



3 Coronal 3D-PSIF maximum intensity projection (MIP) of the thigh demonstrates the course of the sciatic nerve.

differentiating small peripheral nerves from adjacent vessels. In the extremities, and particularly distal to the knee and elbow joints, the commonly encountered T2 hyperintense subcutaneous and/or fascial edema restricts the identification of small peripheral nerves on conventional T2-weighted sequences. In contrast, the inherent diffusion sensitive gradients of 3D-PSIF enable selective suppression of the water signal of the stationary subcutaneous and fascial edema, thus improving the conspicuity of small peripheral nerves in the above areas. On the other hand, the inherent high TE values of 3D-PSIF images result in lower SNR as compared to conventional fat-saturated T2-weighted images, which remain superior in delineating the fascicular structure of the nerves. In post-contrast imaging, as compared to the three-dimensional volumetric interpolated breathhold examination (3D VIBE) sequence, the 3D-PSIF technique provides better visualization of the nerve fascicles, as well as more adequate assessment of the anatomic relationship between fascicles and enhancing intraneural and/or extraneural tumors. In summary, the 3D-PSIF sequence with high spatial resolution and high contrast provides reliable and objective identification of peripheral nerve anatomy and may be incorporated as part of the high-resolution MR study of peripheral nerves, whenever accurate nerve localization and/or pre-surgical evaluation are required.

ing following administration of intravenous gadolinium. In 3D-PSIF imaging, the acquisition of isotropic voxels enables the data set to be reformatted into any imaging plane without significant loss of resolution. The latter feature may provide confirmation of anatomic continuity, as well as identification of branching, focal enlargement, course deviation and/or displacement of peripheral nerves. In addition, maximum intensity projections (MIPs) can be

employed to further enhance the conspicuity of the nerves and provide images, which can be distributed to referring physicians for better depiction and understanding of nerve anatomy and pathology (Fig. 3). Table 1 displays the typical acquisition parameters employed for the 3D-PSIF sequence in a Siemens 3T MAGNETOM Verio scanner. In clinical practice, 3D-PSIF has proven more efficient than the conventional STIR and T2 SPAIR TSE sequences in



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- Imaging of peripheral nerves – status quo by Mirko Pham University of Heidelberg, Germany
- Peripheral nerve imaging from head to toe by Meng Quan-Fei. The First Affiliated Hospital of Sun Yat-sen University, Guangzhou, China

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