Supplementary Figures

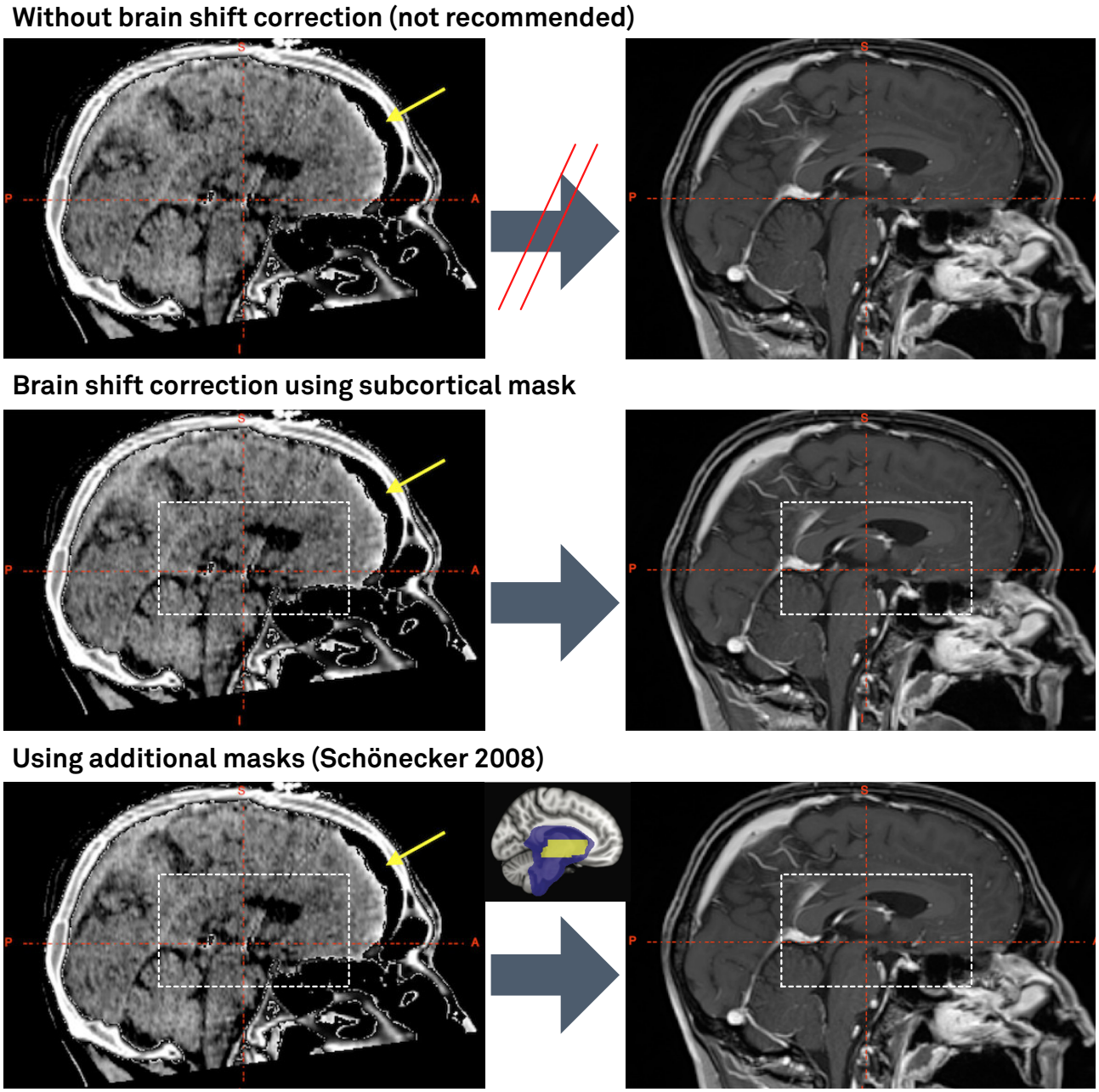

Figure S1: Brain shift correction approach. The top panel shows a whole-brain affine registration aligning a postoperative CT with frontal pneumocephalus (left) to a preoperative T1-weighted MRI (post gadolinium). Based on the pneumocephalus (yellow arrow), a nonlinear error results that is largest in frontal regions (at the site of the pneumocephalus) that may still be substantial in the regions of interest of DBS (figure 4). In the mid row, an additional refinement transform between the subcortical area delineated by the white dashed box is computed. Finally, in the third row, one or two additional refinement transforms between subcortical areas of interest are computed based on masks defined in (Schönecker et al., 2009). This approach gradually shifts the registration area away from the area nonlinearly distorted by pneumocephalus toward the subcortical regions of interest.