The accidental placement of a back-wall stitch is a mistake easily made by microsurgeons during an end-to-side (ETS) anastomosis, which is technically more difficult compared with an end-to-end (ETE) anastomosis. The thrombogenic effects of a back-wall stitch may aggravate the already existing turbulence and therefore thrombus-prone ETS anastomosis. We investigated this dangerous combination by applying a purposeful back-wall stitch model (PBWS) in an ETS microarterial anastomosis model in various configurations the rat carotid and femoral arteries. We performed femoral and carotid artery bypass grafts via two ETS anastomosis. Carotid (n=28) and femoral (n=28) artery groups were equally divided into four different subgroups according to PBWS placement: Control (no PBWS) and 30-degree, 60-degree, and 90-degree subgroups with PBWS located at 30, 60, and 90 degrees, respectively. We found that there were no significant patency differences with respect to vessel type, PBWS placement, or time of assessment. The results of our current study and previous studies demonstrate that a PBWS in the ETS anastomosis does not have a major effect on thrombus formation. We think that an inadvertent back-wall stitch in the ETS anastomosis may not be a significant cause of thrombosis alone but in combination with retained thrombogenic material into lumen can contribute to thrombus.