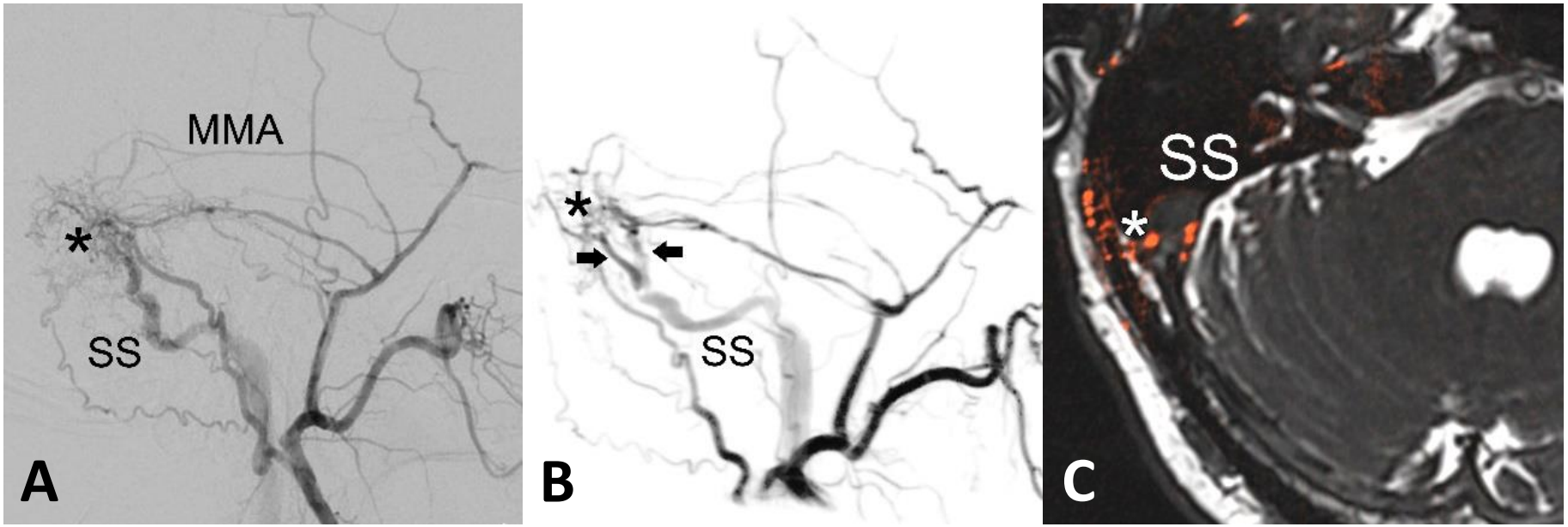

FIG 1. A DAVF between the middle meningeal artery (MMA), occipital artery and venous channels in the wall of the right lateral sinus with postthrombotic changes. Comparison of a standard lateral projection in 2D-DSA (A) and a slightly modified oblique projection of a virtual DSA-reconstruction (B) as well as an axial fusion image (C) derived from a 4D-DSA data set fused with a CISS MR imaging sequence. The possibility to choose an optimized projection on 4D-DSA improves the visualization of the arterial network at the fistulous point (asterisk) with connections to two venous channels (arrows) with Y-shaped convergence to a single venous channel in the wall of the sigmoid sinus (SS) with postthrombotic changes.

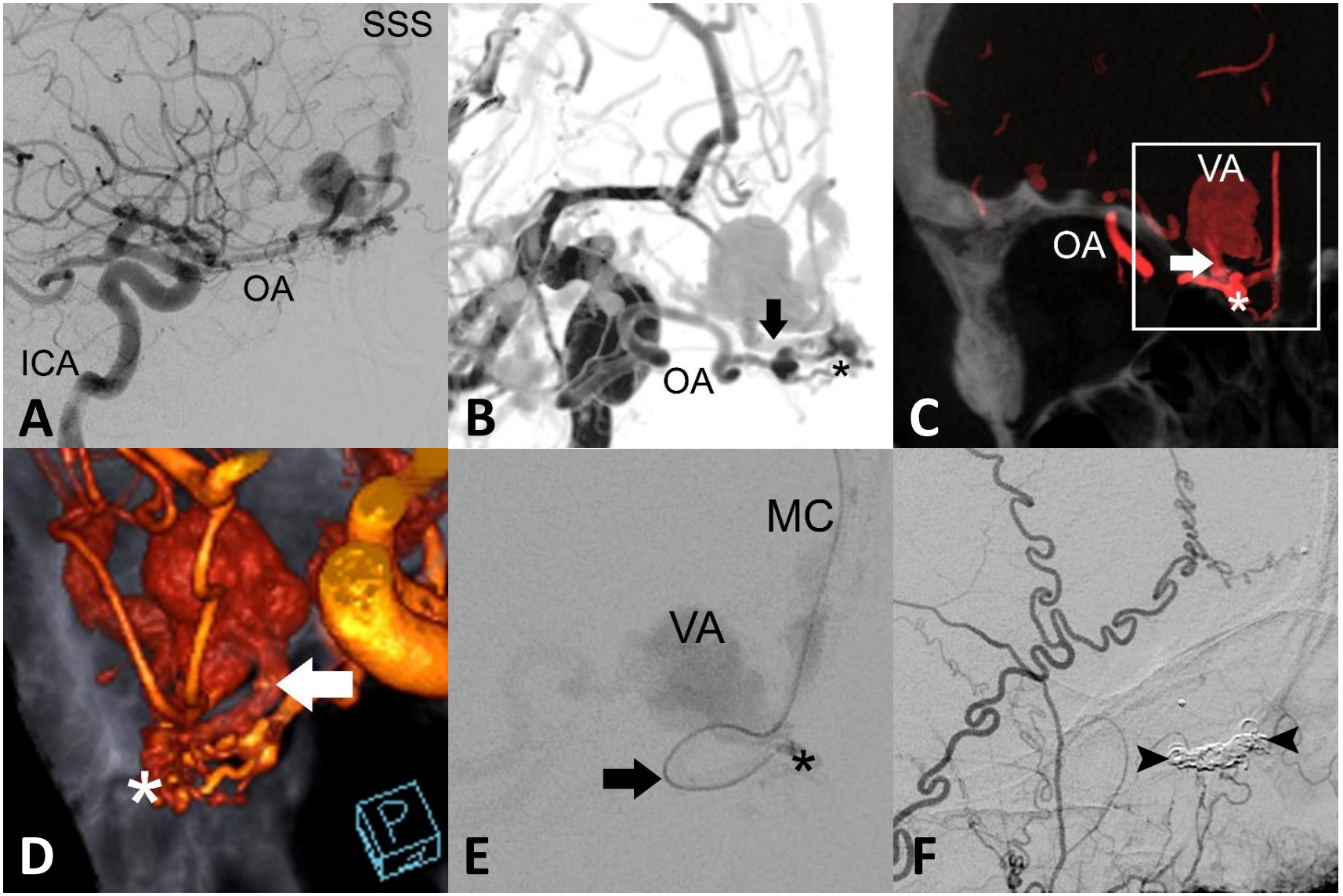

FIG 2. Comparison of a lateral standard projection in 2D-DSA (A) with an oblique projection in virtual DSA derived from 4D-DSA (B) and 4D-DSA coronal CT MIP (C) and volume rendering with an overlay of skull in an oblique zoomed-in projection (D). The 2D-DSA standard projection shows the frontoethmoidal DAVF supplied by the ophthalmic artery (OA) with drainage into the cortical veins and then the superior sagittal sinus (SSS). 4D-DSA images offer better visualization of the frontoethmoidal fistulous point (asterisk) and its anatomic relation to the draining vein (arrow), which is obscured in the standard projection of 2D-DSA, and the following venous aneurysm (VA). Note that the fistulous point is located within the olfactory groove. For the endovascular therapy, a transvenous approach is selected with superselective positioning of the microcatheter (MC) in the draining vein past the venous aneurysm (E), close to the fistulous point. After coiling (arrowheads) of the draining vein (F) we achieved complete embolization of the DAVF, as seen in the control angiogram of the external carotid artery.