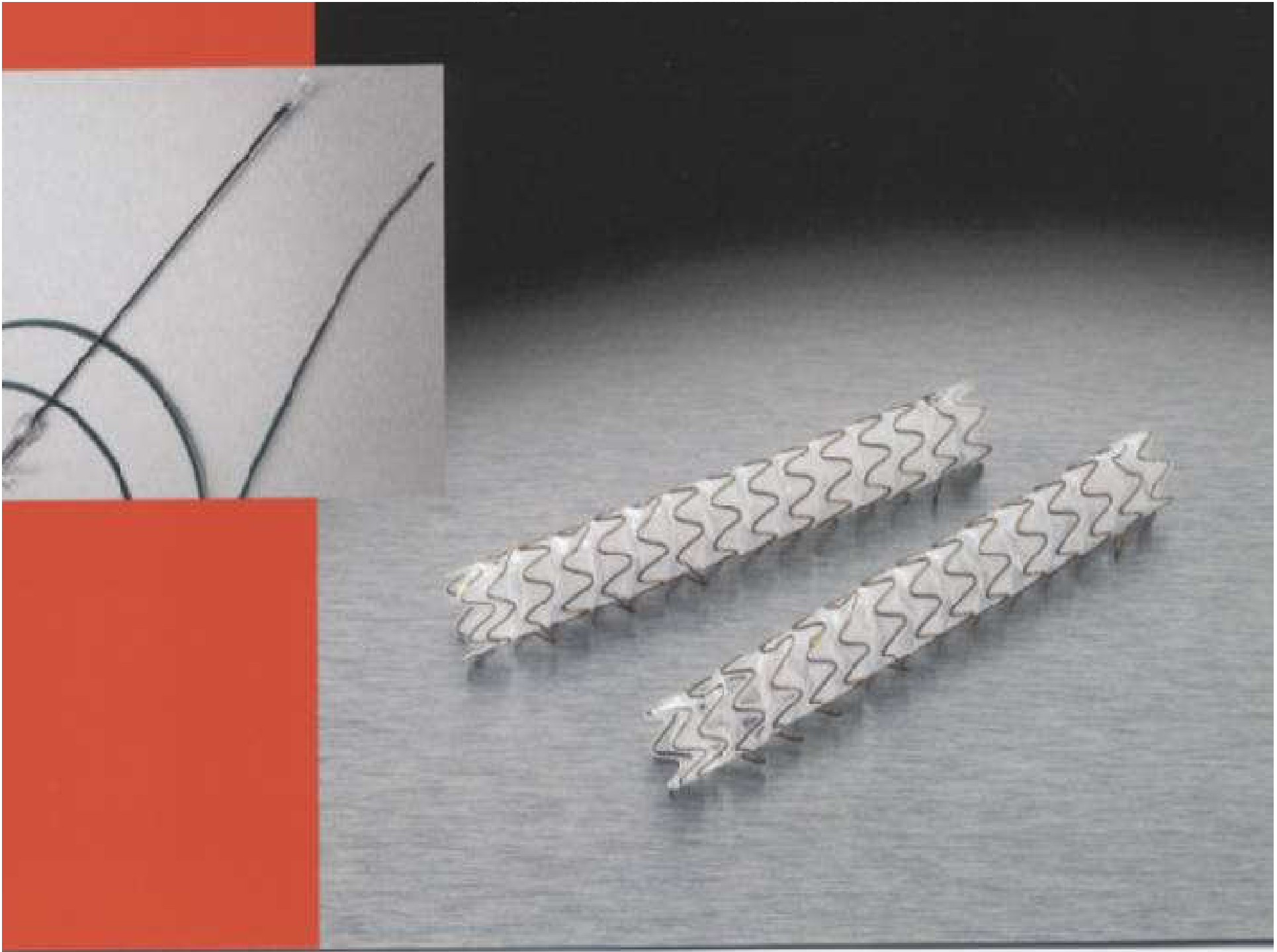
Beroende på organ:

- Stroke - TIA
- Angina – infarkt
- Bukangina
- Njursvikt – svår hypertoni
- Claudicatio –kritisk ischemi
- Venstas – pga t ex tumörkompression

PTA i perifera kärl – metoder?

- Ballong
- Stent
- Stentgraft = endoprotes
- Laser
- Mekanisk borr



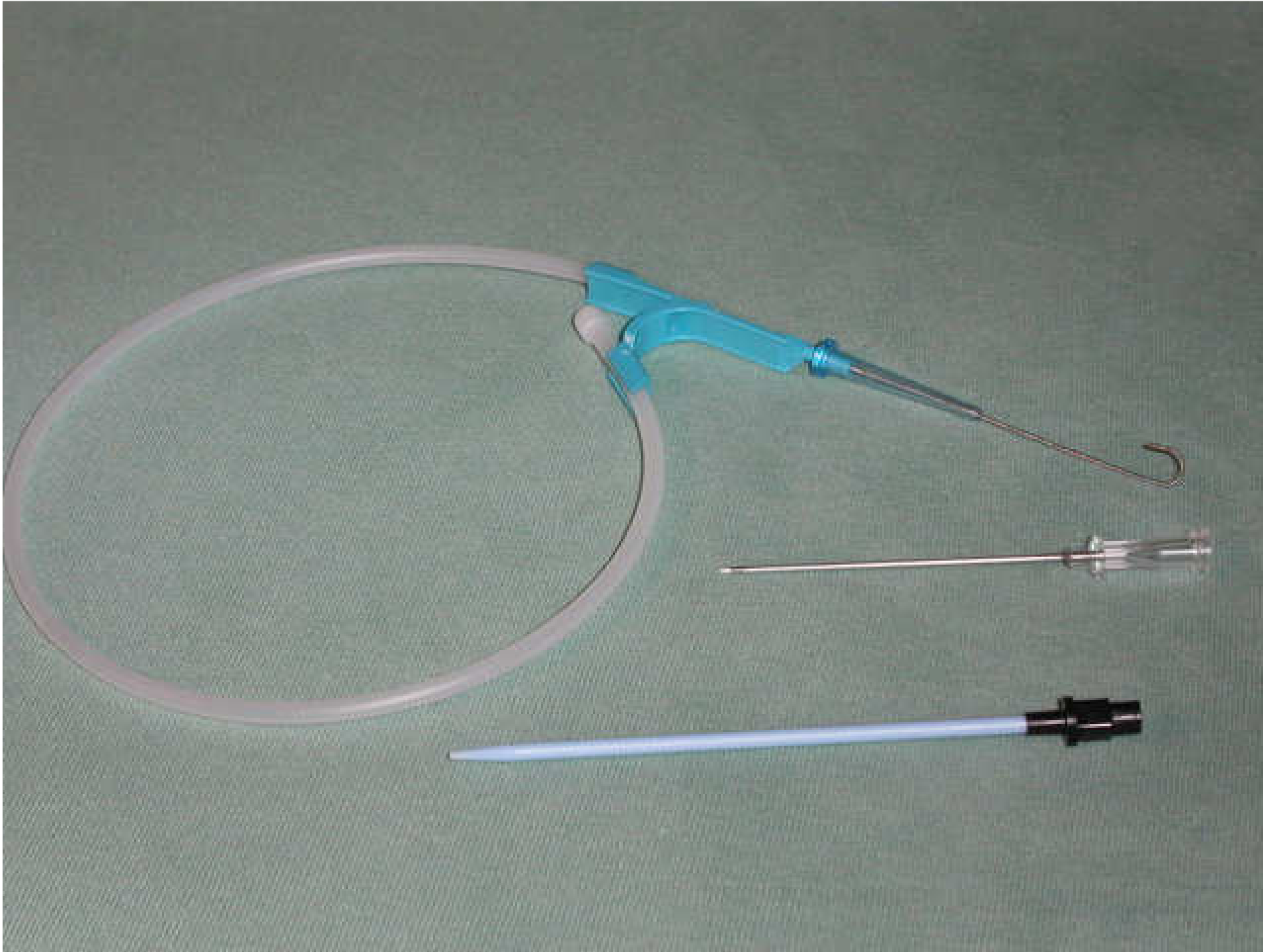


PTA - teknik

- Vidga stenoser
 - Ballongdilatation
 - Stentning, primär eller sekundär
- Öppna ocklusioner
 - Ballongdilatation, subintimalt (SAP)
 - Stentning, ev. stentgraft

PTA - teknik

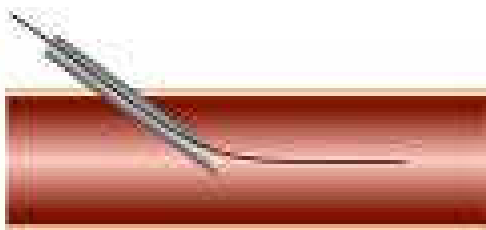
- Lokalanestesi
- Hudincision
- Kärlpunktion med nål
- Ledare in i kärlet – nål ut
- Introducer över ledaren in i kärlet
- Kateter över ledaren genom introducer in i kärlet



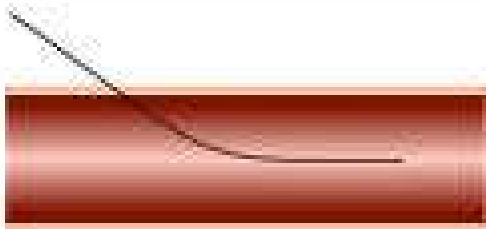
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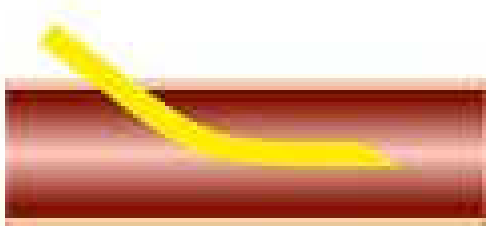
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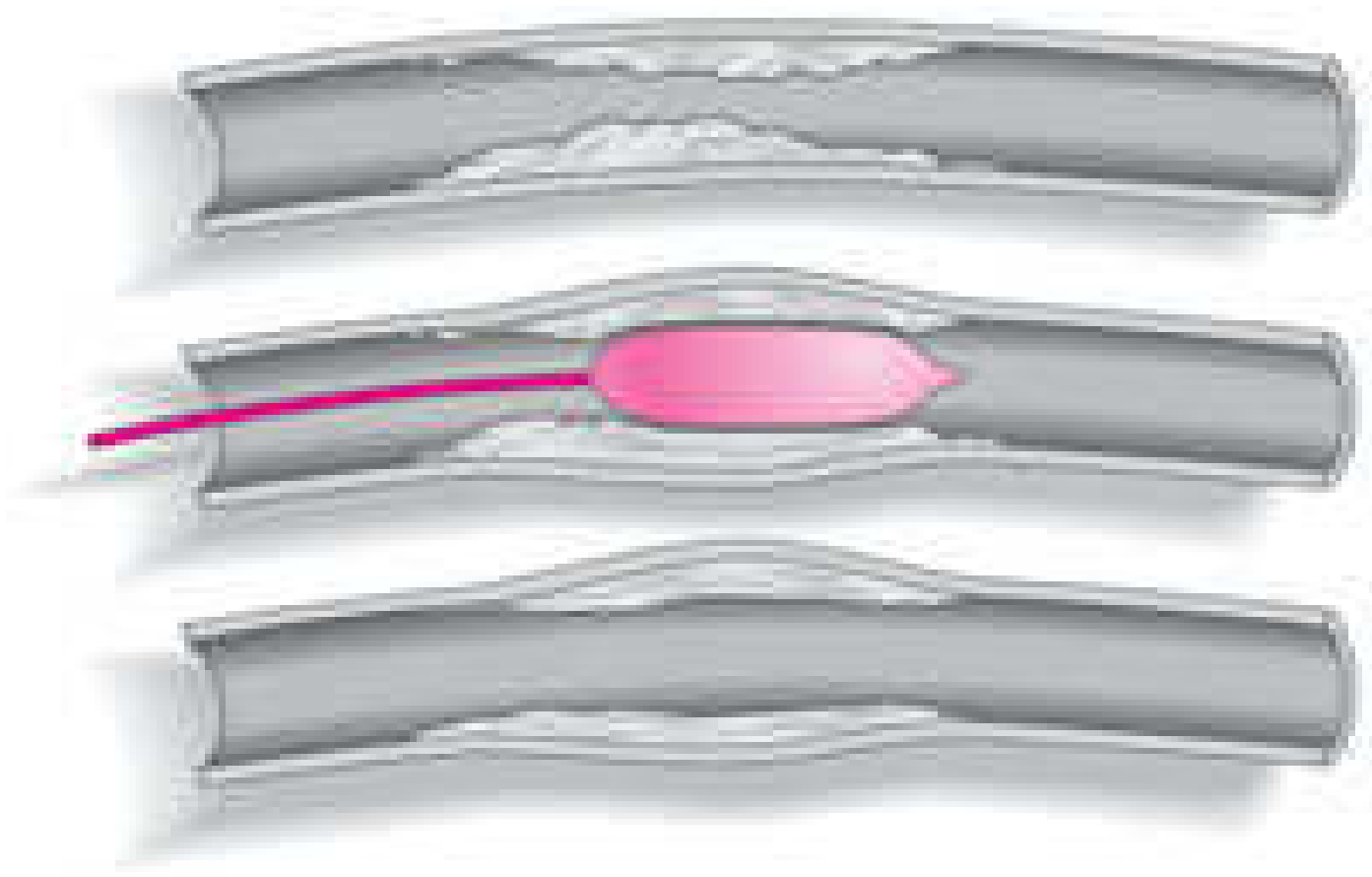


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DX

FÖRE INTERVENTION

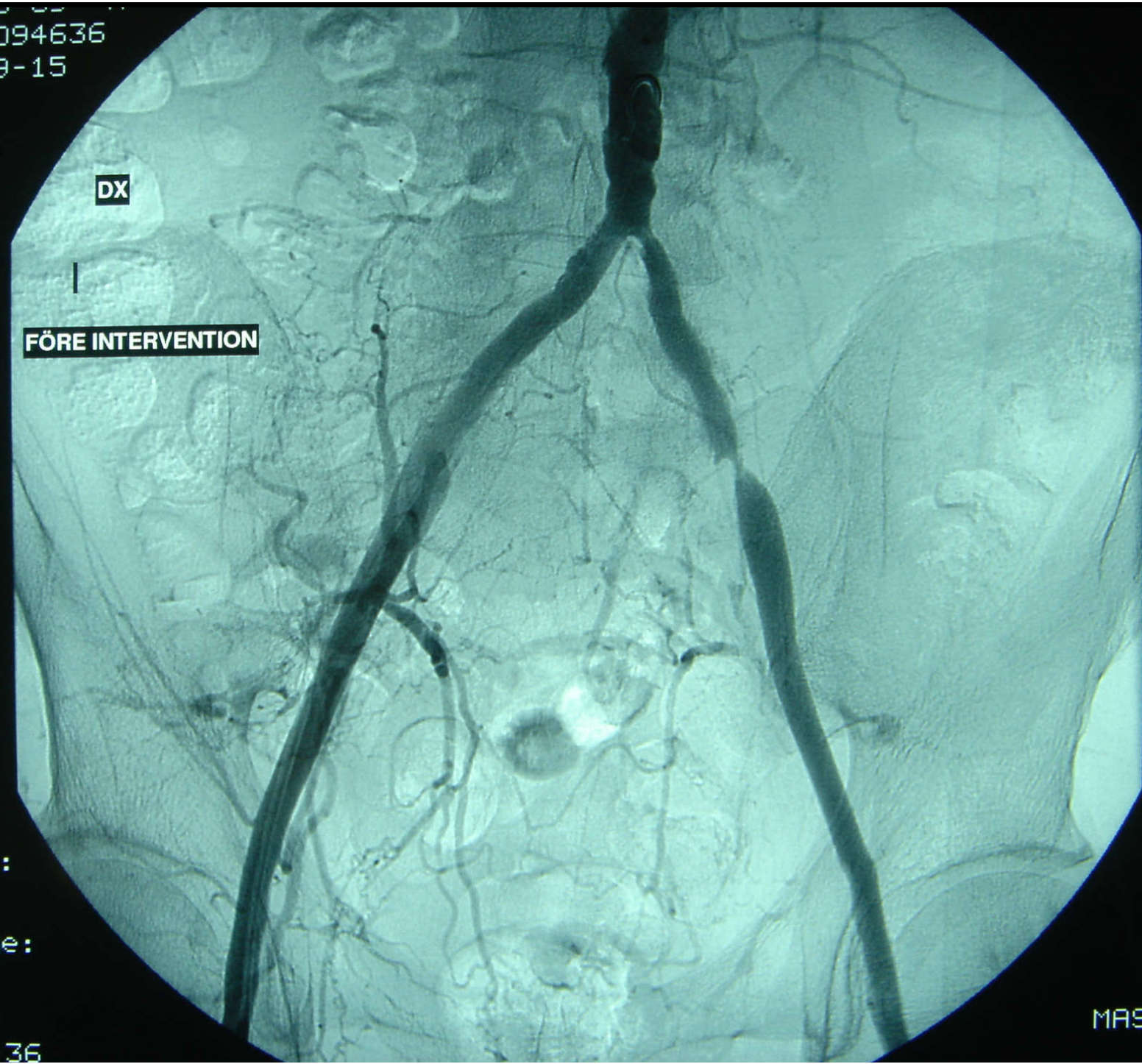


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DX

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EFTER INTERVENTION

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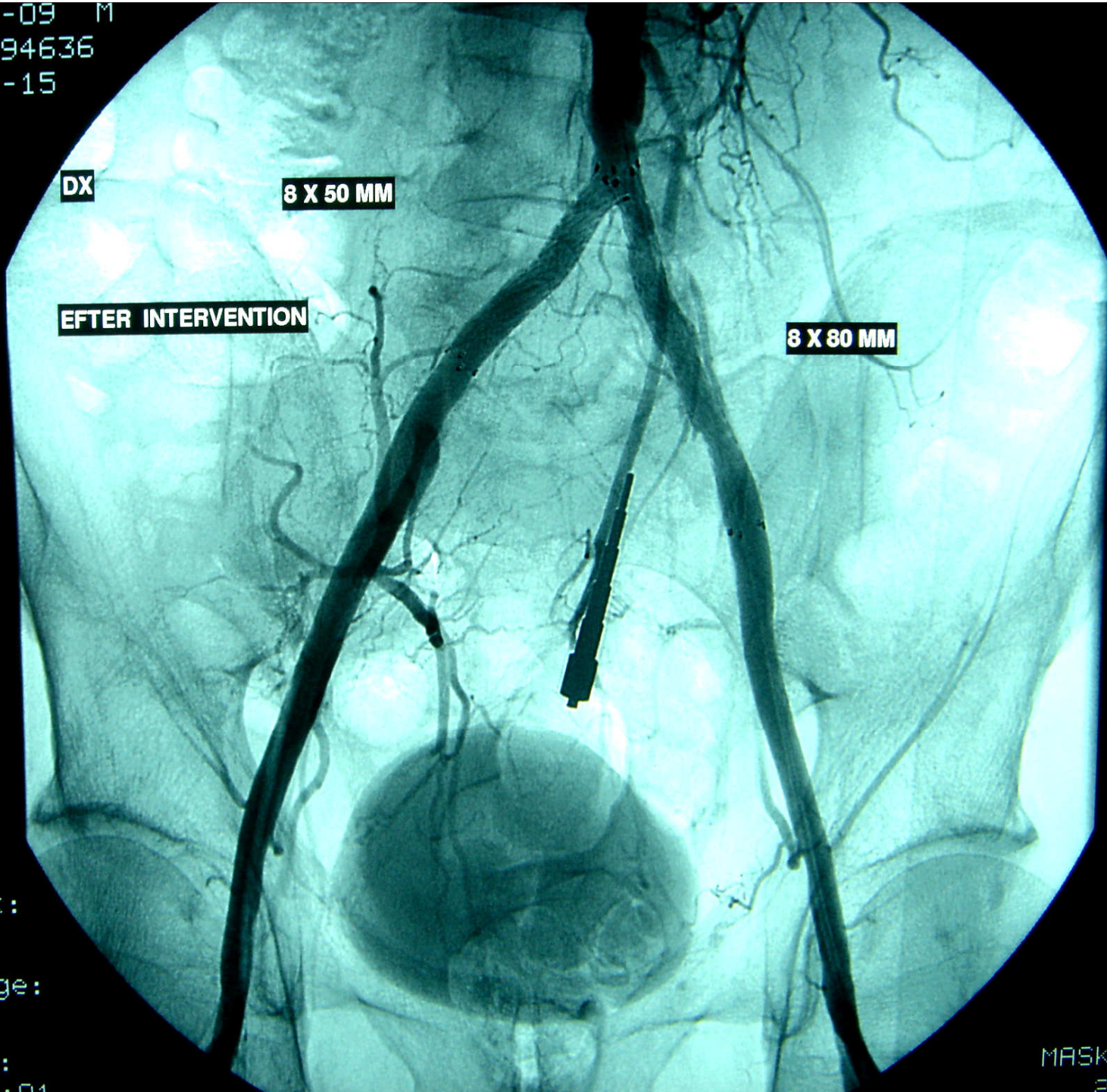
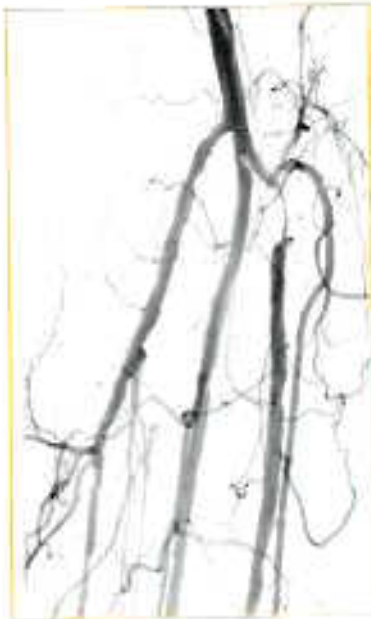




Figure 1:
Long filiform anterior tibial artery stenosis with restricted blood flow
Expansion of Peripheral Cutting Balloon™ with visible arteriotomes (dynamic flat detector technology imaging)
Dissection and optimal flow following PTA



Trombolys

vid trombos eller emboli

- Trombaspiration
 - Trombdestruktion
 - Actilyseinfusion
-
- Ev. PTA

Vaskulär radiologi

- **FÖRBÄTTRA
BLODFLÖDE:**

- PTA

- Trombolys

- **STÄNGA
BLODFLÖDE:**

- Embolisering av kärl

- Stänga aneurysm

Embolisering – när?

- **Stoppa blödning**
 - Magtarmblödning
 - Mjältblödning
 - Bäckfraktur
 - Postpartumblödning
 - Kärlskada vid operation, infektion, tumör
- **Stoppa flöde i blodkärl**
 - AV-shuntar – traumatiska, kirurgiska
 - Varicocele
 - Kärlmissbildningar

Embolisering - teknik

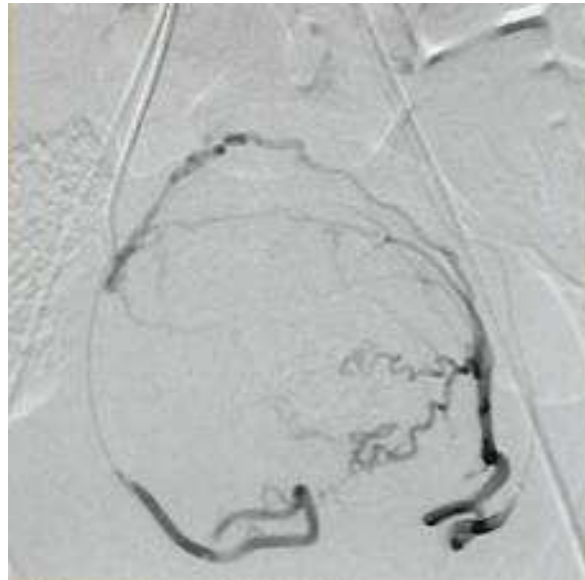
- Coils
- PVA-partiklar
- Gel-foam - Spongostan
- Klister
- Alkohol

UFE = UTERINE FIBROID EMBOLIZATION

Embolisering av uterusmyom

Uterusartärerna stängs med PVA-

partiklar



EMBOLISERINGSMATERIAL:

Resorberbara:

Autologt koagel – kan användas t.ex. i stickkanal

Spongostan, GelFoam – stoppa blödningar, t.ex. vid postpartum blödning

Skärs i små bitar, blöts upp i kontrast i injiceras genom kateter

Icke-resorberbara:

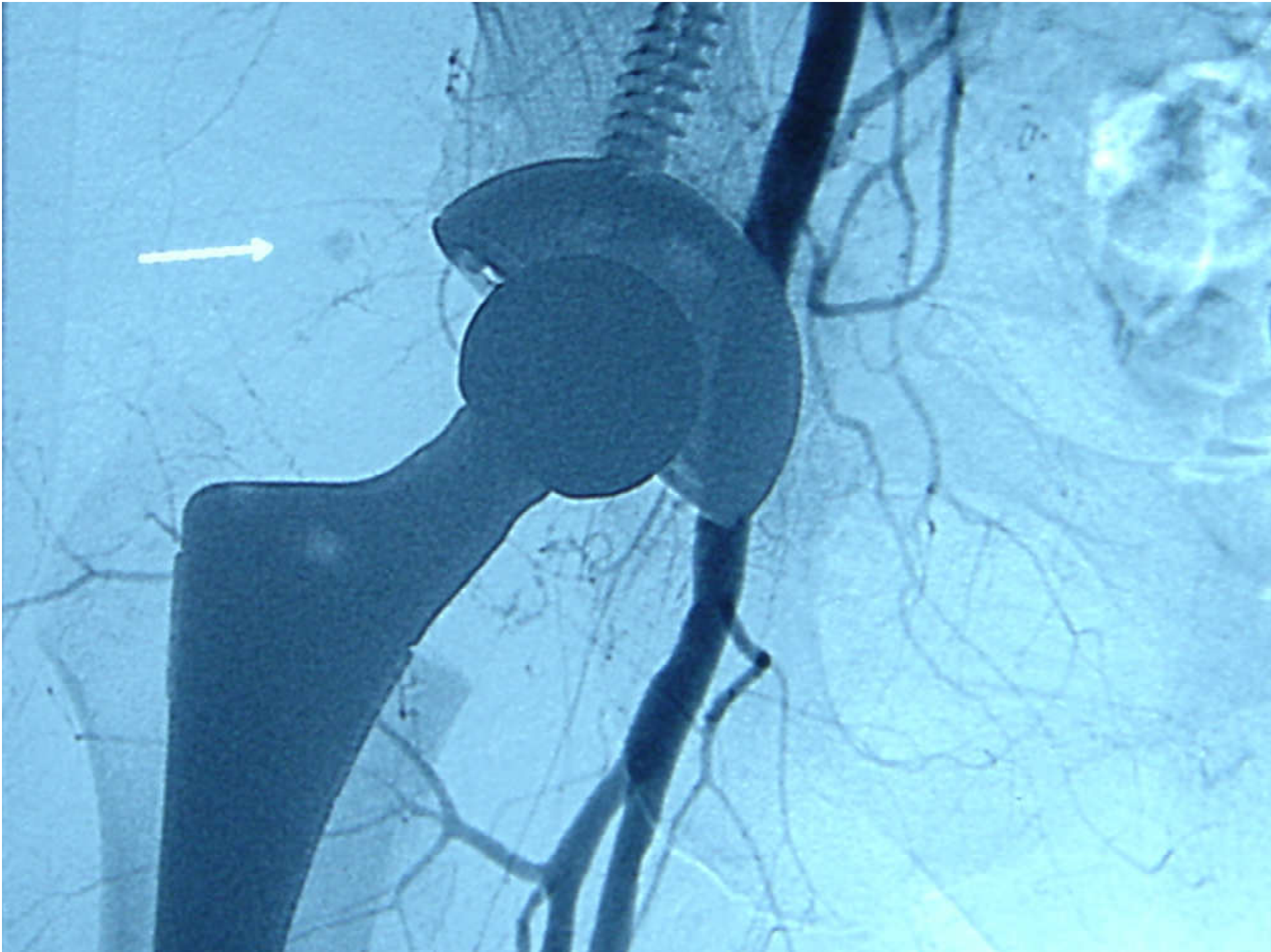
PVA-partiklar, 100 – 1200 μm – UFE, tumörer, tarmlödning,

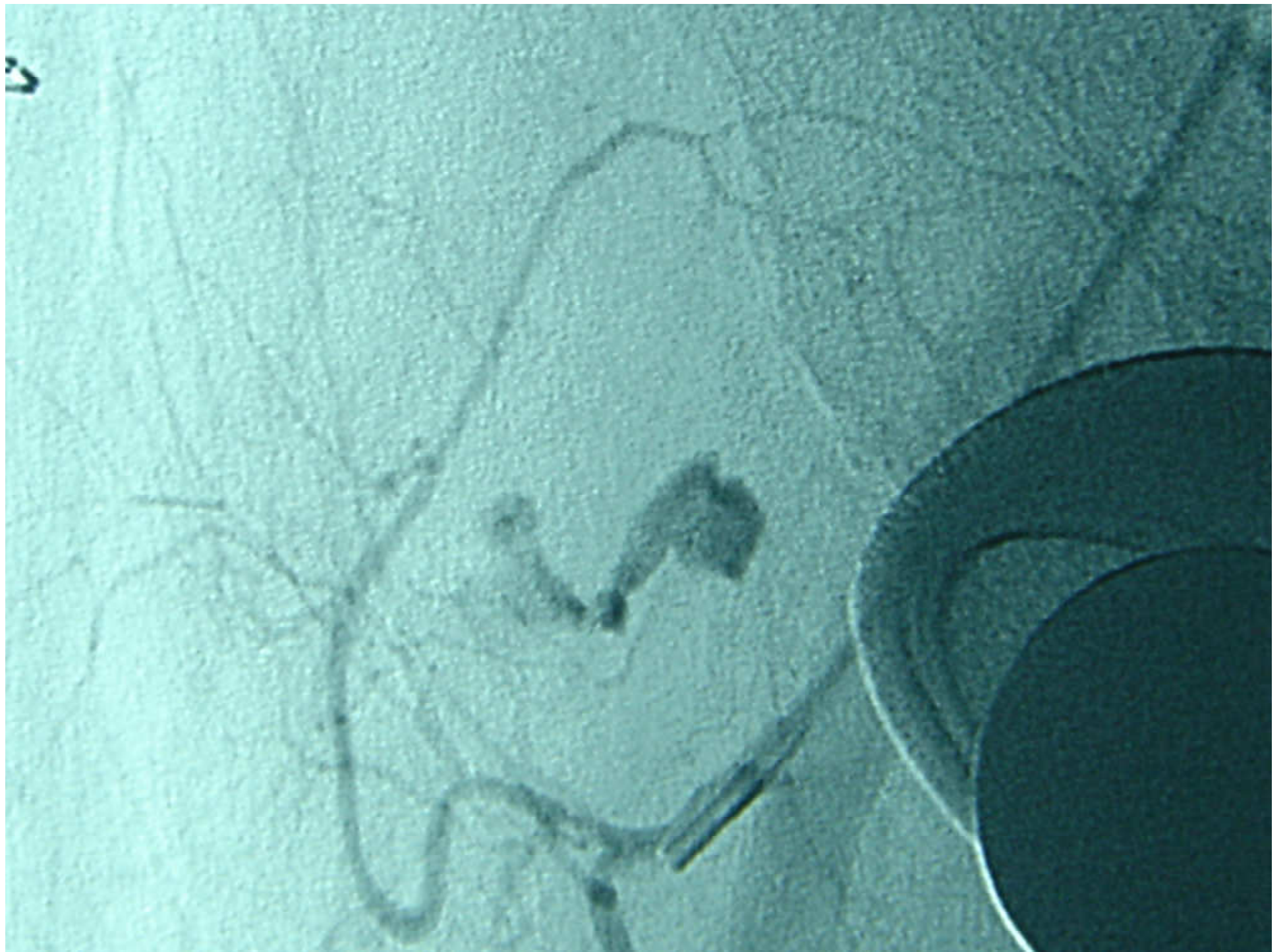


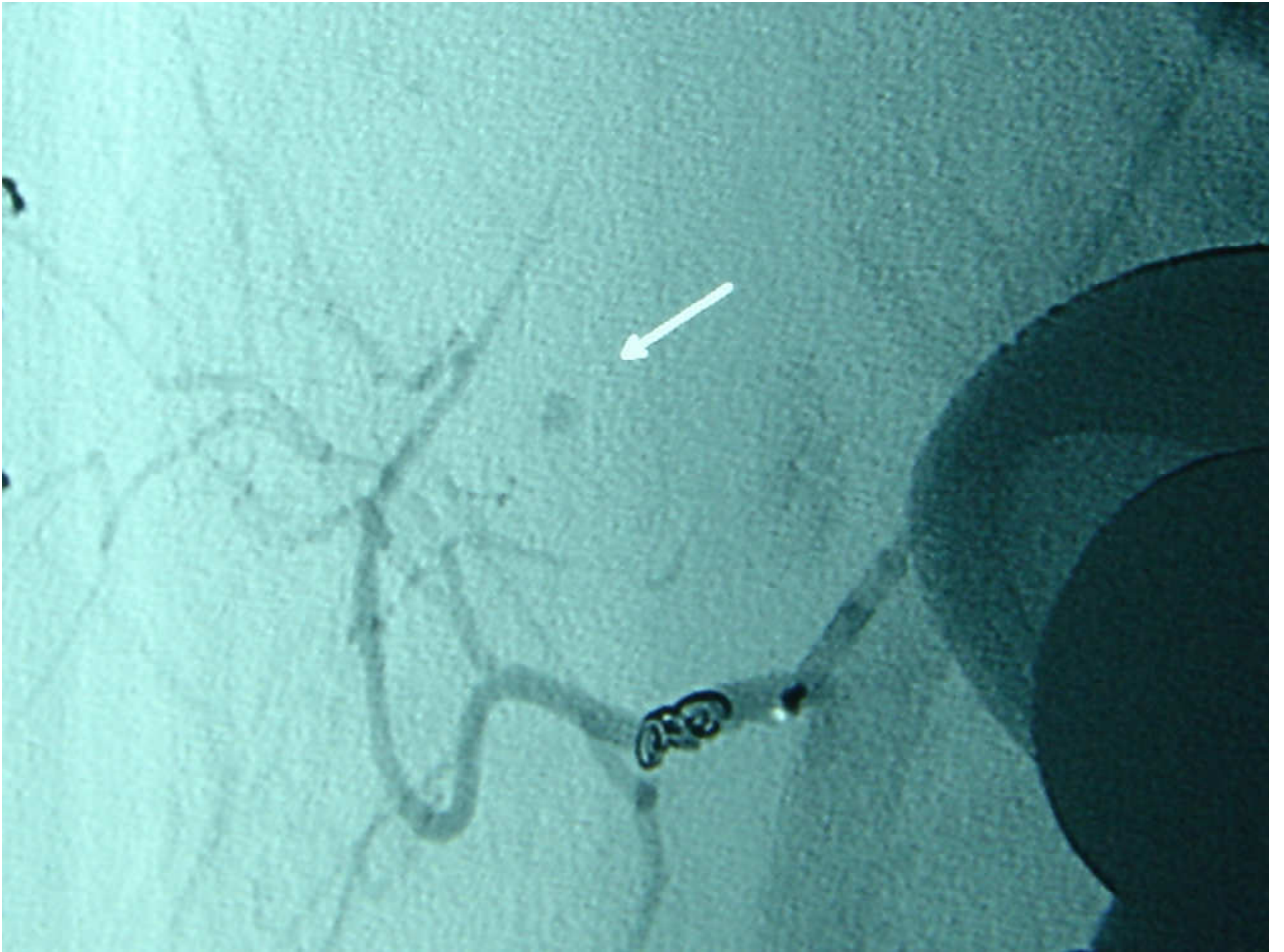
Större partiklar väljs för att förhindra nekros av frisk vävnad, medger kollateralcirkulation

**Coils – stoppa blödning, tumörembolisering
aneurysm,
coils finns i olika storlekar och former**



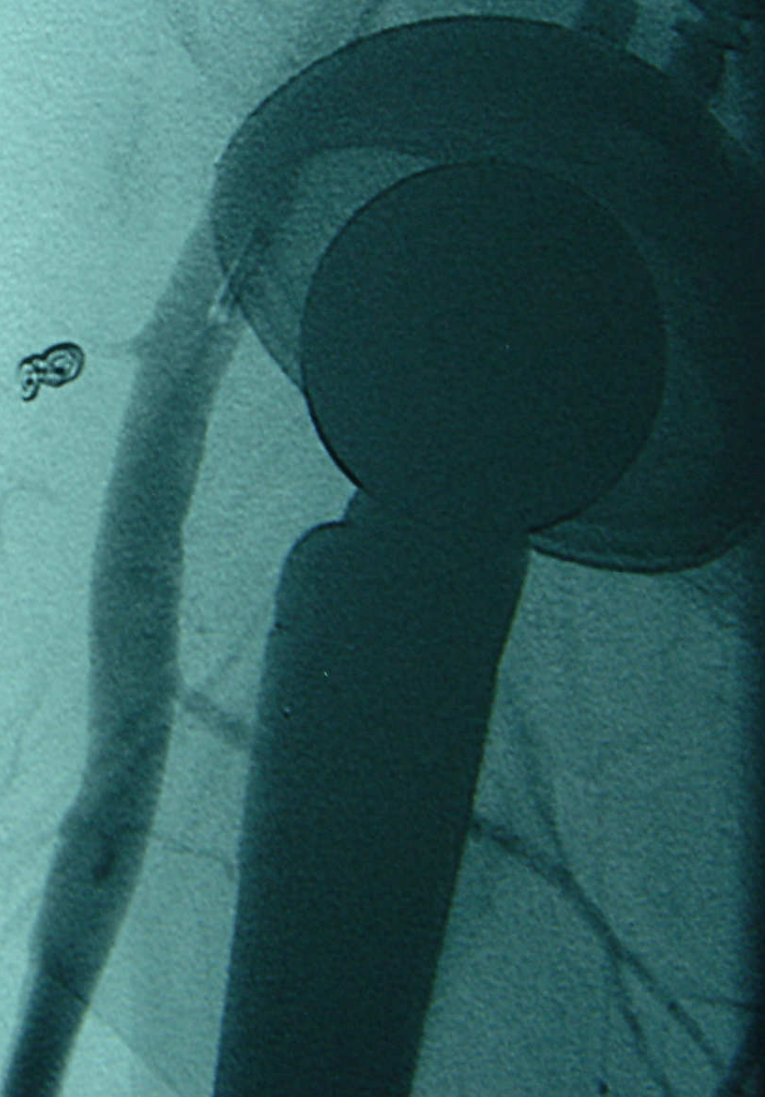




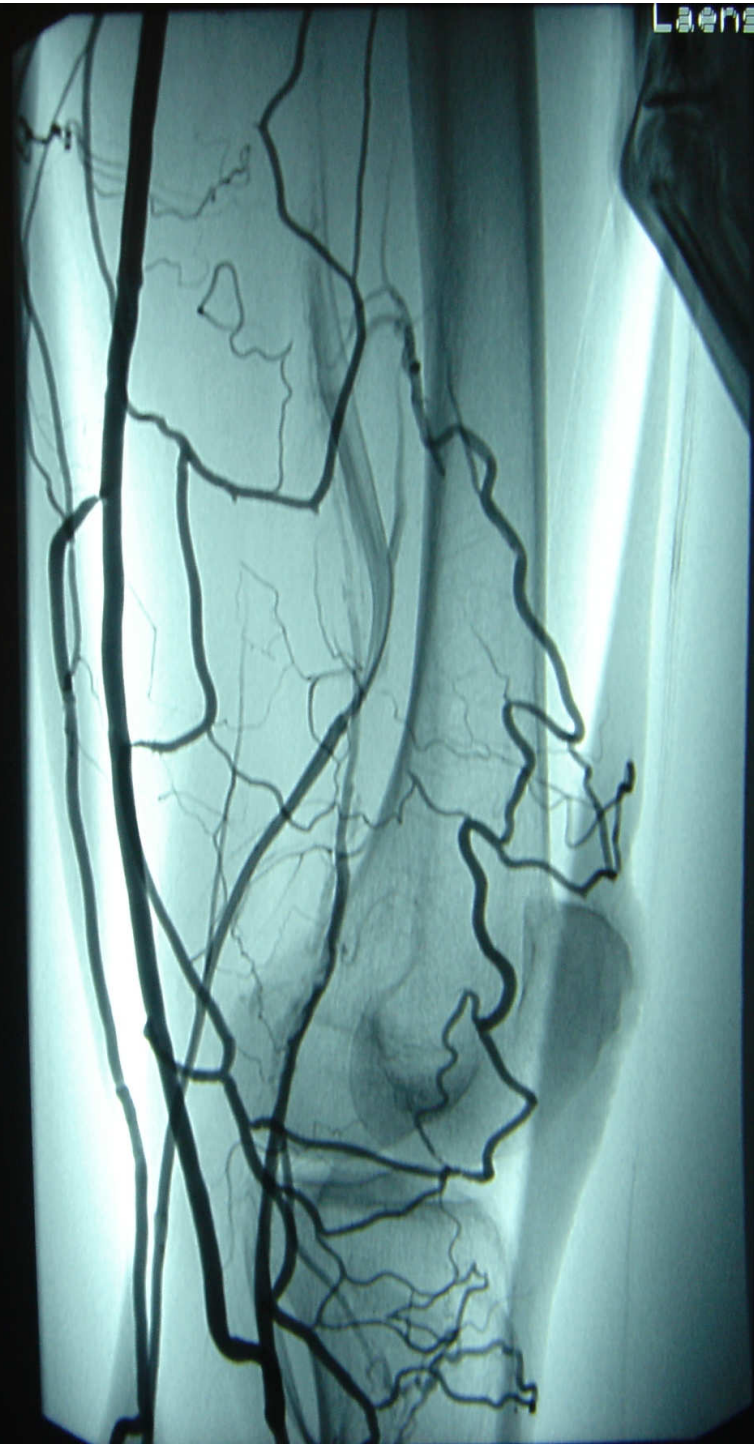


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Laenss jukhu:



SIN

Laenss jukhuset

2 ST 3X30MM COILS



SIN

Aneurysmbehandling

- Trombotisering – sacculära aneurysm
- ex. intracerebrala
 - Coils
 - Klister
- Exklusion – fusiforma aneurysm
 - Stentgraft - endoprotes



Saccular Aneurysm



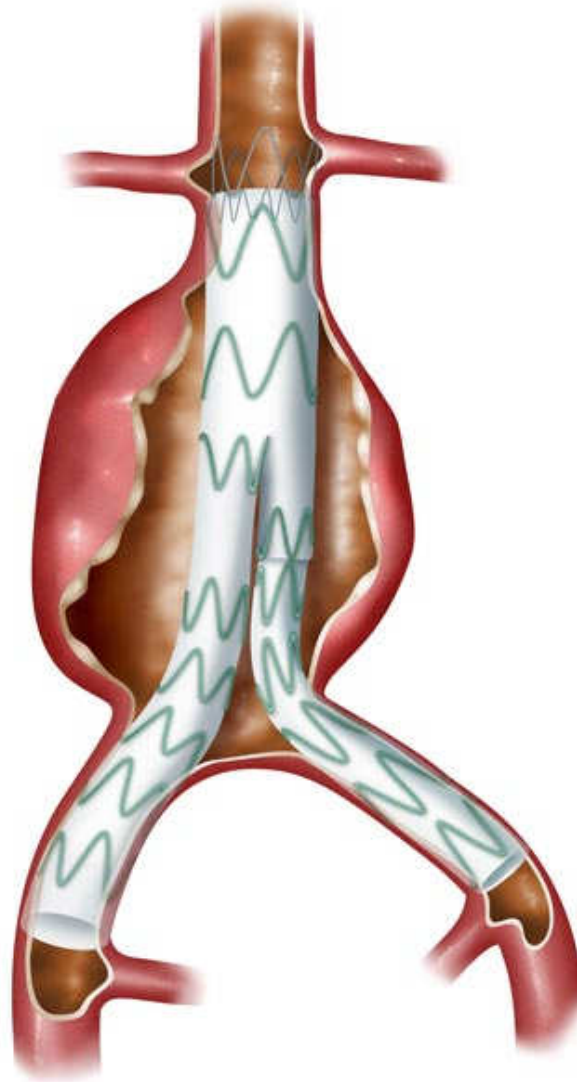
Fusiform Aneurysm

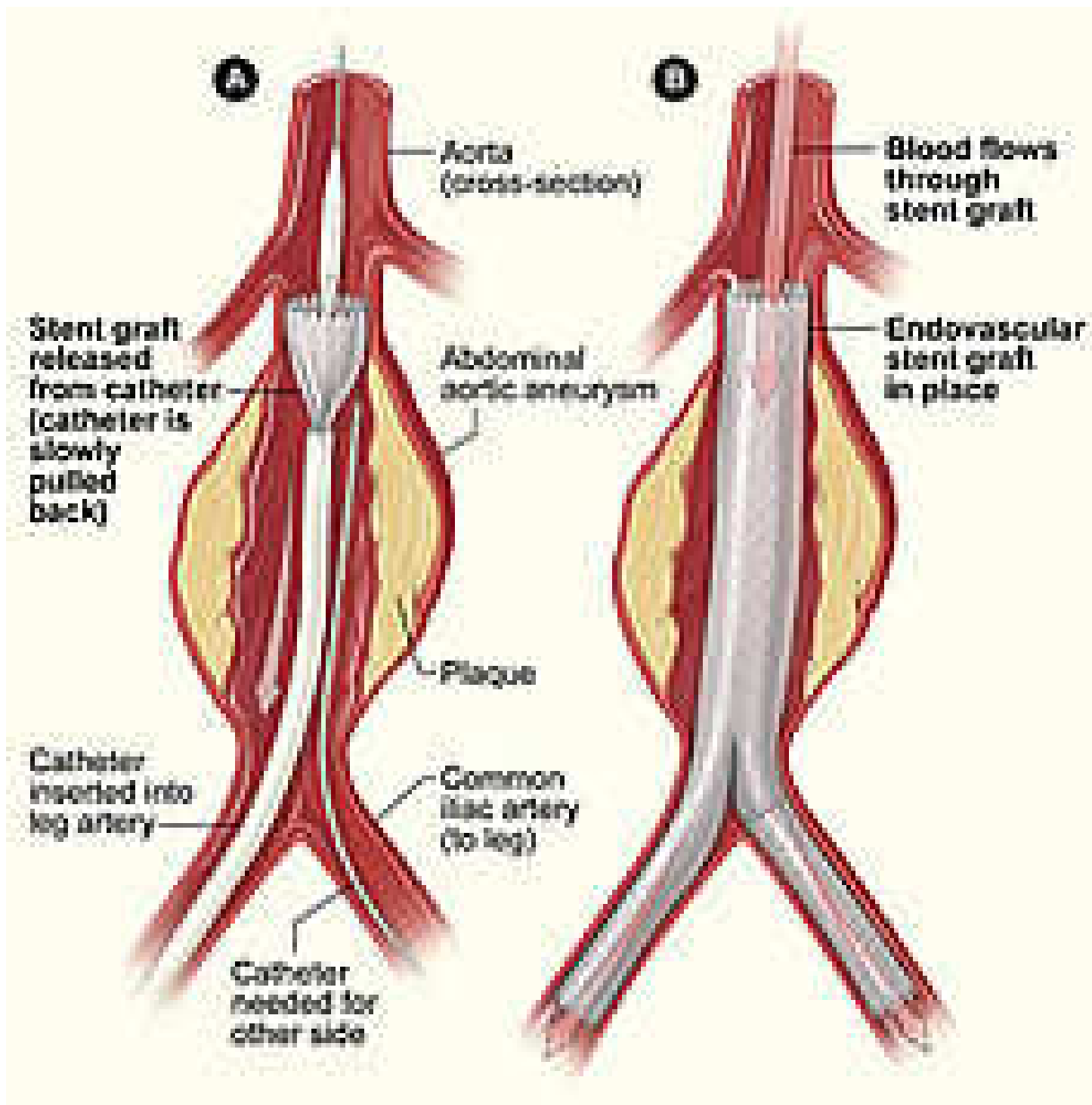


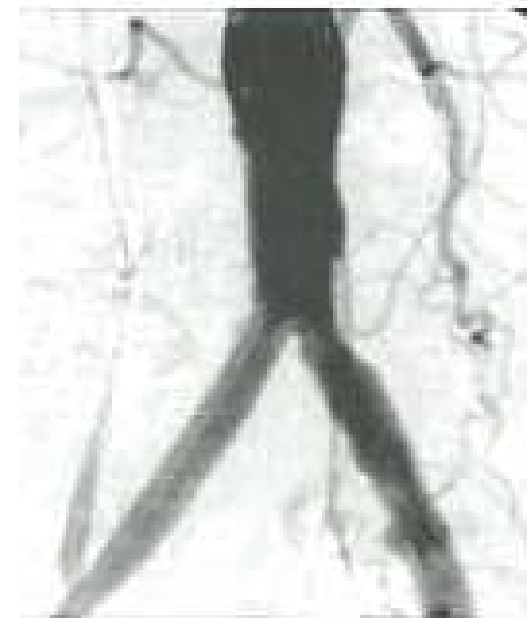
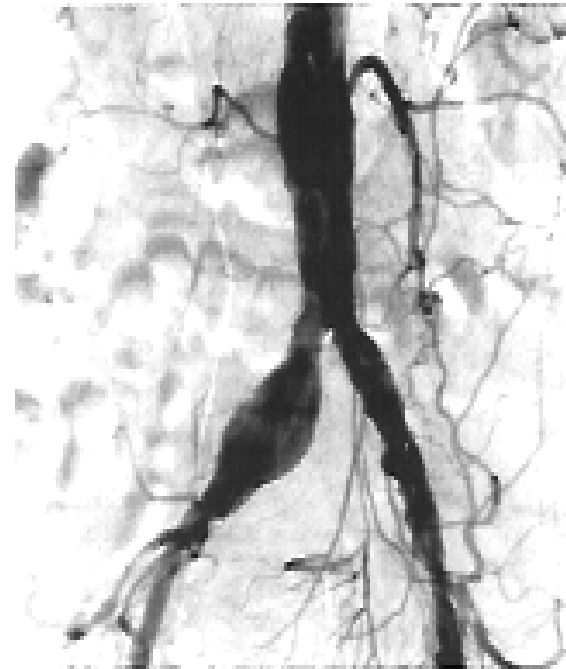
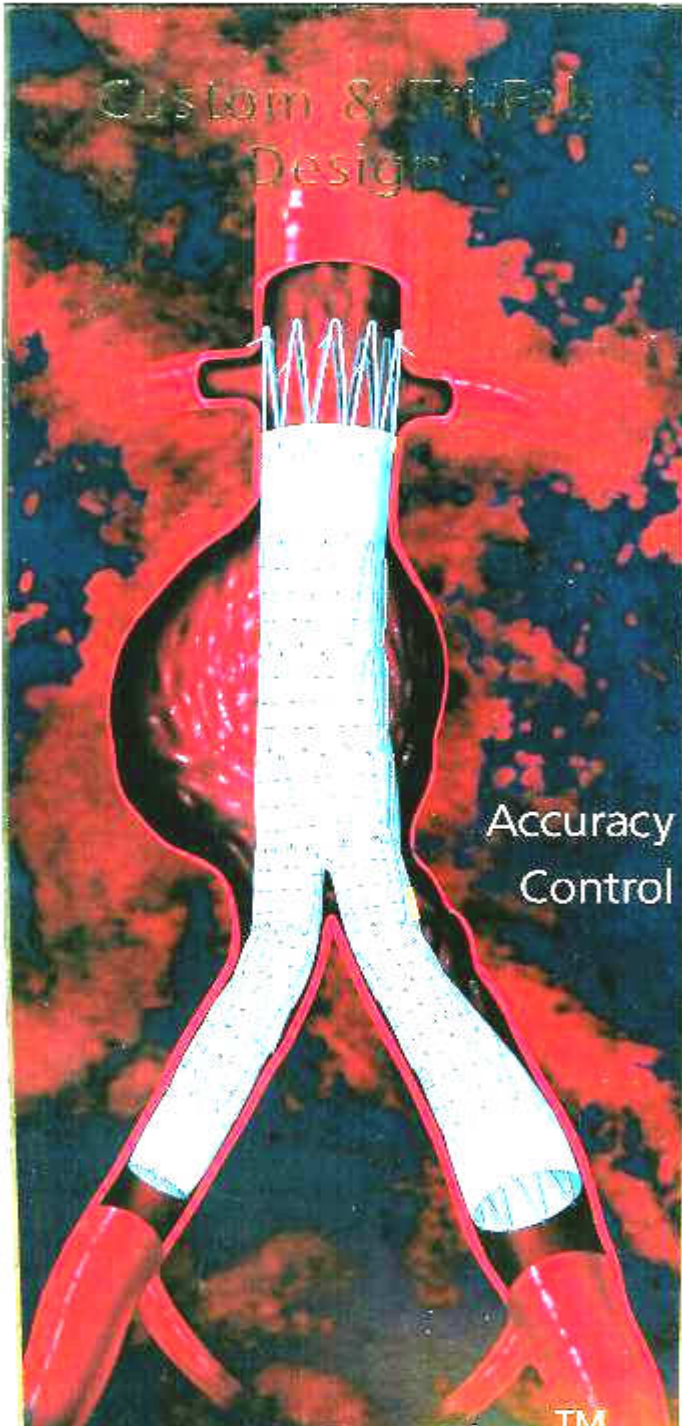
Ruptured Aneurysm

EVAR

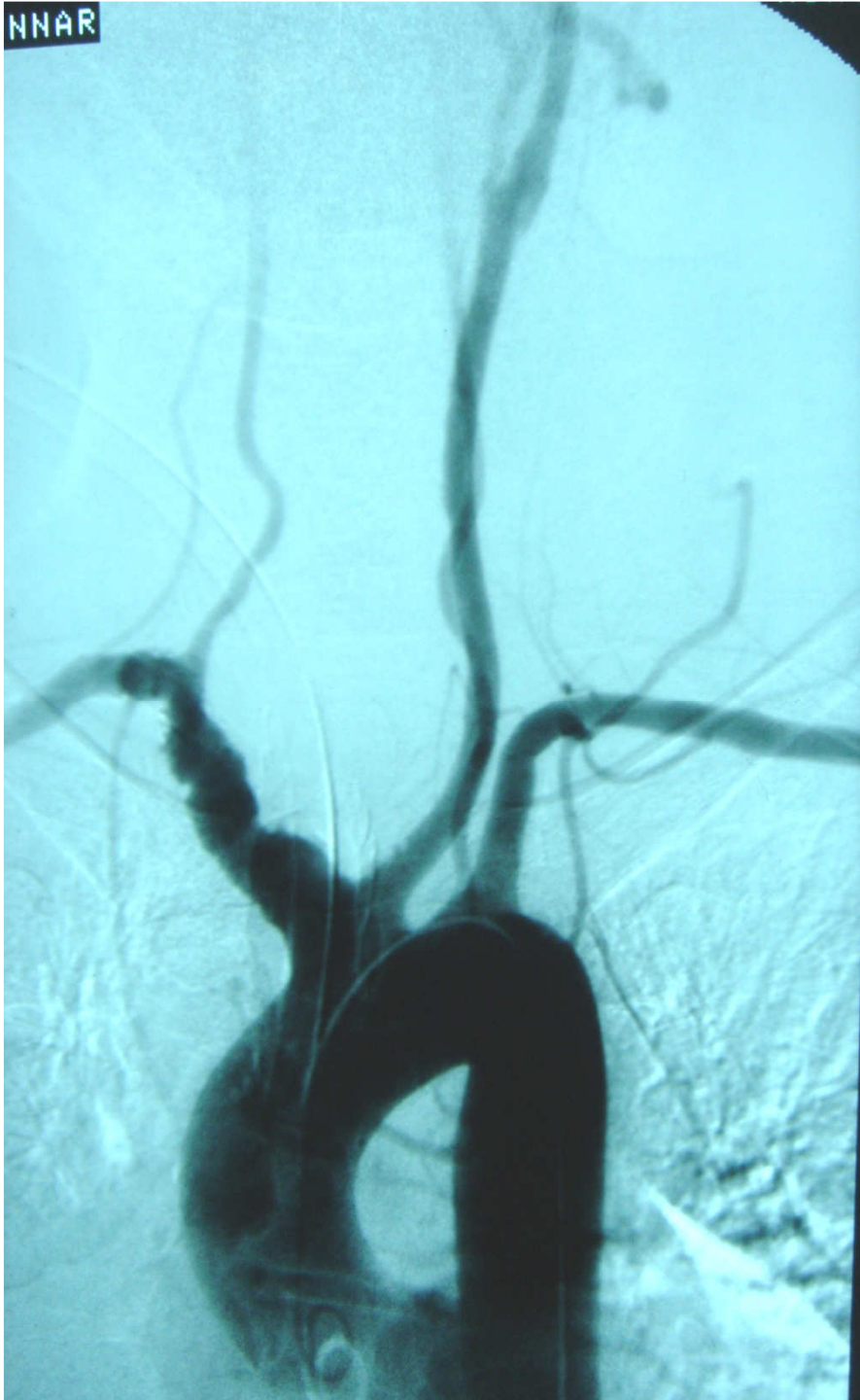
endovascular aortic repair







NNAR



NNAR

AORTO-CERVICA

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Phys: NO

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U-C: 8

BALLONGKATETER AV 6 CM LÅNGD

HUSET HALMSTAD

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22.1mm

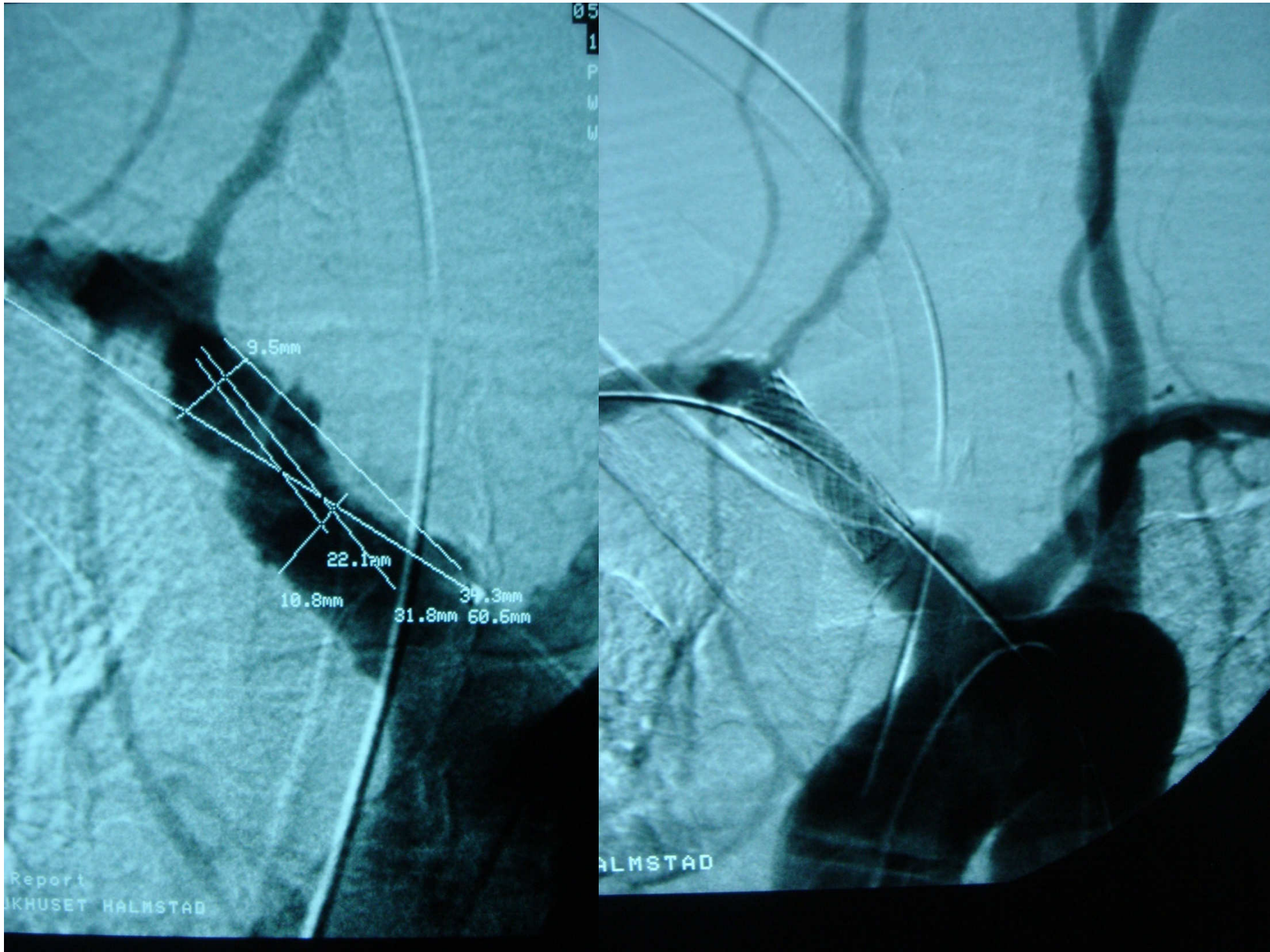
10.8mm

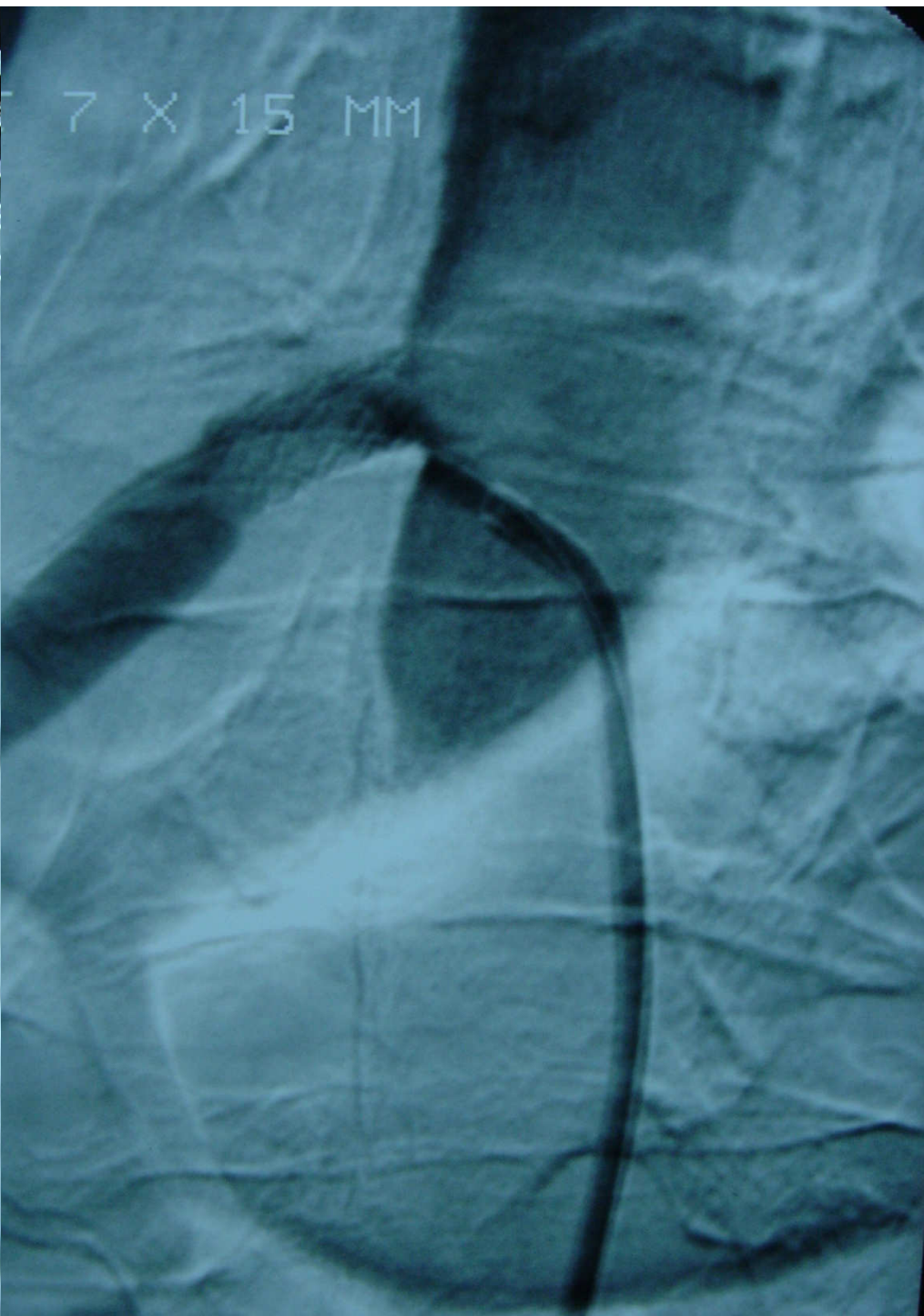
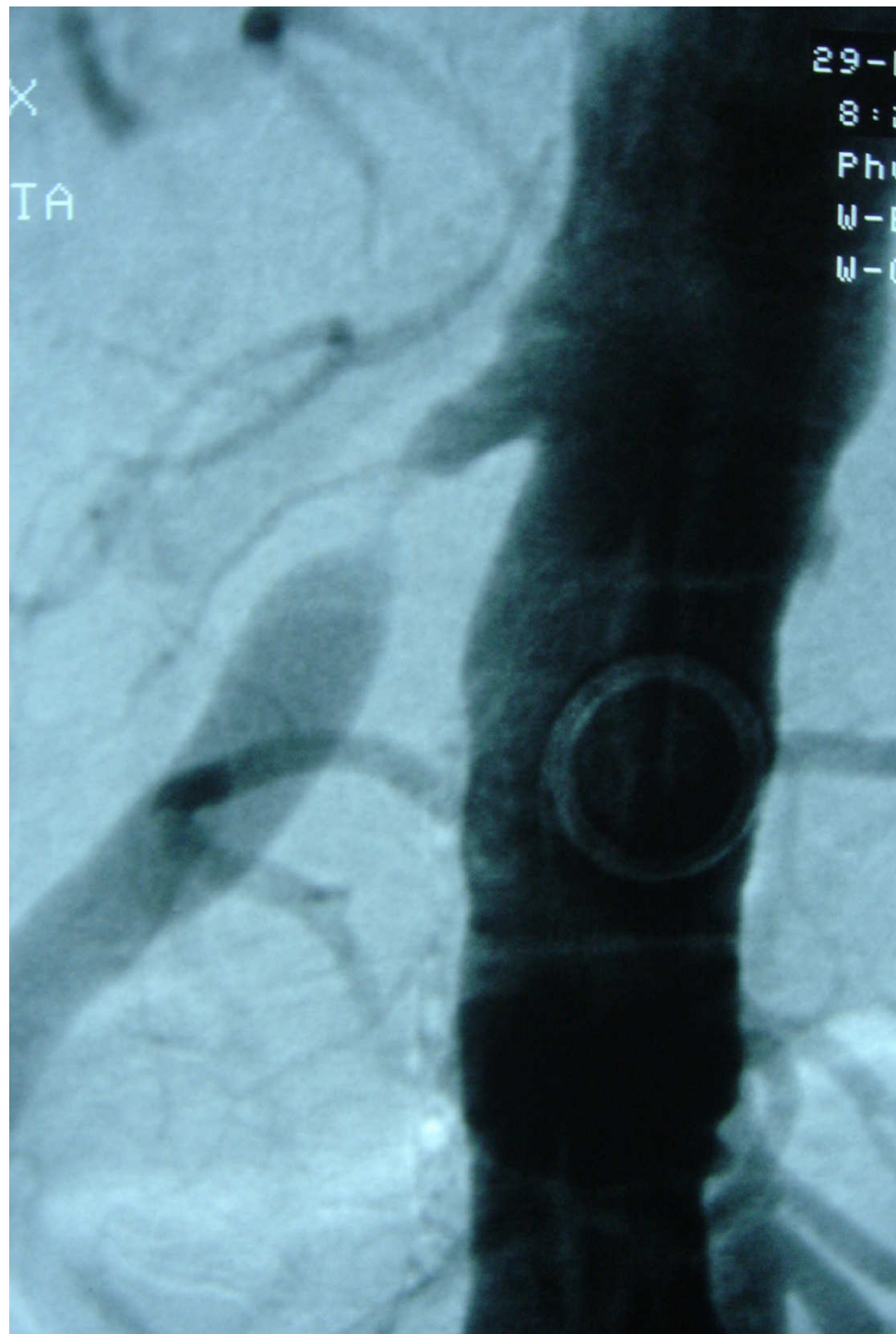
34.3mm

31.8mm 60.6mm

Report
KIHUSET HALMSTAD

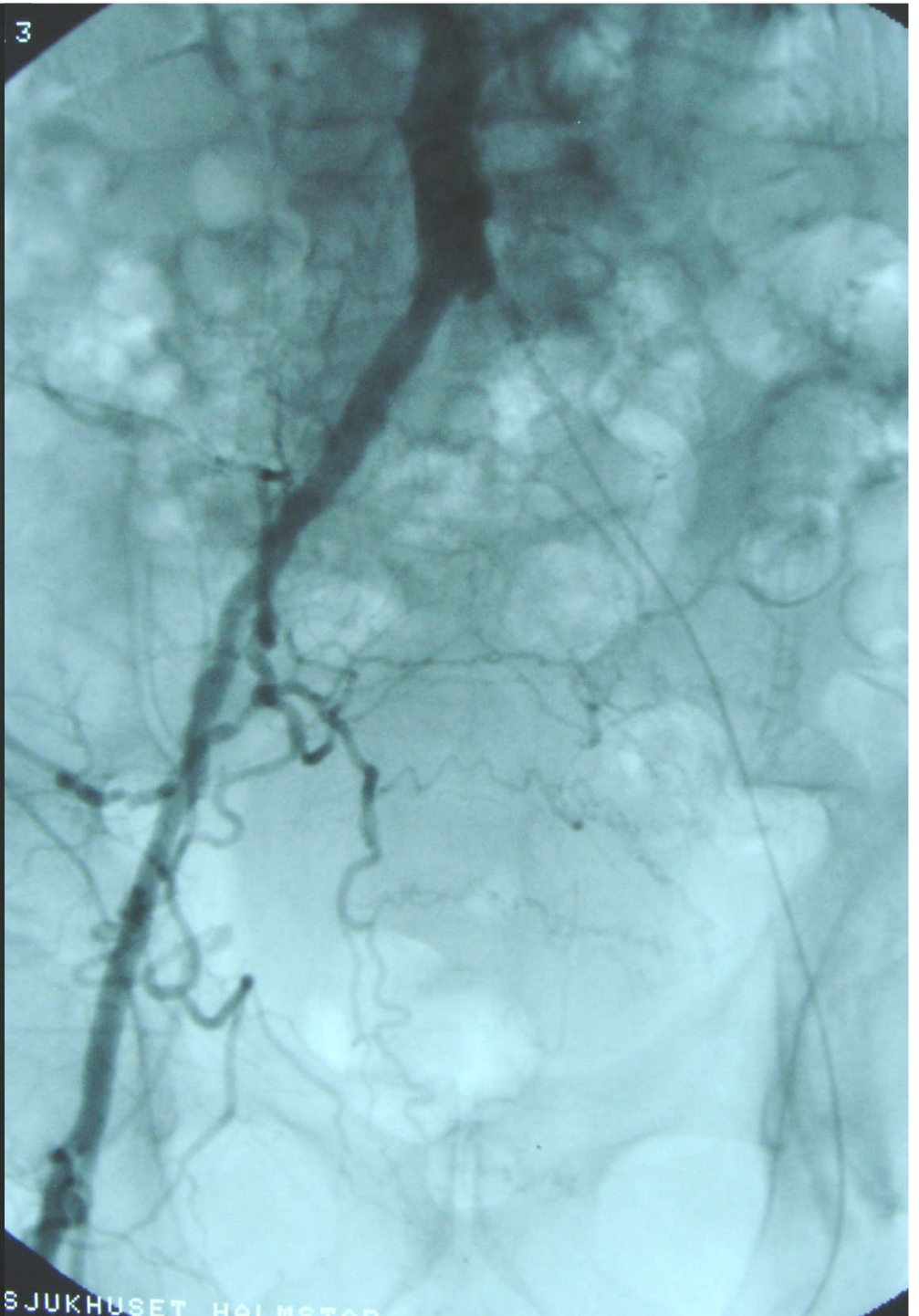
HALMSTAD



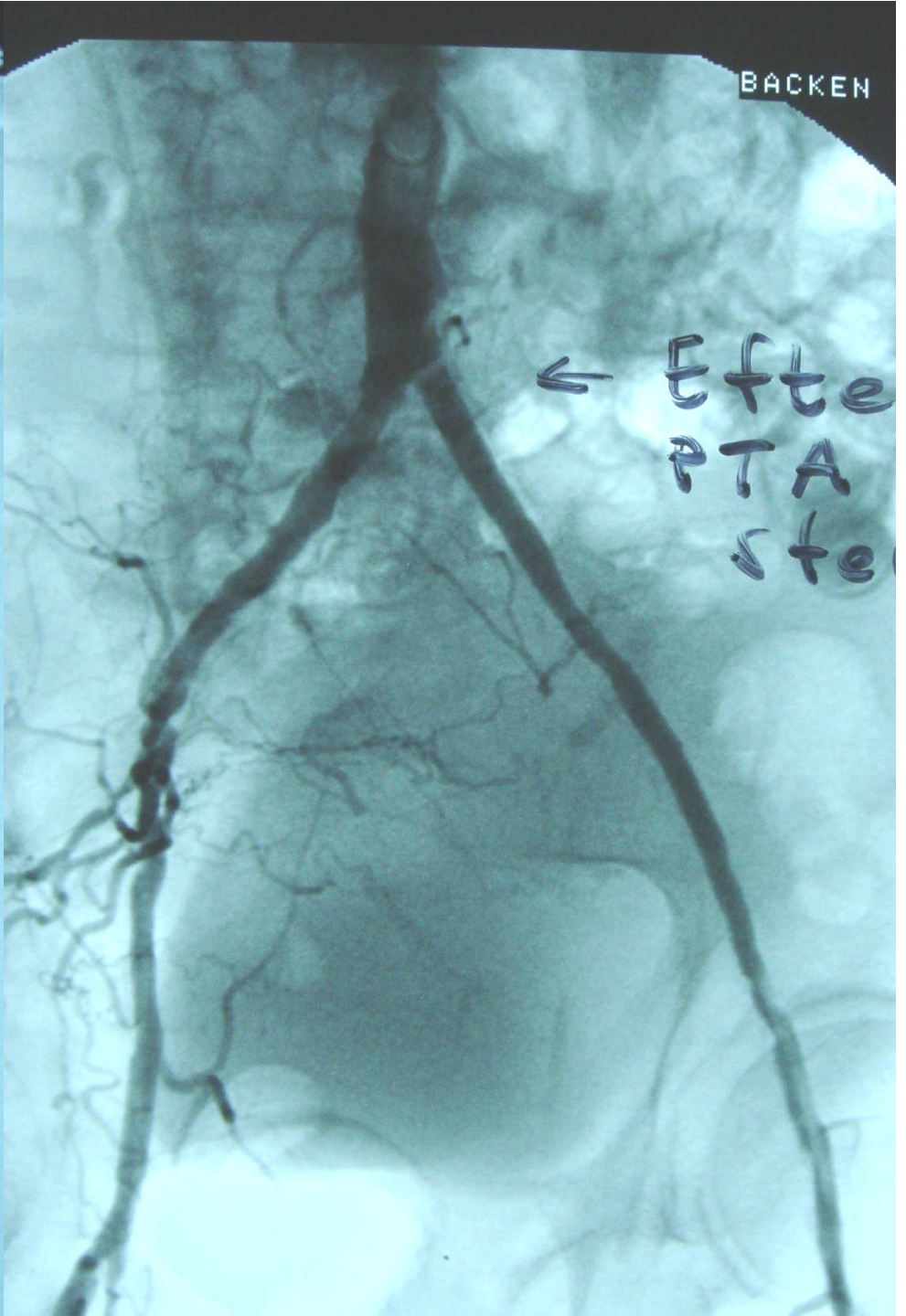
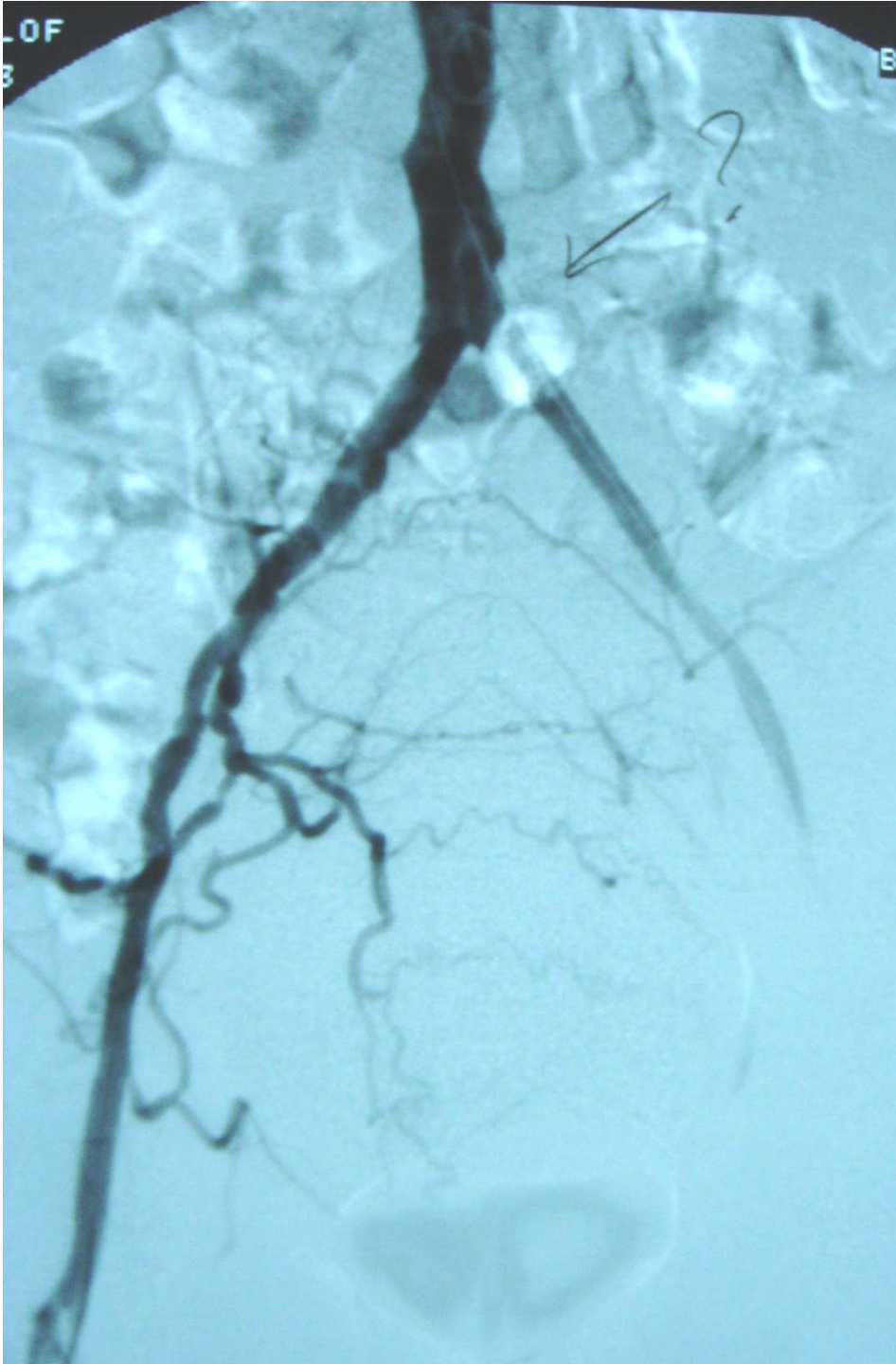




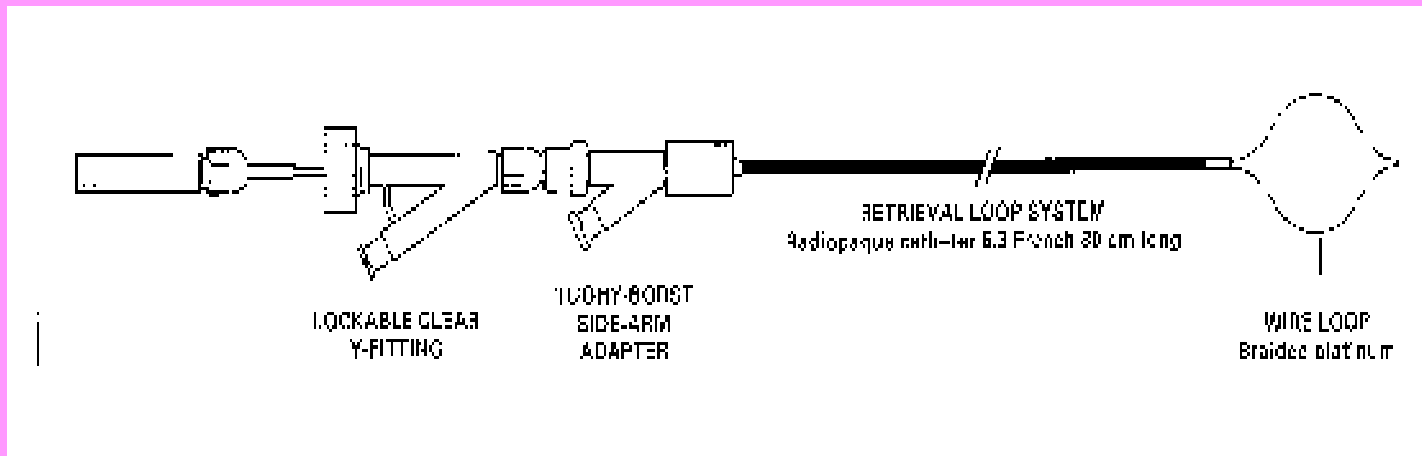
SET HALMSTAD



3
SJKHUSET HALMSTAD

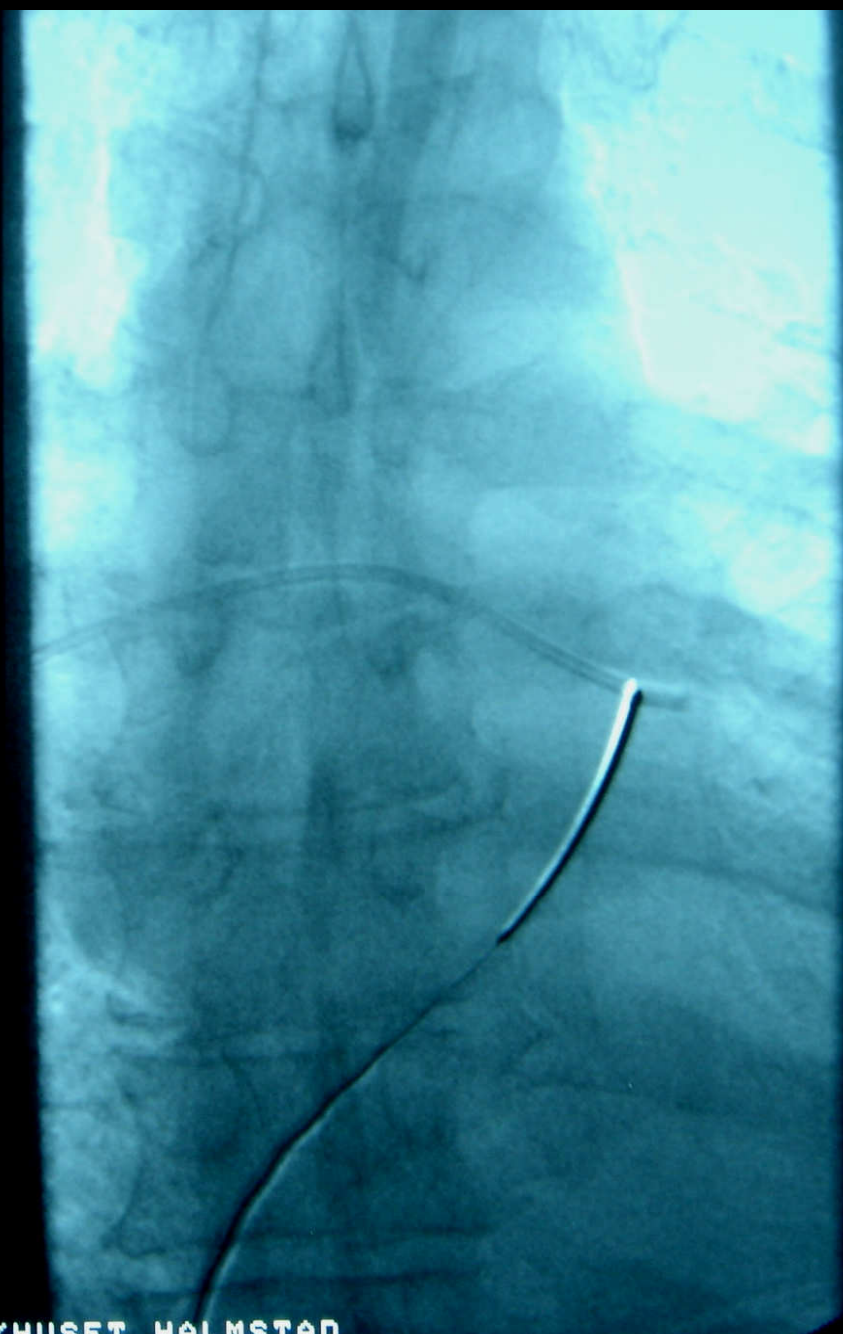


Snara



M: 1/1
I: 2/1
BGR: 30%

16:11
Phys
W-B:
W-C:



E

Interventionell radiologi

Vaskulär

**Icke-
vaskulär**

PTC

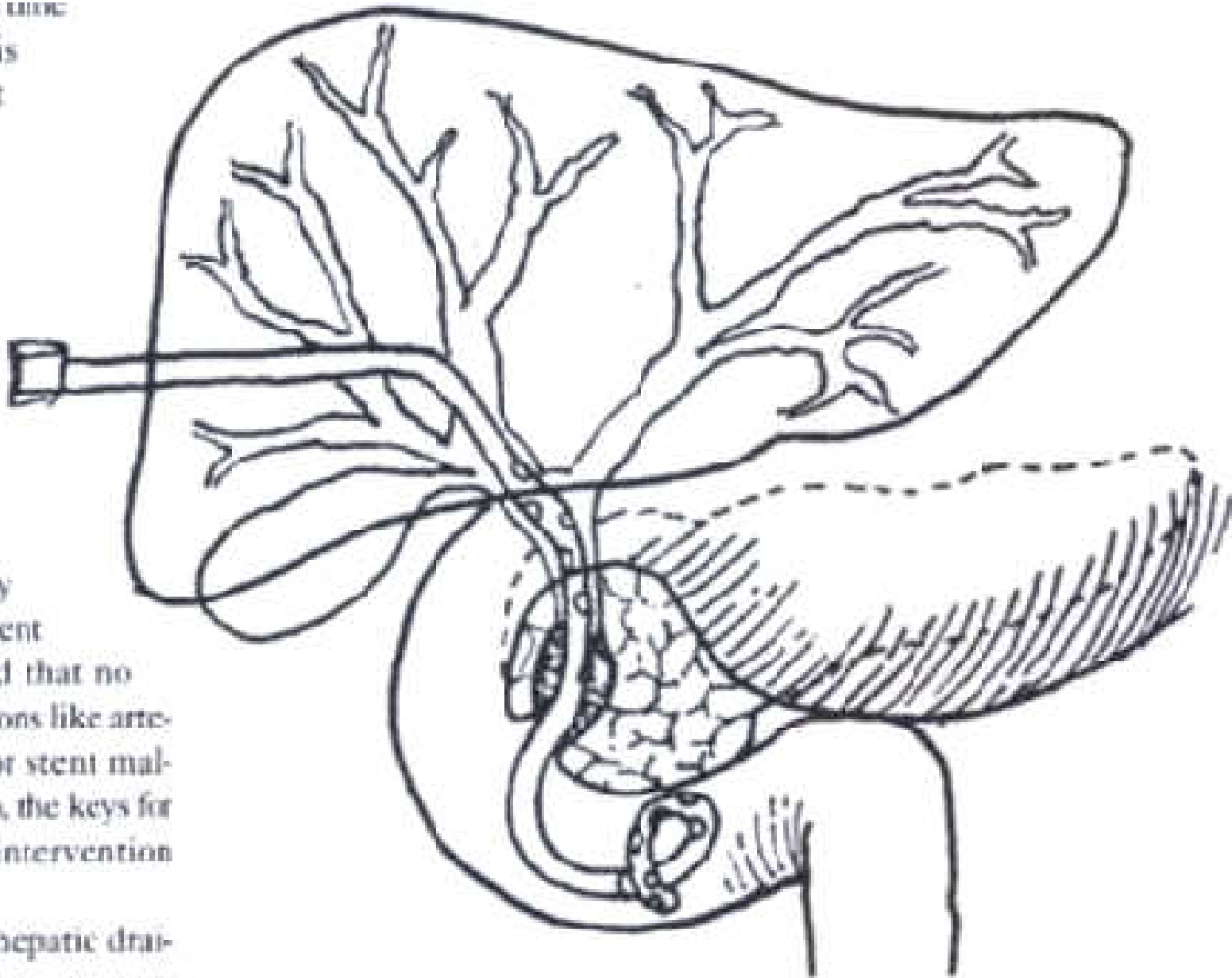
= percutan transhepatisk
cholangiografi,
vid gallvägshinder

- Pankreascancer
- Gallvägscancer
- Levermetastas

PTC - teknik

- Antibiotikaprofylax
- EDA eller fullnarkos
- Punktion med eller utan ultraljudhjälp
- Externt eller internt dränage
- Stent

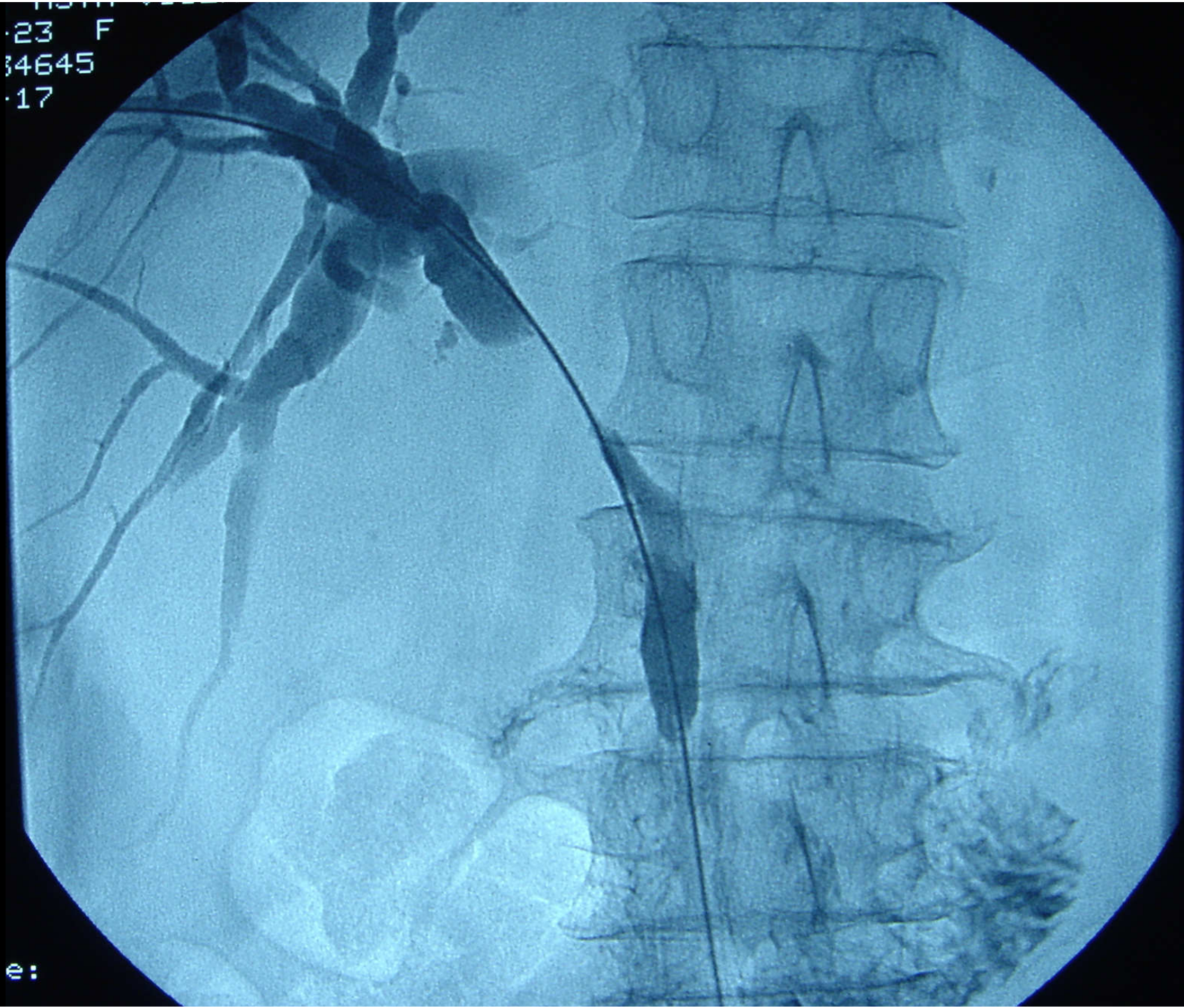
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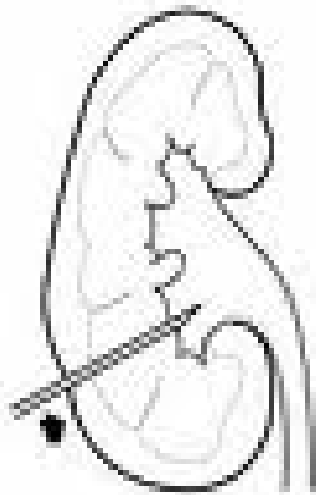
Pyelostomi/Nefrostomi

- vid uretärhinder

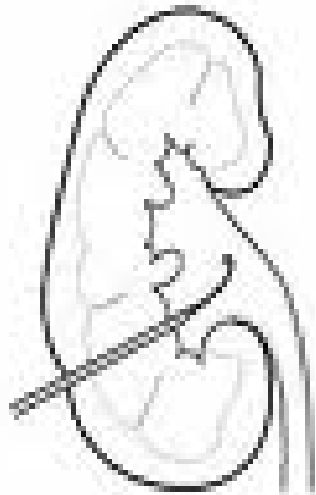
- Uretärsten
- Infektion
- Blåscancer
- Prostatacancer
- Retroperitoneal fibros

Pyelostomi - teknik

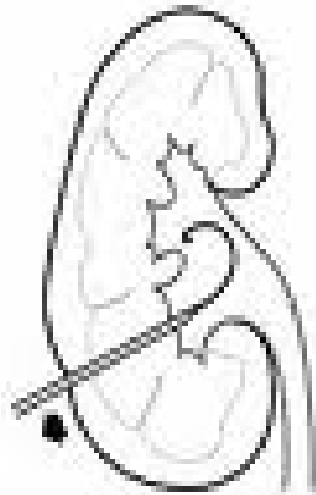
- Ev. antibiotikaprofylax
- Sedering
- Lokalanestesi
- Hudincision
- Ultraljudledd punktion
- Kontrastinjektion
- Ledare in i njurbäckenet
- Dränagekateter med pigtail



A Needle inserted into kidney



B Guidewire passed through needle



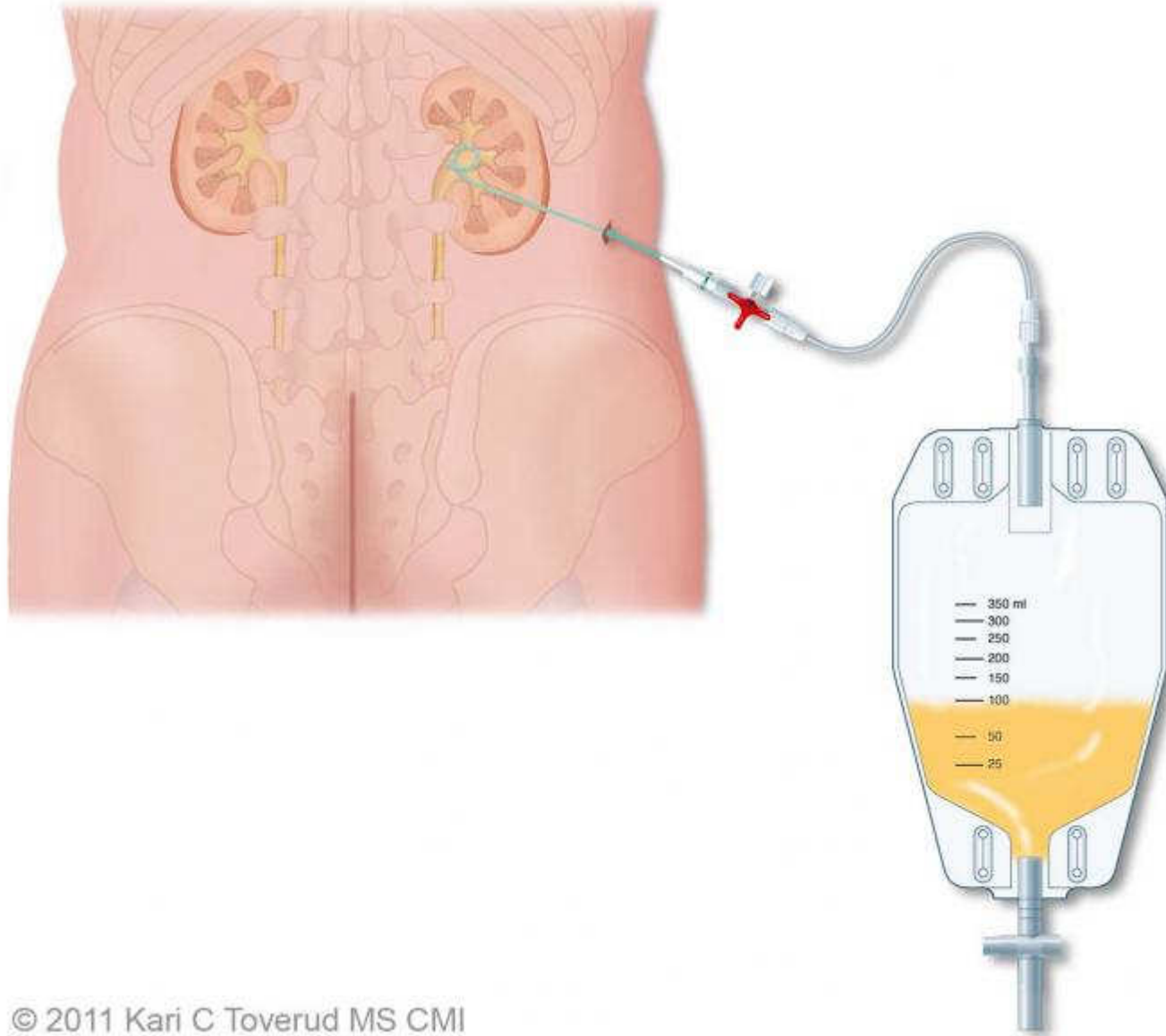
C Needle removed with guidewire in the kidney



D Catheter placed over guidewire



E Catheter in position



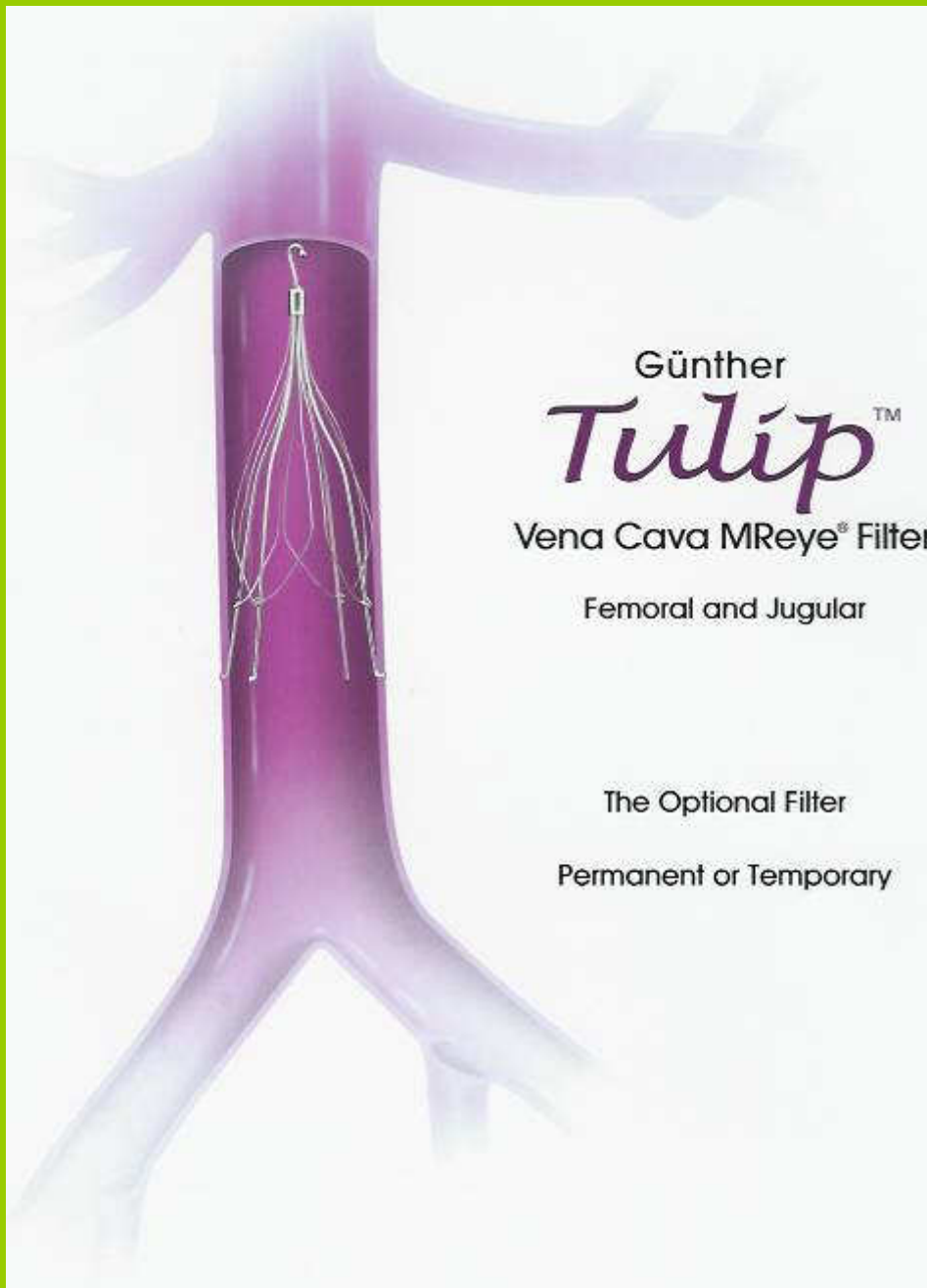
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Övriga interventioner

- Abcessdränage – med ultraljud
- Pleura- och ascitestappning - ultraljud
- Nervrotsblockad - genomlysning
- Biopsier – ultraljud, genomlysning eller CT
- Stentning i trachea, bronker, esofagus, colon, uretär
- Tumörablation med laser, RF, ultraljud, TACE,
- TIPS

Farmaka

- Premedicinering som preop sedering
- Morfin 2,5 mg i.v. upprepas ev.
- Carbocain i.a. 8-10 ml 1%
- Buscopan 1 ml i.v.
- Heparin 2500 – 7000 enheter
i.a. eller i.v.
- Papaverin 30-40 mg i.a.
- Nitroglycerin 150 µg i.a.



Vena cava filter
–förebygga
lungemboli hos
patienter med
trombos