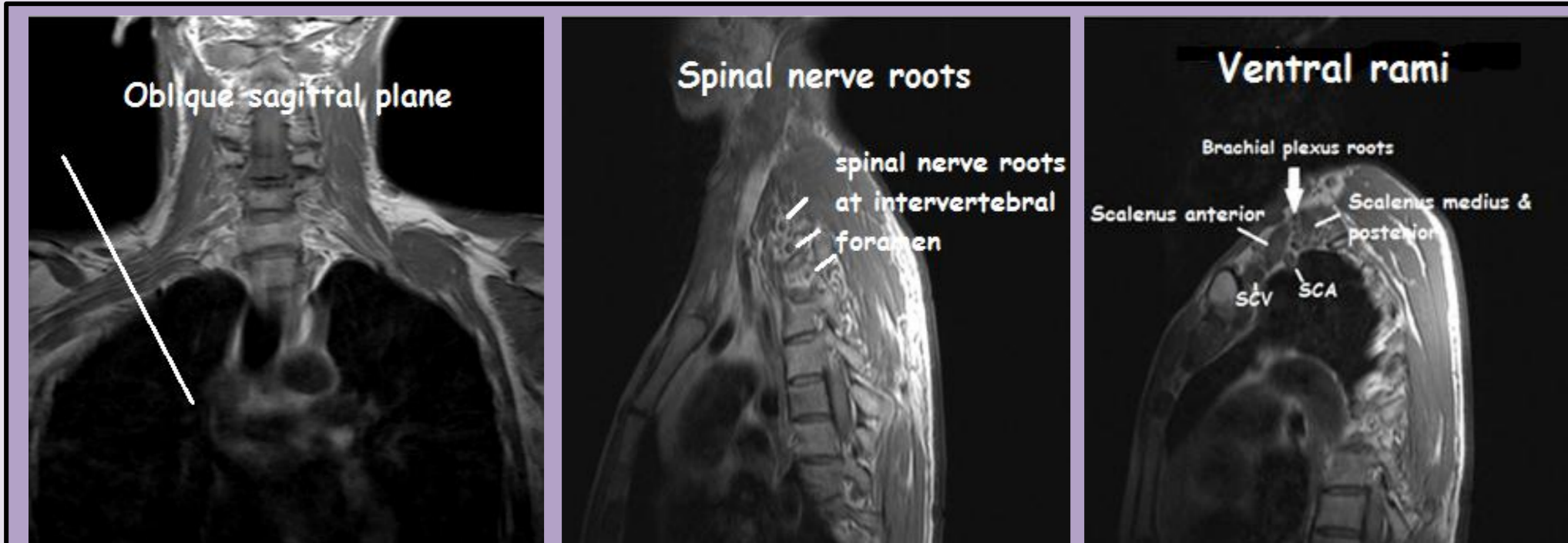




Imaging Brachial plexus –MRI wins hands down

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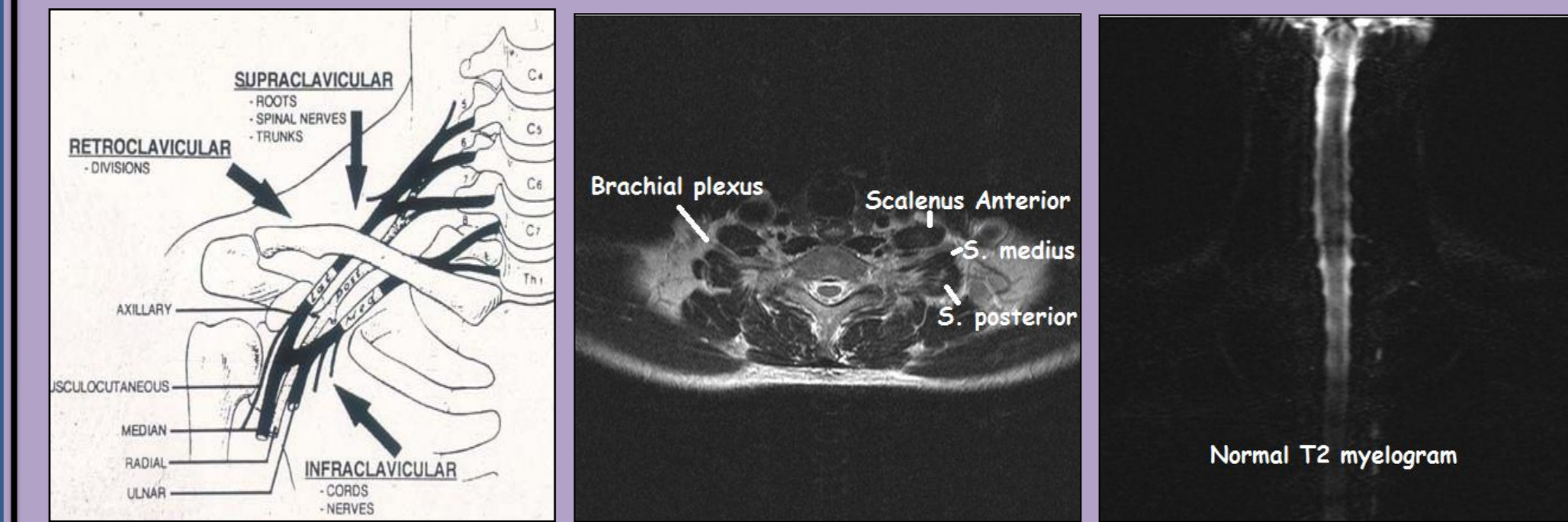


NORMAL ANATOMY

Formation : By anterior rami of spinal nerve roots C5 - T1
Location : between scalenus anterior and medius, surround subclavian artery

Parts :

- Trunks** - Upper [C5,C6], Middle [C7], Lower [C8,T1]
 - formed at the lateral border of scalenus medius
- Divisions** - Each trunk forms anterior and posterior divisions
 - formed at the level where clavicle crosses the trunks
- Cords** -formed at the lateral border of 1st rib
 -Lateral cord -by anterior divisions of upper & middle trunks
 -Medial cord -by anterior division of lower trunk
 -Posterior cord -by posterior divisions of all 3 trunks



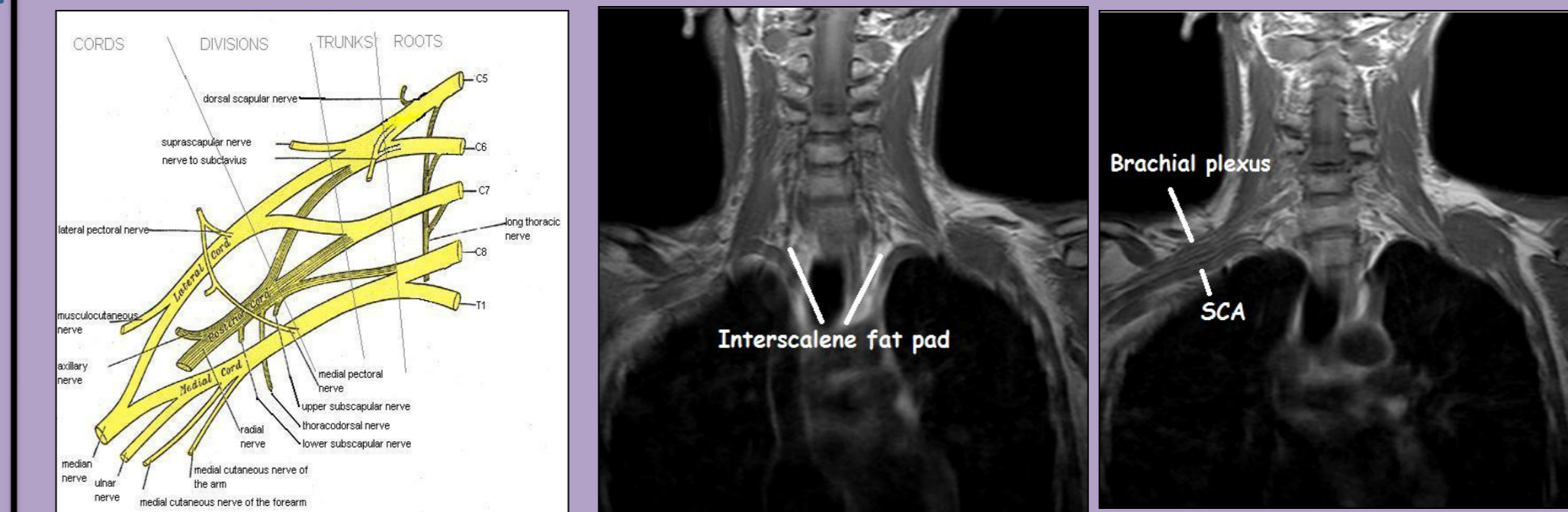
Segments of Brachial plexus

- Supraclavicular segment – Spinal nerves, Roots & Trunks
- Retroclavicular segment -- Divisions
- Infraclavicular segment -- Cords & Nerves

PLANE	SEQUENCE
Coronal	T1 W, STIR
Axial	T1 W, T2 W, STIR
Oblique sagittal	T1 W
Sagittal	T2 W

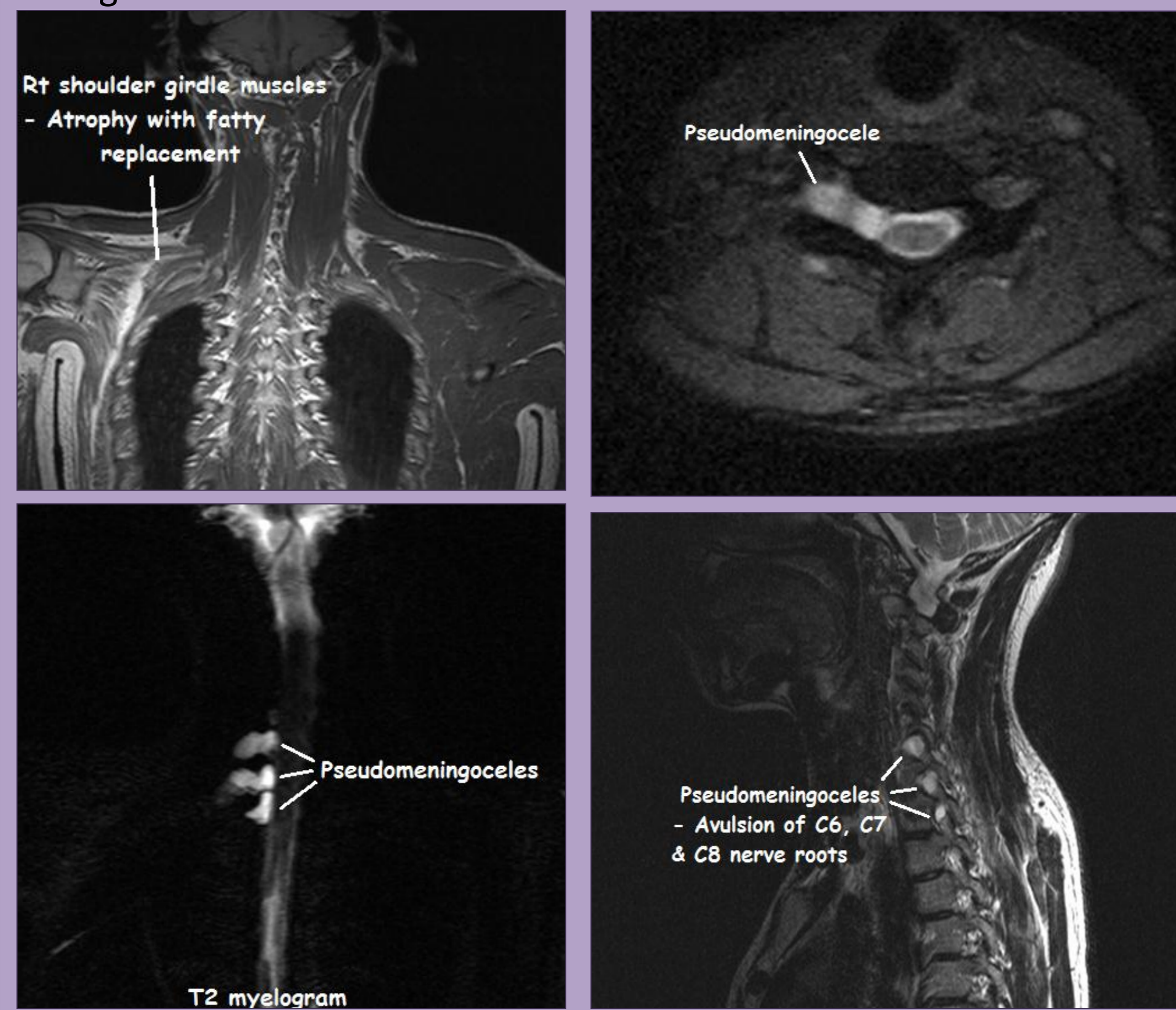
CAUSES OF BRACHIAL PLEXOPATHY

- Trauma
- Tumors – Primary
 -- Regional spread
 -- Metastases
- Inflammation
- Infection
- Drug reaction



TRAUMA – Root avulsion

32 yr old male with H/o RTA 5 months back
 MRI – Preganglionic avulsion Rt C6, C7, & C8 nerve roots shown by pseudomeningoceles with atrophy of Rt shoulder girdle and arm musculature

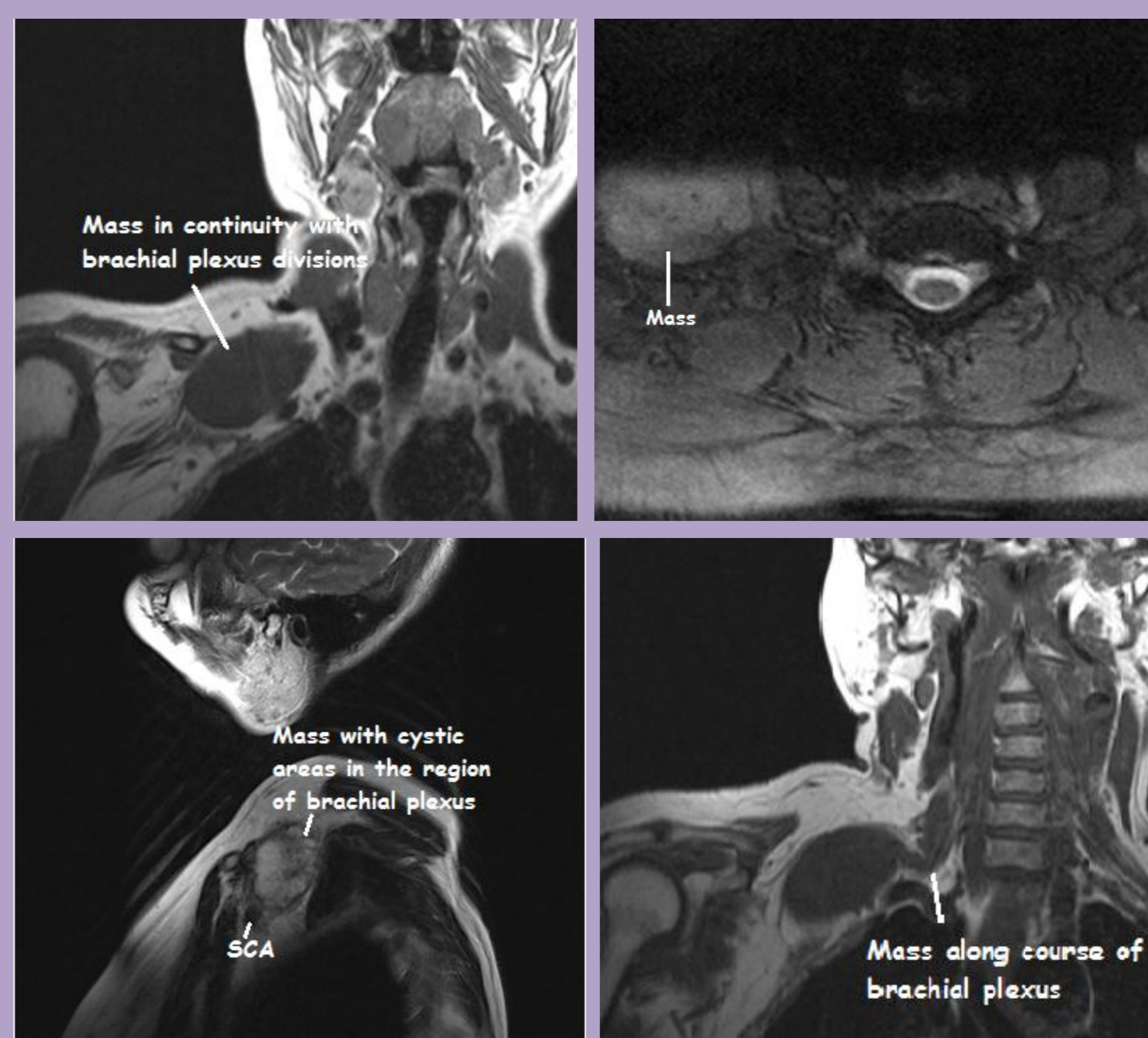


ADVANTAGES OF MRI IN IMAGING BRACHIAL PLEXUS

- Direct visualization of all parts of brachial plexus from roots to cords
- Precise determination of site and extent of involvement
- Reliable differentiation of preganglionic and post ganglionic injuries

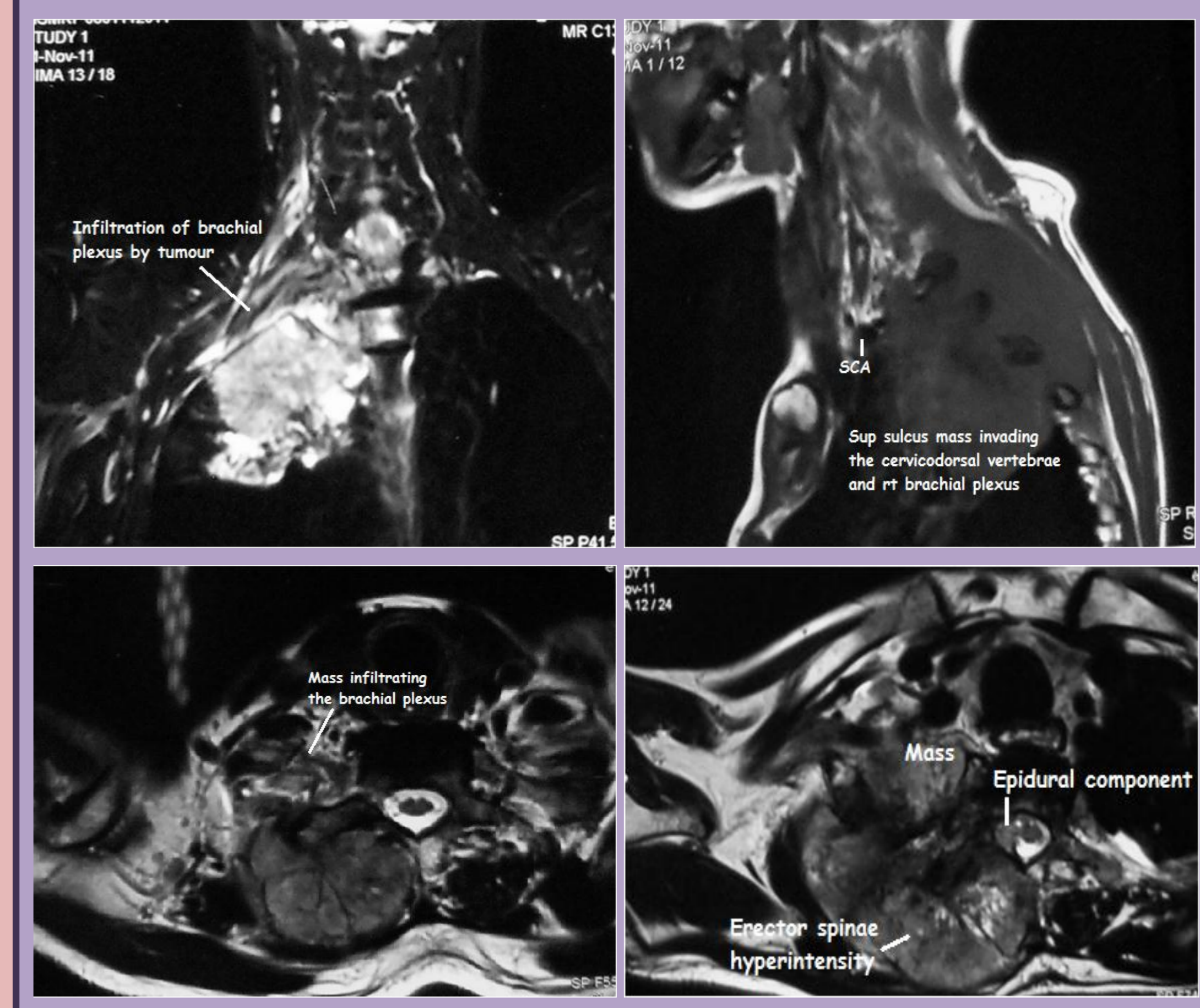
PRIMARY TUMOUR - Schwannoma

53 yr old female with insidious onset vague pain in the Rt shoulder region
 MRI – welldefined T1 isointense, T2 hyperintense lesion along the long axis of divisions and cords of brachial plexus – HPE -Schwannoma



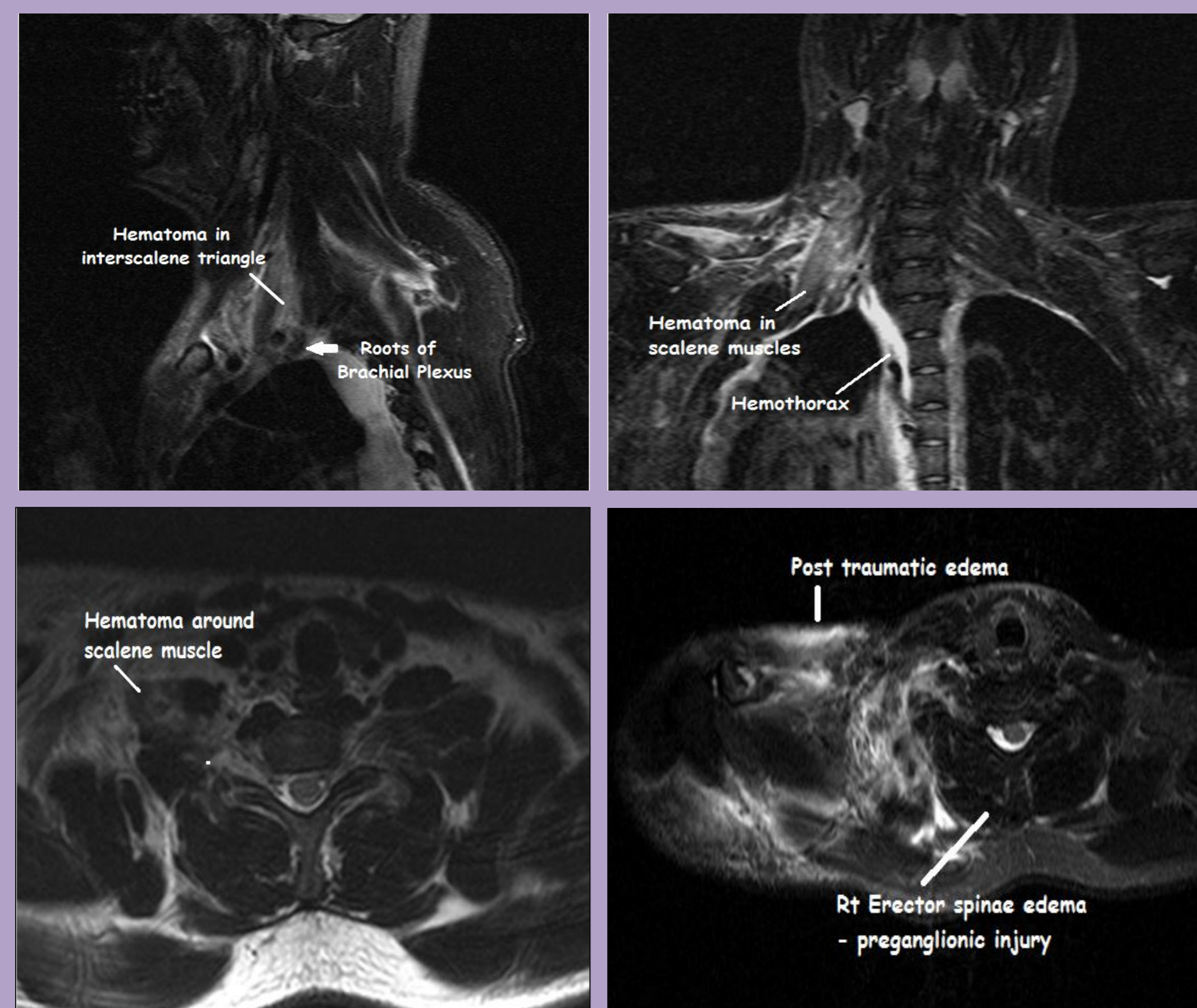
DIRECT SPREAD – Pancoast tumour

58 yr old male smoker with pain and weakness of Rt upper limb for two months
 MRI - large superior sulcus tumour invading the Rt brachial plexus, Rt erector spinae & encasing the Rt subclavian artery



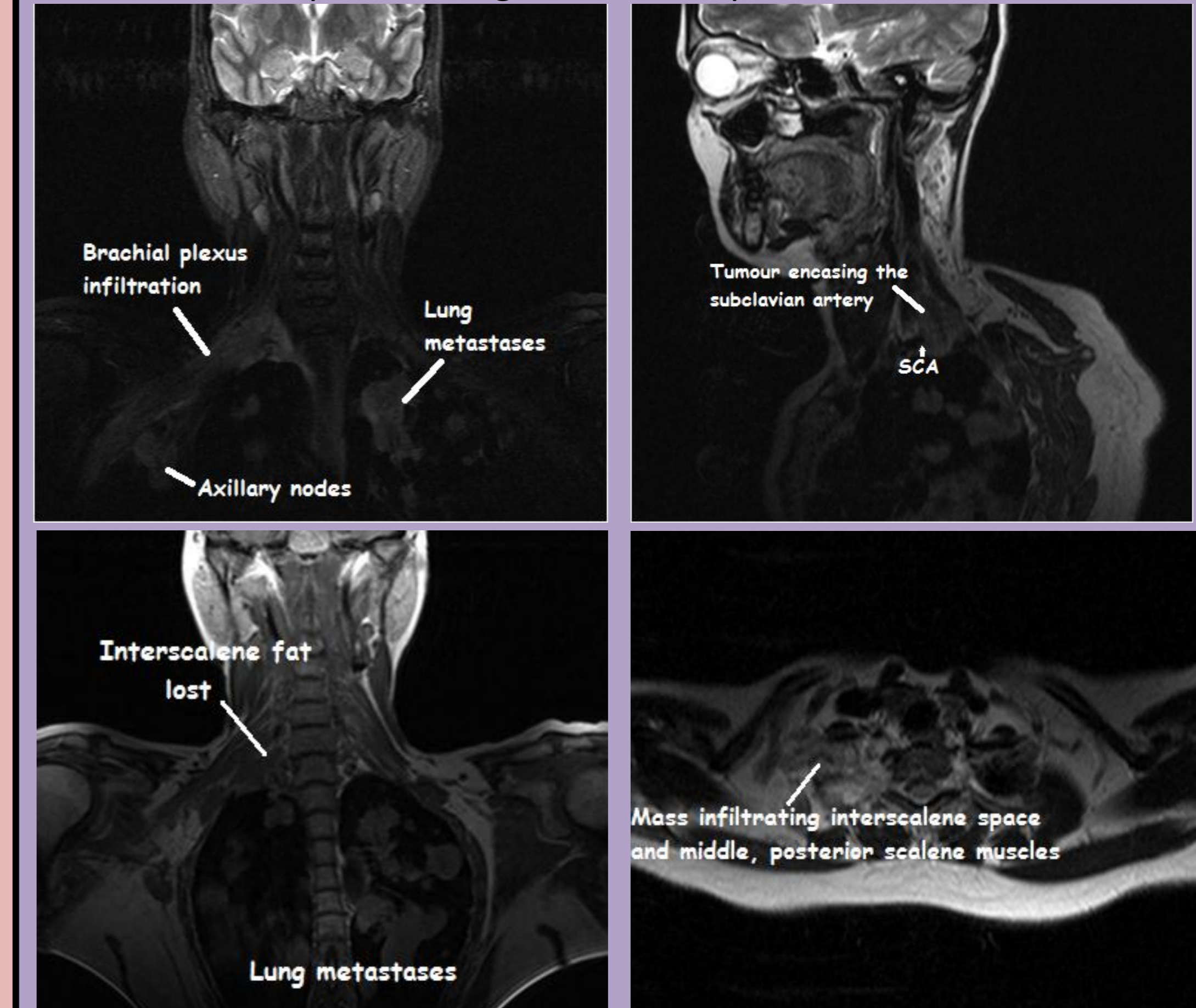
TRAUMA - Hematoma

20 yr old male with history of motor vehicle accident 5 days back
 MRI - Hematoma in the interscalene triangle causing compression of the roots and cords of brachial plexus on the right side



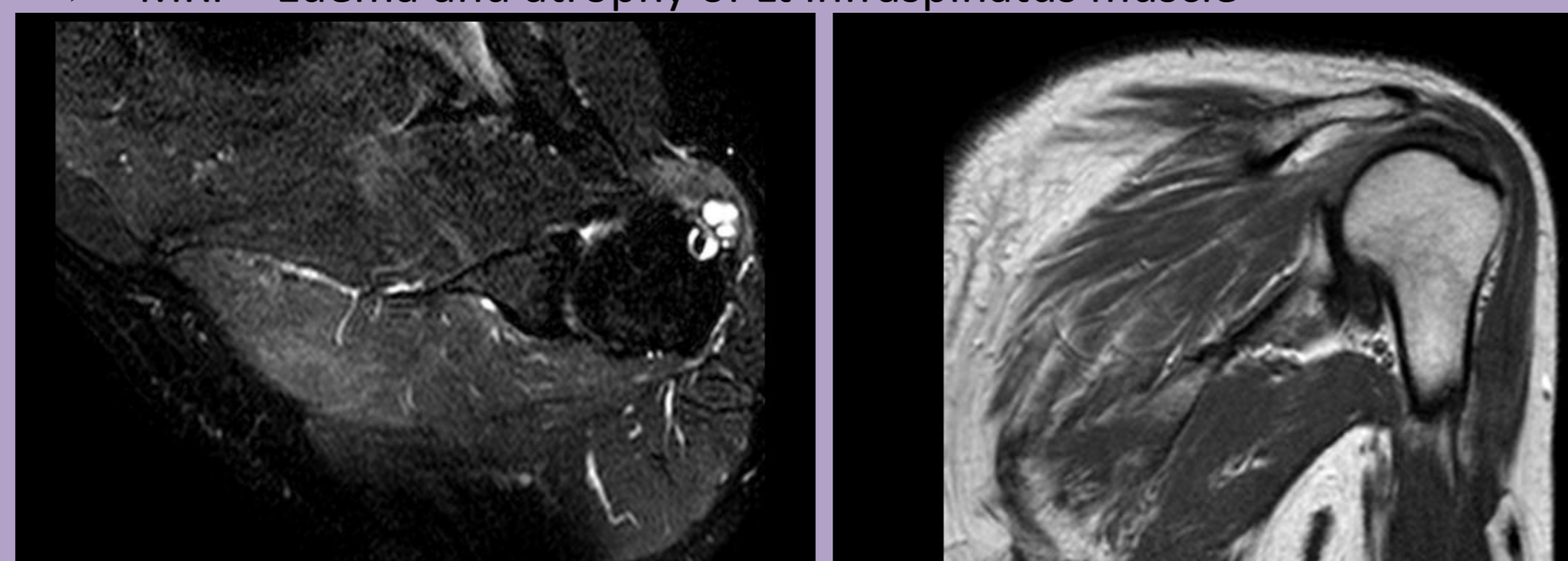
SECONDARIES – Breast cancer metastases

42 yr old female who had undergone MRM for Rt breast Ca presented with pain and weakness of Rt upper limb
 MRI – metastatic infiltrative Rt axillary nodal mass invading the Rt brachial plexus. Lung secondaries present



INFLAMMATION – Parsonage Turner syndrome

45 yr old male with acute onset severe pain and weakness in left upper limb
 MRI - Edema and atrophy of Lt infraspinatus muscle



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