



# Case example

«To be or not to be Personage-Turner...»

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# Shoulder-arm-pain: Radiculopathy in MRI as an example



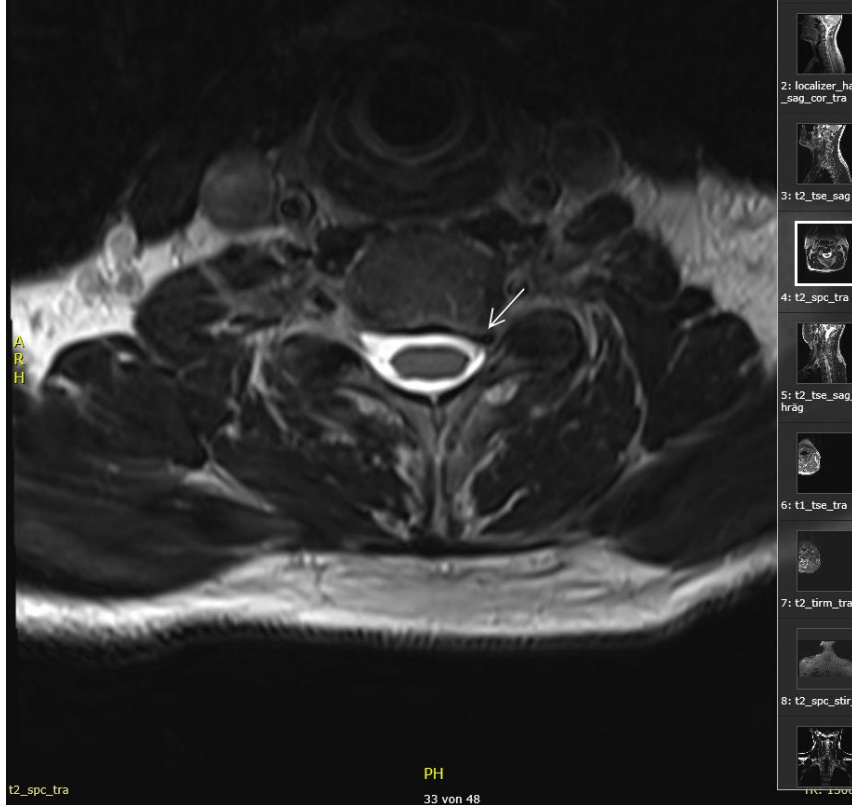
## Symptoms:

- Pain 9/10 NAS left shoulder blade/shoulder radiating to dorsal upper arm 01:00 AM after forceful neck-massage at the evening. Sleep impossible, «walking around like a tiger»
- Dysesthesia radial hand incl. dorsum of hand, thumb, radial forearm 1h after pain onset
- Weakness triceps > wrist extensors > finger extensors
- Relatively good pain reduction with self-medication during the same night

## Self-medication patient (physician KSSG, local Emergency-Pharmacy) →

- Tramadol 50mg                      2-3/day
  - Tizanidine 4mg                      2-3/day
  - Diclofenac 75mg                      2/day
  - Prednisolone 50mg                      2/day (10 days in total)
  - Pantoprazol 40mg                      1/day
- 
- Still slight dysesthesia 2 months after symptom onset, Pain almost vanished, slight weakness triceps visible (HHD arm extension 14kg left, 23 kg right)

# MRI 5 days after symptom onset



# MRI-findings



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Perivertebrale und mitabgebildete obere thorakale und zervikale Weichteile: Regelrechte Darstellung des mitabgebildeten Hirnstamms. Rechtsbetonte, geringgradige AC-Gelenksarthrose. Im Übrigen ebenfalls regelrecht.

## **BEURTEILUNG**

Fingerförmige Diskusextrusion HWK 6/7 mediolateral bis foraminal links mit rezessoforaminaler Kompression C7 links. Multifaktorielle Neuroforamenstenose HWK 4/5, hier mit allenfalls möglicher radikulärer Affektion bildgebend ohne eindeutige Kompression.

Kein Nachweis einer den Plexus brachialis links komprimierenden Raumforderung. Kein Hinweis auf eine Plexusneuritis.

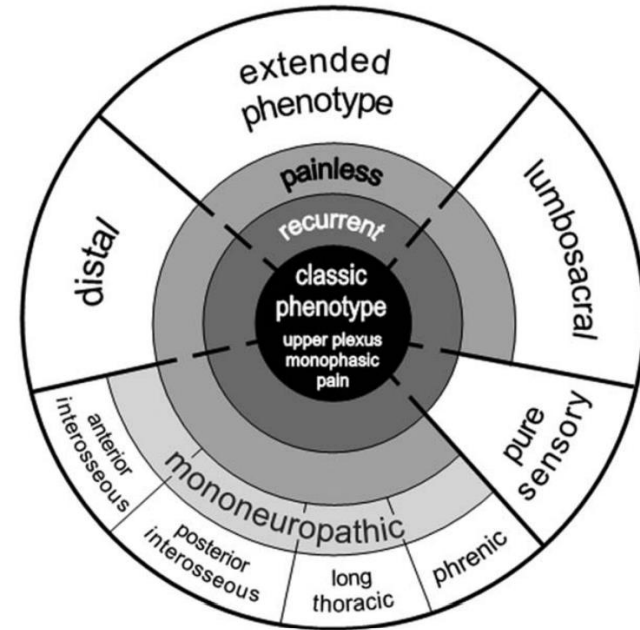
Freundliche Grüsse

- Patient believed to be experienced in neuromuscular disorders and argued:
- C7-Radikulopathy does not explain dysesthesia radial forearm and thumb
  - MRI often negative in neuritis, beside that immediate steroid treatment  
Prednisolone 100mg
  - Paravertebral EMG (C7) and triceps (C7) unremarkable 2 weeks after onset

# Often missed Personage Turner Syndrome



- Localisation of neuritis und symptoms very variable (anatomy plexus brachialis)
- Can be pure sensory
- Pain may be in the background
- Often classified as „nerve-compression-syndrome“ like CTS or „interosseus-anterior-syndrome“ → Hand surgeon often consulted



**FIGURE 2.** Illustration of the phenotypic variability of the neuralgic amyotrophy syndrome showing the several subforms that can occur. However, other nerves or combinations can be affected as well. (Reproduced with permission from *Nat Rev Neurol* 2011;7:315–322.<sup>6</sup>)

# Plexus neuritis: frequency of dysesthesia and paresis



**Table 4** Muscles affected

Muscle	Percentage affected	Cases examined
Infraspinatus	71.8	216
Serratus anterior	70	230
Supraspinatus	65.7	204
Biceps brachii	61	223
Rhomboids	54.2	179
Pronator teres	52.3	155
Brachioradialis	48.1	162
Wrist extensors	47.4	209
Deltoid	46	226
Triceps brachii	43.4	221
Wrist flexors	36.3	212
Finger extensors	36.3	193
Pronator quadratus	33.3	45
Deep flexors digits I and II	30.6	180
Dorsal interosseus	30	217
Adductor pollicis	27.4	84
Thumb extensors	27.2	151
Teres major	26.4	129
Abductor pollicis	26.3	133
Trapezius	19.9	221
Pectoralis major	14.8	209
Sternocleidomastoid	7.2	181
Paraspinal neck extensors	1.5	198

- within 24 h: 33.5 %
- 1–7 days: 39.3%
- 1–2 weeks: 14.1%
- >2 weeks: 13.1%

**Table 5** Distribution of sensory symptoms regrouped into anatomical regions

Characteristic	Percentage	Cases
(1) Lateral shoulder and/or arm	48.9	87
(2) Fingers or hand only	20.8	37
(3) Medial (fore)arm	18	32
(4) Neck, back and scapula	5.6	10
(5) Other	6.7	12

# Trigger factors



**Table 6** Antecedent events

Antecedent event	Percentage	Cases
Infection	43.5	50
Exercise	17.4	20
Surgery	13.9	16
Peripartal*	8.7	10
Vaccination	4.3	5
Stress (psychological)	4.3	5
Trauma	4.3	5
Other <sup>†</sup>	3.5	4

\*6 INA and 4 HNA patients; nine during puerperium, one in

**Table 7** Time to onset of attack per type of antecedent event

Event	Time to onset of attack and percentages				Available cases
	<24 h	1–7 days	1–2 weeks	>2 weeks	
Infection	8.2	65.3	16.3	10.2	49
Exercise	31.6	47.4	21.1	0	19
Surgery	37.5	50	6.3	6.3	16
Peripartal	11.1	55.6	22.2	11.1	9

## Pain killers in plexus neuritis



**Table 2** Analgesics used for initial pain and their effects according to the patients

Analgesic	Subjective effect			Cases
	Good (%)	Some (%)	None (%)	
Acetaminophen	20	60	20	5
NSAID	2.2	43.5	54.3	46
Opiates (including tramadol)	31.6	52.6	15.8	19
NSAID with any opiate	60.7	39.3	0	28
Any with co-analgesic*	4.3	69.6	26.1	23

\*Amitriptyline, carbamazepine or gabapentin.



# Plexusneuritis



**Questions? Comments? Remarks?**

