

SCHULTHESS KLINIK

Zervikale Injektionen unter BV  
Gefährlich oder eine gute Behandlung?

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Unterschätzte Nebenwirkungshäufigkeit bei zervikalem Nervenwurzelblock

- 2 Fälle mit Tetraplegie/Parese nach CT gesteuerte perforaminale Infiltration mit Triamcinolon (kristalin)
- MRI ischämische RM Läsion
- Geschätzte Incidenz 1:3'500
- Strenge Indikationsstellung
- Aufklärung einschl. Tod

• Hodler, SAZ, 2007:1710-Moratorium im Balgrist

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Outcome of cervical radiculopathy treated with periradicular corticosteroid injections

- Prospective study, 68 patients
- C arm fluoroscopy
- 22 gauge nedele
- Triamcinolone, 1% lidocaion
- No complications, good results

• *Bush et al ESJ, 1996:319-325*

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Intravascular uptake of interlaminar steroid injection, 4 cases

- fluoroscopy
- Intravascular uptake justifies the use of contrast to confirm non vascular injections.

• Kaplan et al, Arch Phys Med Rehab 2008, 553-8

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The incidence of intravascular penetration in cervical medial branch blocks

- 14'312 injections
- 3,5 % intravascular
- False negative justifies the use of contrast to confirm non vascular injections.
- No complications
- Verrillis et al, SPINE 2008, 174-7

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Complication of cervical nerve blocks 1999-2003

- 1'036 injections (844 patients)
- C arm fluoroscopy, 25 gauge needle, Depot Medrol
- No catastrophic complications such as vessel damage, paralysis, death
- 14 P.(1,66%) minor complication
- Anterior placed needle more prone to complications (p=0,04), Technique, Education

• *Ma et al, JBJS, Am,2005:1025-30*

### Complication of cervical nerve blocks 1999-2003

- In conclusion , case reports on complications can be unnecessarily alarming - prevalence not known

• *Ma et al, JBJS, Am,2005:1025-30*

### Cervical transforaminal steroid injections: more dangerous than we think?

- Retrospective survey 287 (21,4% out of 1340) pain specialists
- 21,3% were aware of complications
- 16 vertebrobasilar brain infarcts, 12 SC infarcts, 2 combined
- 13 fatal outcome
- Scanlon et al, SPINE 2007, 1249-56

### Cervical transforaminal steroid injections: more dangerous than we think? Who caused complication - questionnaire n=78

- 76% Anesthesiologists, 17% physiatrists, 3% ortho surgeons, 1% radiology, neurology, others.
- ?? Intraarterial embolus - incorrect needle placement, methylprednisolon, triamcinolone
- ? Needle induced vasospasm ?
- Preponderance of complications associated with anesthesiologists and physiatrists
- (?) Vertebral artery dissection risks!
- *Scanlon et al, SPINE 2007, 1249-56*

### Cervical transforaminal steroid injections: more dangerous than we think? Recommendations

- Real time fluoroscopy (reduce risk of intravasculare uptake)
- Test dose of LA + Steroid (dexamethasone)
- Avoid needle manipulation while changing syringes
- No sedation - reaction of patient!!
- Screening for arterial dissection risk factors
- *Scanlon et al, SPINE 2007, 1249-56*

### Selective cervical nerve root blockage: safe and reliable technique: 1994-2007

- 4'612 patients (600/Year in last 6 Y)
- C - Arm fluoroscopy, 25 gauge needle
- Anterolateral approach, contrast control
- Experienced physicians
- 2% Lidocain, Celestone, Depot-Medrol
- No serious complication such as stroke, or spinal cord insult- Technique/Education
- *Schellhas et al: AmJNeuror,2007:1909-14*

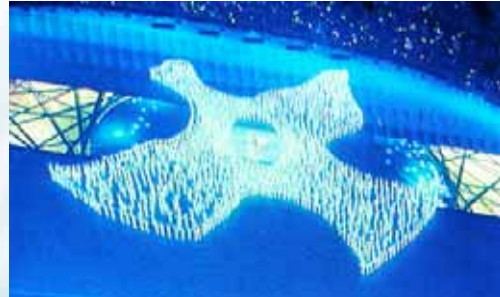
### Persönliche Erfahrung mit HWS Injektionen

- 1976, Kurs bei James Cyriax London
- 1987 Barrie Tait, Schüler Cyriax in der Schult Hess Klinik (KWS), Einführung LWS, Sakralblock
- 1988 Schock
- 1990 Keith Bush London
- 1991 Susan Lord in KWS (6 weeks personal teaching JD)
- 2001 Les Barnsley in der KWS (4 Weeks personal teaching FM)
- 2006 Keith Bush in der KWS - Erfahrungsaustausch

### HWS Gelenke, N-Wurzeln Infiltrationen 2004 – 10.11.2008

	DV/MÜ	Andere	Total
Gelenke	2777 (79%)	748 (21%)	3525
Wurzel	1218 (75%)	405 (25%)	1623
Total	3995 (78%)	1153 (22%)	5148

### KWS Injektionen HWS - Keine Komplikationen seit Einführung 1991



K. A, M, 52



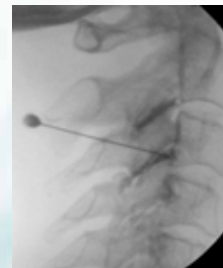
K. J, M, 64



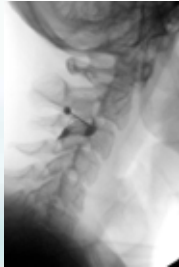
W. H, M, 81y



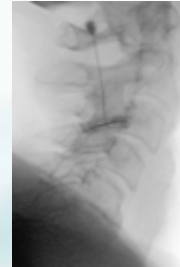
V. J, F, 68y



E. C, F, 45y



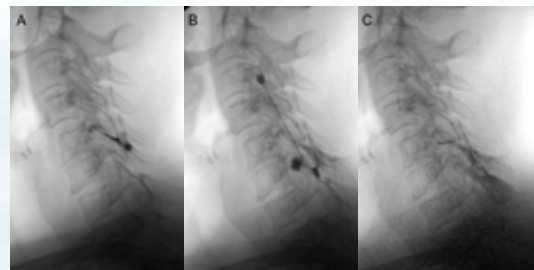
G. A, F, 78y



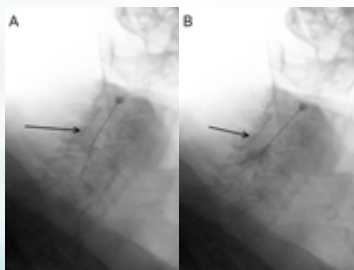
D. J, F, 57



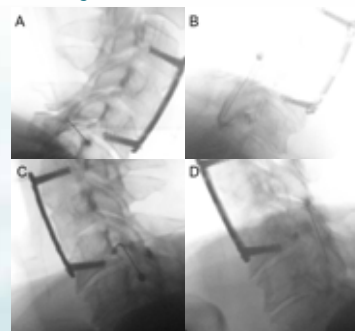
H.E, F, 70y.



S. H, F, 67y



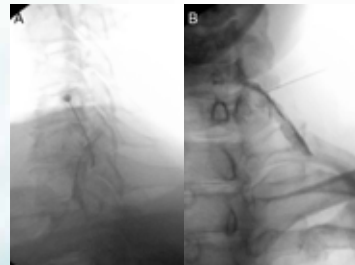
K. M, M, 60y



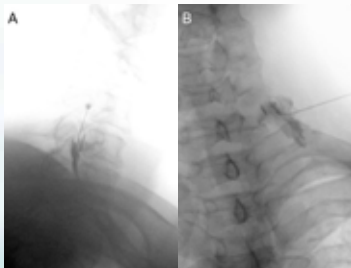
S. A, M, 47y



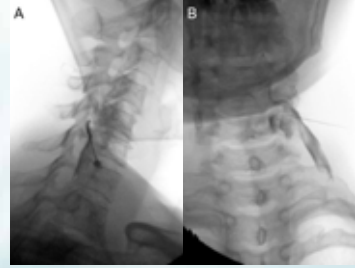
C. C, M, 64y



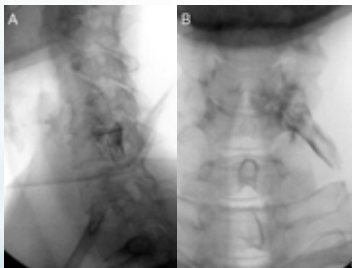
F. A, M, 51y



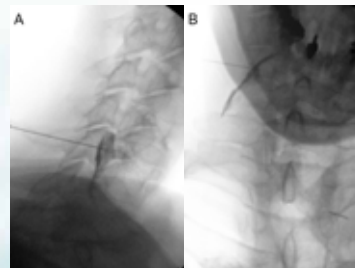
A. K, F, 46y



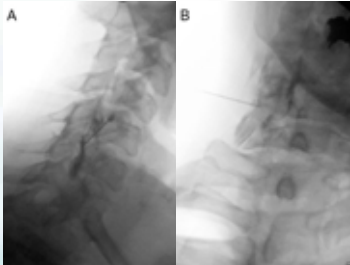
S. B, F, 44y



S. M, M, 58y



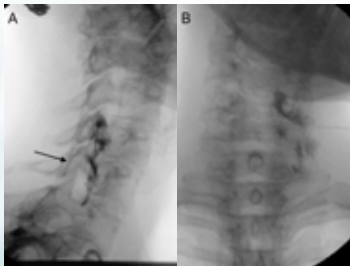
M. H, M, 59y.



S. P, M, 55y



T. C, F, 53y



Complications of Spinal Diagnostic and Treatment Procedures  
N.Bogduk, P.Dreyfuss, Ch.April et al  
Pain Medicine 2008

- Prescribed protocols have not been followed or correct techniques have not been used
- Some operators have an incomplete comprehension of what the procedure entails and have not paid attention to subtle but significant aspects of the procedure
- Complications are avoided by operators knowing the anatomy of the procedure and being able to recognize aberrations as soon as they occur
- A complication can be a catastrophe!

Zusammenfassung und Konklusion

- Komplikationen bei ärztlichen Anwendungen sind ein Problem
- Katastrophale neurologische Komplikationen führen zu persönlichen Tragödien (Patient und Arzt)
- Parallele zu Komplikationen der Manuellen Therapie
- 1980 Tetraplegie nach chiropraktische manipulation der HWS (Dvorak, von Orelli 1982)
- 1981 6 Monate learning Chiro. Osteo Colleges USA
- 1986 Anpassung der SAMM der Techniken-risikoarm
- 1993 Dvorak Loustalot
- Heute Manuelle Therapie Komplikationen reduziert

### Vorbeugung durch Aus-, und Weiterbildung Reglementierung, aber v.a Eigeninitiative

- Injektionen an der HWS sind gefährlich wenn:
- Autodidaktisch angewendet
- Falsche Technik
- Inadequate Instrumente, z.B. CT, Nadel
- Kristaline Steroide
- Mangelnde kontrollierte Erfahrung
- Und schliesslich die Indikationsstellung!

### Injektionen an der HWS sind effizient und risikoarm wenn:

- Indikation stimmt
- Gelernt in einer klinischen Umgebung von einem Lehrer mit ausgewiesenen Erfahrung
- Infrastruktur, Logistik, Technik up to date (C-arm)
- Gekonnte Technik durch geschulte Hand (Anatomie, Radiologie)
- Risikoarme Medikamente
- Aufklärung der Patienten



Danke für Ihre Aufmerksamkeit

