Abstract: The aim of the study was to develop a reliable and reproducible arterial aneurysm model for microsurgical training and further research with dimensions comparable to those encountered in aneurysms in humans. The arterial aneurysm models were created microsurgically at the bifurcation of the abdominal aorta using a graft of the carotid artery in 20 Wistar rats. The aneurysms were created successfully and no complications occurred. The average volume of this arterial aneurysm model was 35.19±5.64 mm (3). The time required to create this kind of aneurysm was 192±14.4 min. The central zone of blood inflow into the aneurysm was not affected by any thrombus formation. The presented model at the aortic bifurcation in the rat is reliable and immediately available for microsurgical and technical training as well as for scientific studies on aneurysms. Since this kind of model also reproduces arterial aneurysms, basic techniques such as suturing and microtechniques needed for the dissection and repair of vessels can be taught during its creation.