Selected interleaved 4-echo UTE acquisitions with a TE of 8 µs (A), 0.4 ms (B), 0.8 ms (C), 2.2 ms (D), 4.4 ms (E), 6.6 ms (F), 11 ms (G), 16 ms (H), 20 ms (I), 30 ms (J), echo subtraction (K), and bi-component T2* analysis for calcified cartilage (L), superficial cartilage (M) and meniscus (N).
3D UTE images of the tibia midshaft of a 42y volunteer in the axial (A) and oblique sagittal (B) planes, and the corresponding IR-UTE images (C, D). UTE images show a bi-component decay with a short $T_2^*$ of 0.34 ms (69% of the signal), and a longer $T_2^*$ of 7.05 ms (31% of the signal). A single $T_2^*$ was observed for IR-UTE images, suggesting the inversion and nulling of signals from pore water.
Clinical PD-FSE (A), T₂-FSE (B) and FLAIR (C) imaging as well as IR-UTE (D) imaging of a brain specimen from a 28 year old female donor with confirmed MS. MS lesions are hyperintense (thin arrows, A, B) on the PD-FSE and T₂-FSE images, and hypointense (thin arrows, C) on the FLAIR image, and show signal loss on the IR-UTE image (thin arrows, D). Complete myelin loss is obvious in regions indicated by the thin arrows. Partial loss of signal is seen in the IR-UTE image (thick arrow, D) where the PD-FSE, T₂-FSE and FLAIR images appear normal (thick arrows, A-C).
Clinical FSE (A) and IR-UTE (B) imaging of a forearm specimen. The ulna, radius and tendons show as high signal and contrast with the IR-UTE sequence, but zero signal with the FSE sequence.
UTE-MT imaging of the Achilles tendon of a 54y old healthy volunteer with the MT pulse off (A) and on (B), their subtraction (C), a MTR map (D) and clinical MT imaging (E). A MTR of ~40% was shown with UTE-MT, but not assesseable with clinical MT sequences.