

Invited Commentary

Magnetic resonance neurography of the brachial plexus

This article is not only good for plastic surgeons but well written to be useful for the radiologist.

It covers the complex anatomy of the brachial plexus, without which neither the radiologist will know where to look for the pathology, nor will the surgeon know where to operate.

The article gives a brief knowledge about sequences needed, which enable us to decide which sequence to look for: Anatomy (T1-weighted), and signal abnormality (STIR and T2 fat sat) for identifying and characterizing the pathology. Recent advances in MR imaging such as 3D image acquisition, diffusion-weighted imaging and diffusion tensor imaging have permitted better visualization of nerves and perineural soft tissues.^[1] The newer developments include diffusion-weighted imaging (DWI) and diffusion tensor imaging (DTI) and nerve specific contrast agents.^[2]

In traumatic brachial plexus injury, MRN helps to classify the level of injury, apart from clarifying whether it is old or recent, whether it is neuropraxia, (enlarged nerve with high signal in nerve) axonotemesis or neurotemesis.^[2]

In same sitting an MR angiography can be done to look for vascular injury. But to look for associated fractures a CT/X-ray (clavicular fracture) has to be done.

As regards tumors, it may be necessary to do adjuvant CT especially for extrinsic pathology.

In inflammatory pathologies affecting brachial plexus it is rightly written that MRI and MRN are the gold standards, as it is very difficult to pick up these kinds of pathologies on any other modality. The other important applications includes evaluation of postoperative changes.

Thoracic outlet syndrome, is a difficult diagnosis to make, as it is especially difficult to pinpoint the cause. This may need, or usually needs multi-modality approach.

This article covers all the aspect of imaging of brachial plexus with MRI particularly MRN being the gold standard, especially with 3 T MRI machines. Thus MRI, (MRN) acts like a guiding tool for the surgeon and needs to be used prior to holding the knife. Additionally, MRI is free of invasive and radiation issues.

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