

# Case Report:

## Traumatic Lesion of the Left Brachial Plexus

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1 MR myelogram.

### Patient history

An 18-year-old patient was referred to our institution for evaluation of the integrity of the left brachial plexus 4 weeks after a severe traumatic event. The presented symptoms at the time-point of MR imaging suggested an involvement of the medial and inferior left brachial plexus.

### Sequence details

All images were acquired on our 1.5 Tesla MAGNETOM Espree with a combination of the dorsal elements of the head/neck and the spine matrix coils. The imaging protocol comprised a coronal single shot HASTE myelogram, sagittal T1w and T2w TSE, coronal T1w TSE and T2w TIRM, transversal fat saturated T2w TSE and MEDIC and finally 3D T2w TSE (*syngo* SPACE) in coronal orientation. No contrast media was applied in this patient.

**Coronal HASTE Myelogram:** TR / TE 4500 / 755 ms; FOV 350 x 350 mm; matrix 307 x 384; SL 60 mm; PAT 2; no averages; TA 1.8 s.

**Sagittal T2w TSE:** TR / TE 4274 / 113 ms; FOV 300 x 300 mm; matrix 314 x 448; SL 3 mm; no iPAT; averages 2; TA 4:13 min.

**Sagittal T1w TSE (not shown):** TR / TE 689 / 11 ms; FOV 241 x 300 mm; matrix 270 x 448; SL 3 mm; no iPAT; averages 3; TA 3:06 min.

**Transversal T1w TSE wit spectral fat saturation (not shown):** TR / TE 3740 / 93 ms; FOV 303 x 380 mm; matrix 204 x 512; SL 4 mm; no iPAT; averages 2; TA 3:56 min.

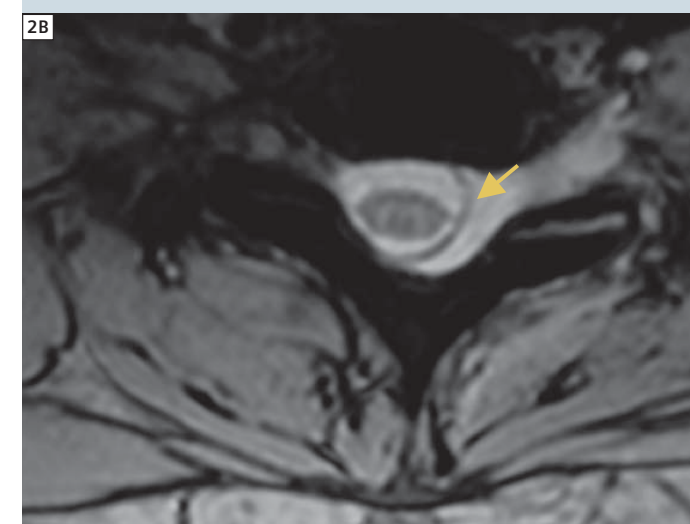
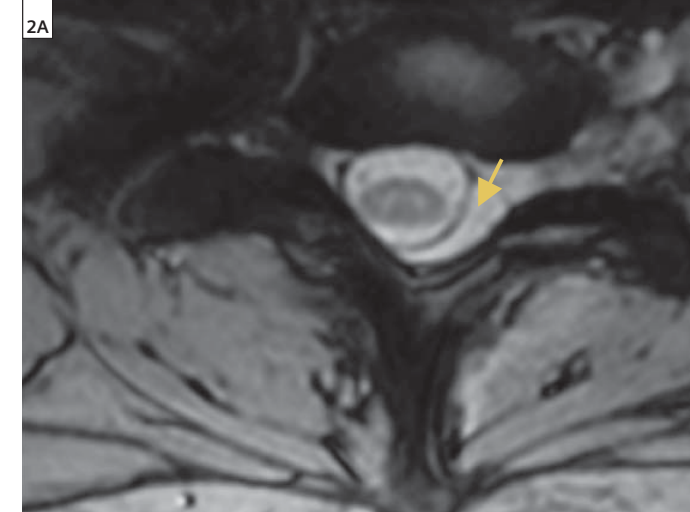
**Coronal T1w TSE:** TR / TE 639 / 20 ms; FOV 309 x 380 mm; matrix 250 x 512; SL 4 mm; no iPAT; no averages; TA 5:20 min.

**Coronal T2w TIRM:** TR / TE / TI 5940 / 36 / 160 ms; FOV 285 x 380 mm; matrix 192 x 512; SL 4 mm; no iPAT; no averages; TA 5:22 min.

**Coronal 3D T2w TSE (*syngo* SPACE):** TR / TE 1500 / 173 ms; FOV 280 x 280 mm; matrix 323 x 320; SL 1 mm; PAT 3; no averages; TA 3:56 min.

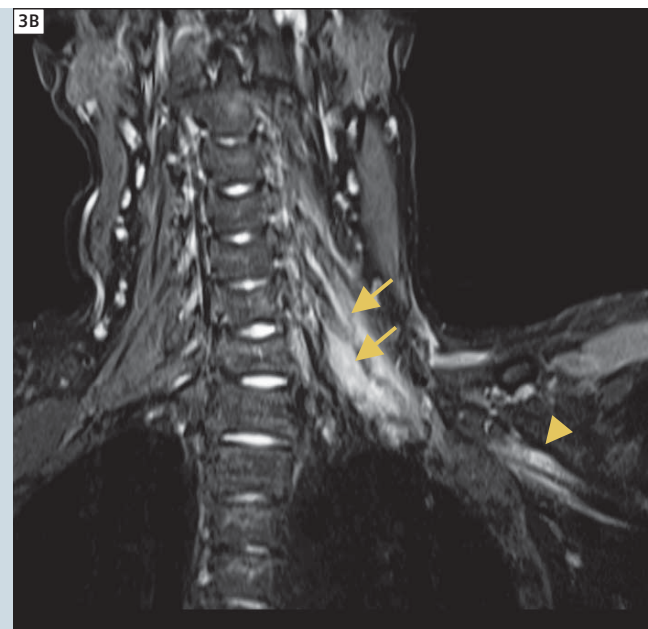
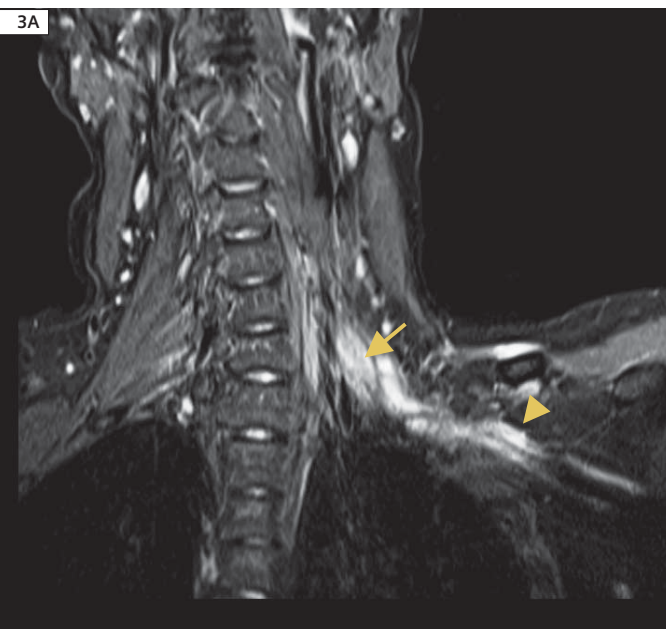
### Imaging findings

A large cystic lesion at the level of the 1<sup>st</sup> thoracic and 8<sup>th</sup> cervical nerve root is obvious on the HASTE myelogram (arrowhead in Fig. 1). Accordingly a displacement of the dural border and widening of the subdural space is also obvious (compare transversal T2w MEDIC images in figures 2A, B). A displacement of the spinal dural mater (Fig. 2) can be found on transversal and sagittal T2w images. Edema of the left

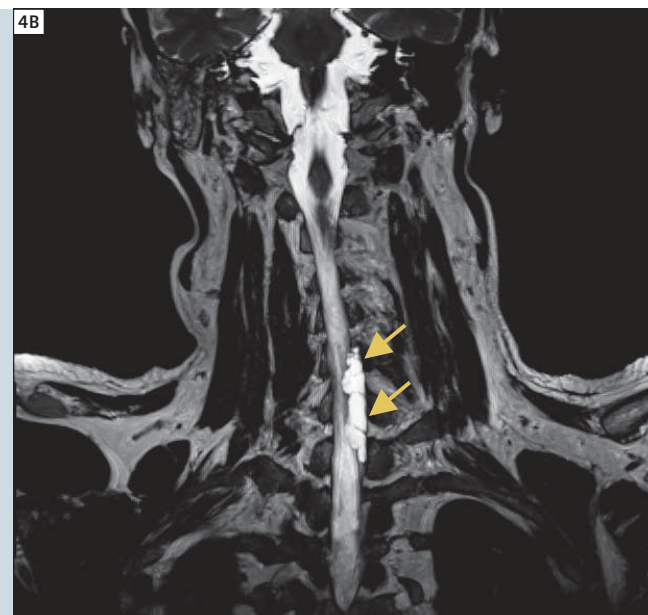
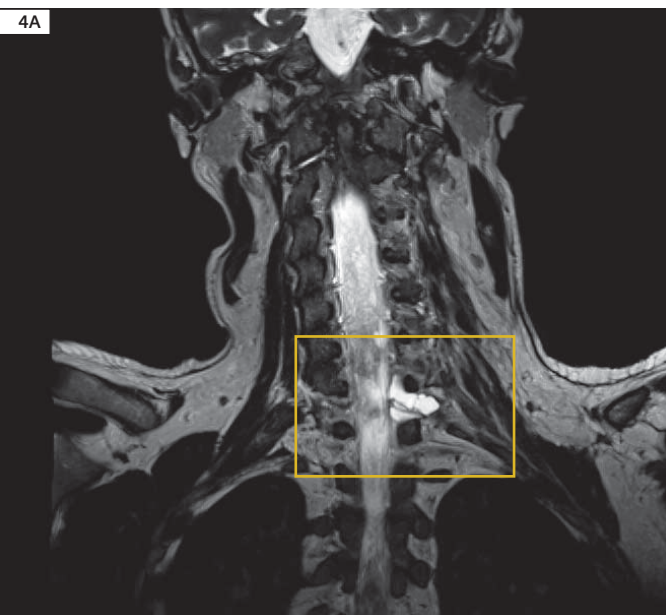


2 A and B transversal MEDIC, C sagittal T2w TSE.

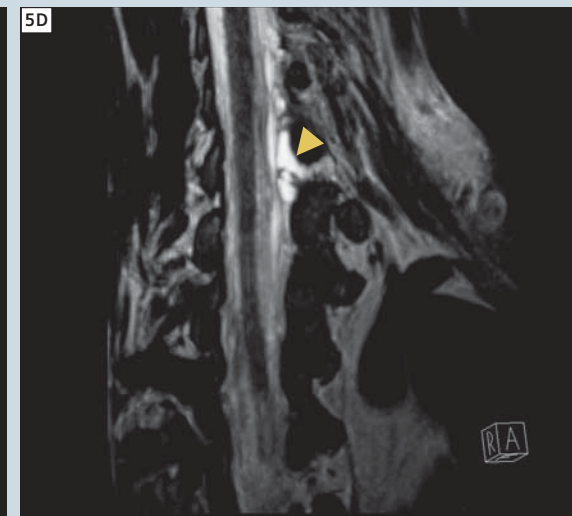
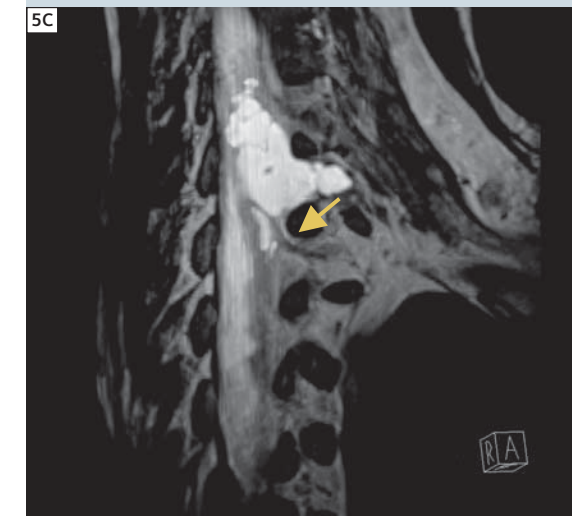
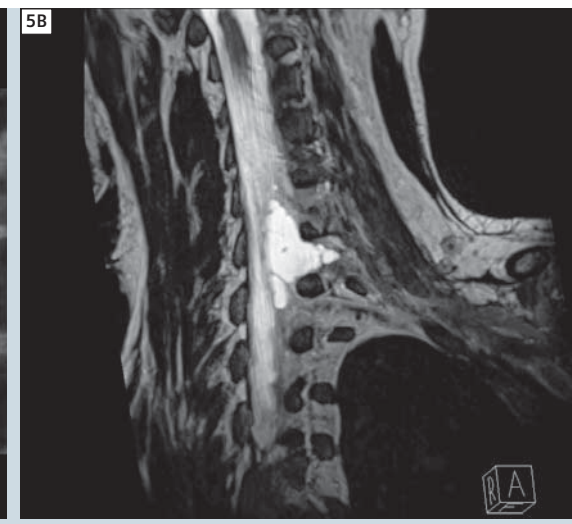
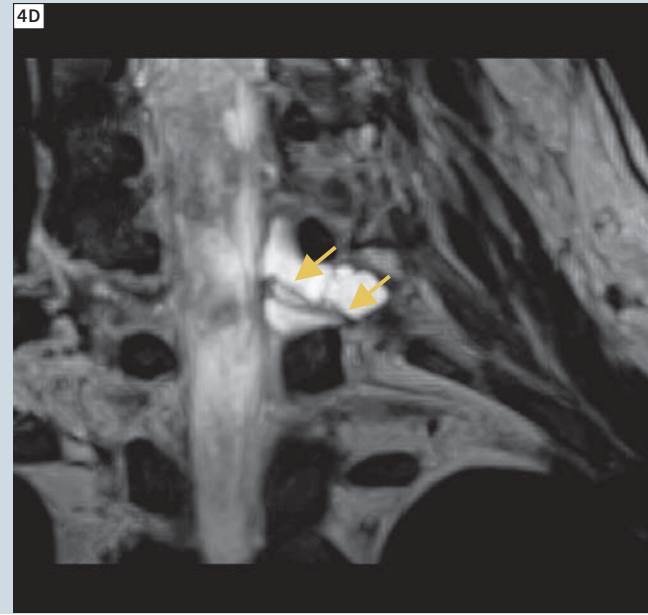
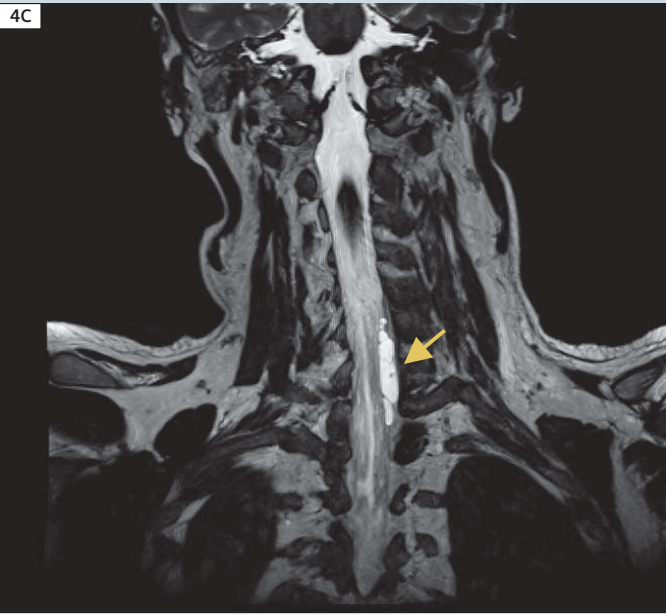




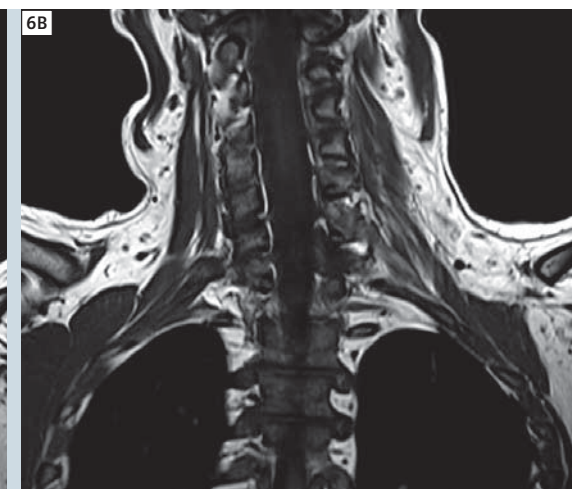
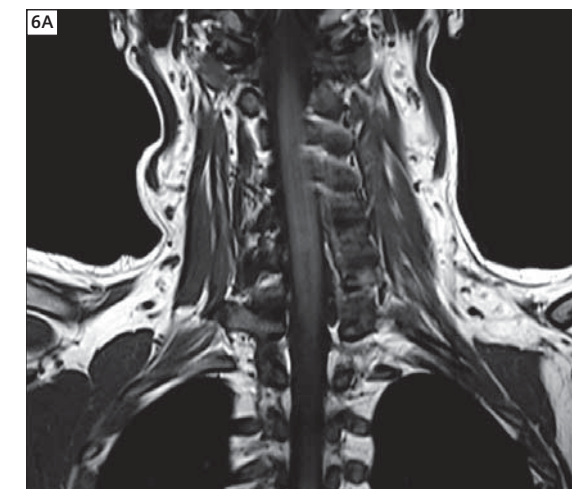
**3** Coronal TIRM.



**4** A, B, C coronal 3 mm thin-slice MPR based on a 3D T2w TSE scan (syngo SPACE).  
**D:** magnified detail of Fig. 3A.



**5** Oblique transversal (A) and coronal (B-D) 3 mm thin-slice MPR based on a 3D T2w TSE scan (syngo SPACE) for detailed visualisation of the nerve roots.



**6** Coronal T1w TSE.

cervical muscles (arrows Figs. 3A, B) and of the inferior and medial trunc of the brachial nerve plexus (arrowhead Fig. 3) is clearly delineated on the coronal T2w TIRM images. Best visualized in the 3D T2w TSE (Figs. 4, 5), a nearly complete rupture of the 8<sup>th</sup> cervical nerve root is the obvious diagnosis, together with an affection and at least

partial rupture of the 1<sup>st</sup> thoracic and 7<sup>th</sup> cervical nerve root. There is a regular alignment of the vertebra bodies and no evidence of a fracture. There are regular signal intensities of the myelon on the T1w and T2w images; there is no larger hemorrhage within either the myelon or the neural plexus.

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