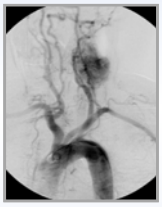
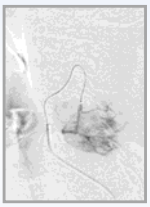
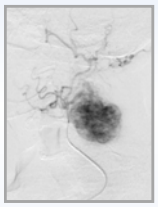
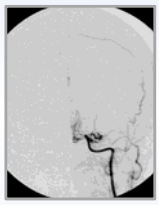
RADIOLOGIE KongressRUHR

Diagnostische Angiographie

- Materialkunde -

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www.lheuser.de

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Offizielle Guidelines

- Diagnostische Angiographie -

The American College of Radiology, with more than 30,000 members, is the principal organization of radiologists, radiation oncologists, and clinical medical physicists in the United States. The College is a nonprofit professional society whose primary purposes are to advance the science of radiology, improve radiologic services to the patient, study the socioeconomic aspects of the practice of radiology, and encourage continuing education for radiologists, radiation oncologists, medical physicists, and persons practicing in allied professional fields.

The American College of Radiology will periodically define new practice guidelines and technical standards for radiologic practice to help advance the science of radiology and to improve the quality of service to patients throughout the United States. Existing practice guidelines and technical standards will be reviewed for revision or renewal, as appropriate, on their fifth anniversary or sooner, if indicated.

Each practice guideline and technical standard, representing a policy statement by the College, has undergone a thorough consensus process in which it has been subjected to extensive review and approval. The practice guidelines and technical standards recognize that the safe and effective use of diagnostic and therapeutic radiology requires specific training, skills, and techniques, as described in each document. Reproduction or modification of the published practice guideline and technical standard by those entities not providing these services is not authorized.

Revised 2011 (Resolution 41)*

ACR–ASNR–SIR–SNIS PRACTICE GUIDELINE FOR THE PERFORMANCE OF DIAGNOSTIC CERVICOCEREBRAL CATHETER ANGIOGRAPHY IN ADULTS

PREAMBLE

These guidelines are an educational tool designed to assist practitioners in providing appropriate radiologic care for patients. They are not inflexible rules or requirements of practice and are not intended, nor should they be used, to establish a legal standard of care. For these reasons and those set forth below, the American College of Radiology cautions against the use of these guidelines in litigation in which the clinical decisions of a practitioner are called into question.

The ultimate judgment regarding the propriety of any specific procedure or course of action must be made by the physician or medical physicist in light of all the circumstances presented. Thus, an approach that differs from the guidelines, standing alone, does not necessarily imply that the approach was below the standard of care. To the contrary, a conscientious practitioner may responsibly adopt a course of action different from that set forth in the guidelines when, in the reasonable judgment of the practitioner, such course of action is indicated by the condition of the patient, limitations of available resources, or advances in knowledge or technology subsequent to publication of the guidelines. However, a practitioner who employs an approach substantially different from these guidelines is advised to document in the patient record information sufficient to explain the approach taken.

The practice of medicine involves not only the science, but also the art of dealing with the prevention, diagnosis, alleviation, and treatment of disease. The variety and complexity of human conditions make it impossible to always reach the most appropriate diagnosis or to predict with certainty a particular response to treatment.

ACR
ASNR American Society of Neuroradiology
SOCIETY OF INTERVENTIONAL RADIOLOGY
Society of NeuroInterventional Surgery SNIS

Indications for diagnostic cervicocerebral catheter angiography include, but are not limited to:

A. Definition of the presence and extent of ***atherosclerotic occlusive disease*** and thromboembolic phenomena and ***as an aid in planning intervention***.

B. Definition of the etiology of ***cervicocerebral hemorrhage.***

C. Definition of the presence, location, and anatomy of ***extracranial and intracranial aneurysms and vascular malformations.***

D. Evaluation of ***vasospasm related to subarachnoid hemorrhage or drug-induced vasculopathy.***

E. Definition of the presence, ***nature, and extent of injury to cervicocerebral vessels.***

ACR–ASNR–SIR–SNIS PRACTICE GUIDELINE FOR THE PERFORMANCE OF DIAGNOSTIC CERVICOCEREBRAL CATHETER ANGIOGRAPHY IN ADULTS

Indications for diagnostic cervicocerebral catheter angiography include, but are not limited to:

F. Definition of the ***vascular supply to tumors.***

G. Definition of the presence and extent of ***vasculitis.***

H. Diagnosis and definition of the nature and extent of ***congenital or acquired vascular abnormalities.***

I. Definition of the presence of ***venous occlusive disease.***

J. Definition of the ***relevant vascular anatomy for planning or evaluating a therapeutic intervention.***

K. Physiologic testing of ***brain function (e.g., Wada test).***

ACR–ASNR–SIR–SNIS PRACTICE GUIDELINE FOR THE PERFORMANCE OF DIAGNOSTIC CERVICOCEREBRAL CATHETER ANGIOGRAPHY IN ADULTS

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Institut für Diagnostische & Interventionelle Radiologie, Neuroradiologie & Nuklearmedizin

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Qualitätsstandards
- Diagnostische Angiographie -

Neurologic Complication	Reported Rates	Suggested Threshold
TIA	0%-2.3%	2.5%
Stoke	0%-5%	1%

Major Complications	Reported Rates	Suggested Threshold
Contrast media associated nephrotoxicity	0%-0.15%	0.2%
Arterial occlusion requiring surgical thrombectomy or thrombolysis	0%-0.4%	0.2%
Arteriovenous fistula/pseudoaneurysm	0.01%-0.22%	0.2%
Hematoma requiring transfusion or surgery	0.26%-1.5%	0.5%

Overall Procedure Threshold	Reported Rate
All major complications resulting from diagnostic cervicocerebral catheter angiography	2%

ACR–ASNR–SIR–SNIS PRACTICE GUIDELINE FOR THE PERFORMANCE OF DIAGNOSTIC CERVICOCEREBRAL CATHETER ANGIOGRAPHY IN ADULTS

RADIOLOGIE KongressRUHR

Materialien und Devices
- Allgemeine Materialien -

- **Steriles Paket**
  - Abdecktuch für Patienten
  - 2 Schweißtücher
  - Skalpell, Punktionsnadel
  - Gefäße für NaCl-Lsg, KM, Abwurf
  - Sterile Tupfer
  - Spritzen für LA, KM und NaCl
  - Verbindungschläuche , Kräne

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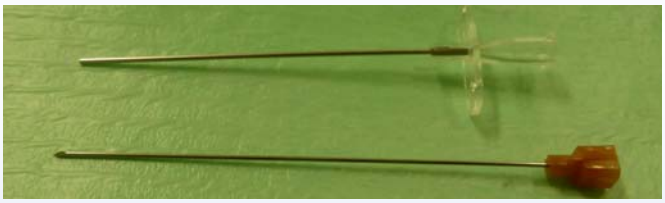
Materialien und Devices

- Allgemeine Materialien -



Seldinger Nadel

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Materialien und Devices

- Spezielle Materialien -

- **Introducer** (Schleusen)
  - Kaliber
  - Länge
- **Führungsdrähte**
  - Kaliber
  - Länge
  - uncoated, Hydrophile coating
  - gerade Spitze, gebogene Spitze
  - normal, stiff, extra stiff, super stiff
- **Katheter**
  - Kaliber
  - Länge
  - Konfiguration

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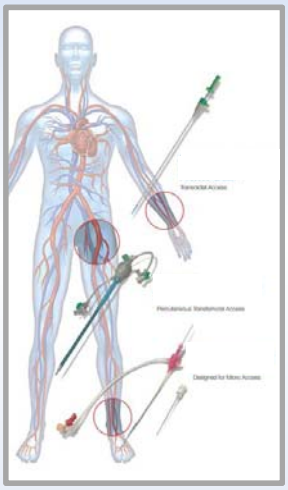
Materialien und Devices

- Spezielle Materialien -

- **Introducer** (Schleusen)
  - Kaliber (4 – 8F
  - Länge (10 – 90 cm)
- **Führungsdrähte**
  - Kaliber
  - Länge
  - uncoated, Hydrophile coating
  - gerade Spitze, gebogene Spitze
  - normal, stiff, extra stiff, super stiff
- **Katheter**
  - Kaliber
  - Länge
  - Konfiguration



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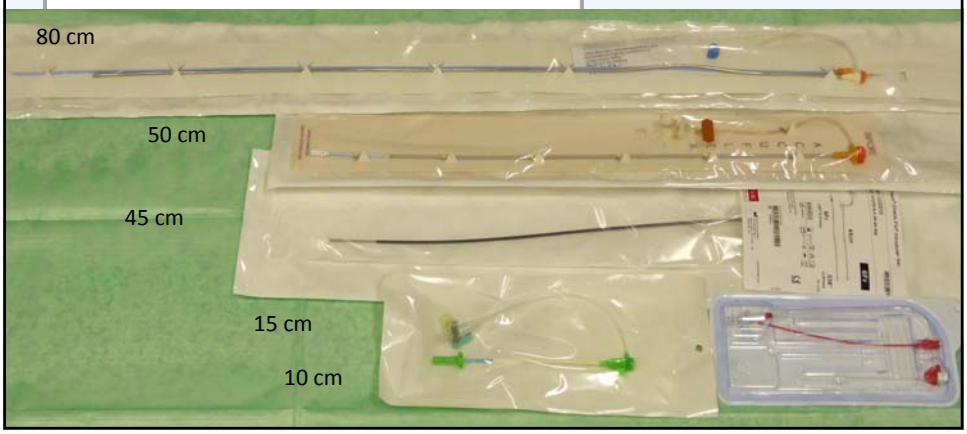
Materialien und Devices

- Spezielle Materialien -

- **Introducer** (Schleusen)
  - Kaliber so klein, wie möglich
  - Länge so kurz, wie möglich



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Materialien und Devices

- Allgemeine Materialien -

Empfehlungen:

Geschlossenes System für Katheterspülung und KM-Injektion bestehend aus :

2 3-Wege-Kränen
- weiß für NaCl
- blau für KM

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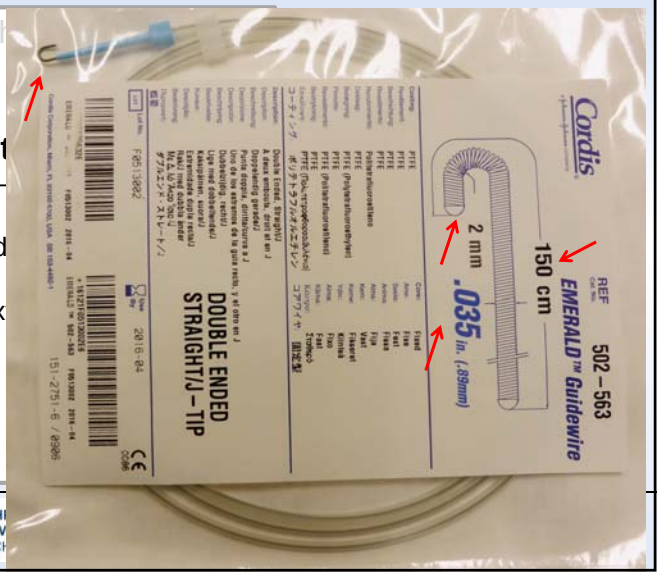
Materialien und Devices

- Spezielle Materialien -

- **Introducer** (Sch
  - Kaliber
  - Länge
- **Führungsdräht**
  - Kaliber (0,010 -
  - Länge
  - uncoated, hyd
  - gerade Spitze,
  - normal, stiff, ex
- **Katheter**
  - Kaliber
  - Länge
  - Konfiguration



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Materialien und Devices

- Spezielle Materialien -

- **Introducer** (Schleusen)
  - Kaliber
  - Länge
- **Führungsdrähte**
  - Kaliber (0,010 – 0,038 in
  - Länge
  - uncoated, Hydrophile c
  - gerade Spitze, gebogen
  - normal, stiff, extra stiff, s
- **Katheter**
  - Kaliber
  - Länge
  - Konfiguration

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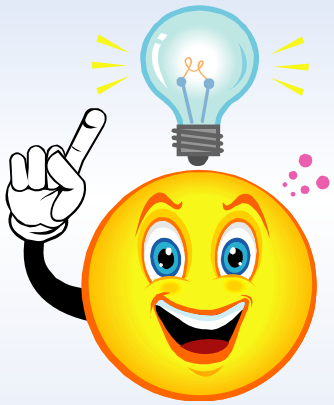
Materialien und Devices

- Spezielle Materialien -

Merke:

- Zum Einführen von Schleusen und Kathetern **immer lange Drähte** benutzen!
- Zum Einführen über Stahlnadeln **keine hydrophil beschichteten Drähte** benutzen!



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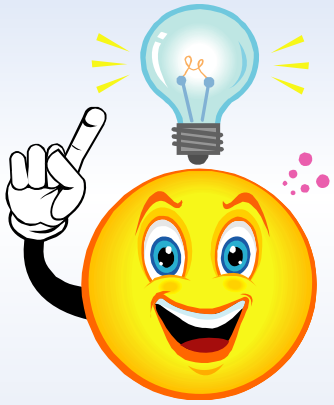
Materialien und Devices

- Spezielle Materialien -

Empfehlung:

- Zum Einführen von Schleusen und Kathetern **unbeschichtete J-Tip-Drähte** verwenden
- Zur selektiven Sondierung **hydrophile Drähte verwenden**
- Bei elongierten Gefäßen geben **steife Drähte** mehr Sicherheit bei der Nachführung des Katheters



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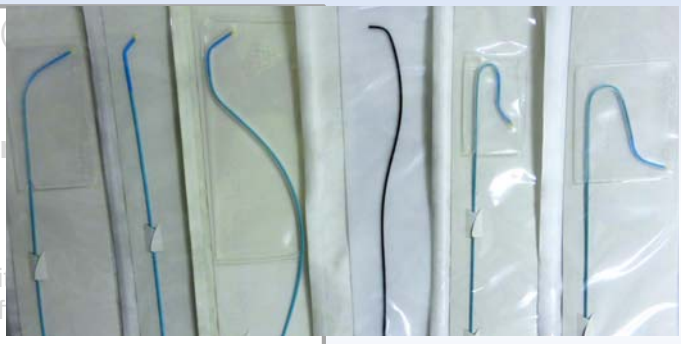
Materialien und Devices

- Spezielle Materialien -

- **Introducer (**
  - Kaliber
  - Länge
- **Führungsdr**
  - Kaliber
  - Länge
  - uncoated,
  - gerade Spi
  - normal, stif
- **Katheter**
  - Kaliber
  - Länge
  - Konfiguration



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Materialien und Devices

- Spezielle Materialien -

Empfehlungen:

Übersichtsaortographie
(maschinelle KM-Injektion):
Pigtail

Eigenschaften:
- F4 + F5
- relativ hart
- Spitze nicht getapert
- Seitenlöcher im Schaft
- bleibt stabil bei Injektion

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Materialien und Devices

- Spezielle Materialien -

Empfehlungen:

Universalkatheter:
Bentson-Hanaffe

Eigenschaften:
- F4
- weich
- hydrophil beschichtet
- Spitze nicht getapert

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Materialien und Devices

- Spezielle Materialien -

Empfehlungen:

Universalkatheter:
Headhunter

Eigenschaften:
- F4 + F5
- mittelhart
- gute Führungsstabilität

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Materialien und Devices

- Spezielle Materialien -

Empfehlungen:

Elongierter Aortenbogen:
Sidewinder 1 oder 2

Eigenschaften:
- F4 + F5
- mittelhart
- gute Führungsstabilität
- muss im Aortenbogen invertiert werden
- S2 ist schwerer zu manipulieren als S1, liegt aber stabiler im sondierten Gefäß

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Materialien und Devices

- Spezielle Materialien -

Empfehlungen:

A. Vertebralis (insbes. Rechte Seite):
Vertebral curve

Eigenschaften:
- F4 + F5
- relativ hart
- sehr drehstabil

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Diagnostische Angiographie

- Strahlenexposition und Schwangerschaft -

Table 1: Summary of Suspected In-Utero Induced Deterministic Radiation Effects* [3,4]

Menstrual or Gestational age	Conception age	<50 mGy (<5 rad)	50-100 mGy (5 - 10 rad)	>100 mGy (>10 rad)
0 - 2 weeks (0 - 14 days)	Prior to conception	None	None	None
3rd and 4th weeks (15 - 28 days)	1st - 2nd weeks (1 - 14 days)	None	Probably none	Possible spontaneous abortion.
5th - 10th weeks (29 - 70 days)	3rd - 8th weeks (15 - 56 days)	None	Potential effects are scientifically uncertain and probably too subtle to be clinically detectable.	Possible malformations increasing in likelihood as dose increases.
11th - 17th weeks (71- 119 days)	9th - 15th weeks (57 - 105 days)	None	Potential effects are scientifically uncertain and probably too subtle to be clinically detectable.	Risk of diminished IQ or of mental retardation, increasing in frequency and severity with increasing dose.
18th - 27th weeks (120 - 189 days)	16th - 25th weeks (106 - 175 days)	None	None	IQ deficits not detectable at diagnostic doses.
>27 weeks (>189 days)	>25 weeks (>175 days)	None	None	None applicable to diagnostic medicine.

*Stochastic risks are suspected, but data are not consistent [5]. For exposure to a newborn child, the lifetime attributable risk of developing cancer is estimated to be 0.4% per 10 mGy (1 rad) dose to the baby. The potential