SUPPLEMENTARY METHODS (online only).

Literature search. A literature search was performed of the PubMed database for articles in English published from 1980 to present using the following compound search terms: *aortic interposition and rat,* and *aortic interposition and guinea pig*. Information collected included (1) anesthetic and preoperative medications, (2) procedural information, including the anastomotic technique, and (3) processing of the specimens, including the duration of implantation and the methodology to quantify neointimal hyperplasia. The details of anastomotic technique included (1) method of aortic transection, (2) suture size and type used to fashion the anastomosis and the number of stitches used, (3) type of anastomosis (end-to-end vs end-to-side), and (4) any further pertinent information, including vessels ligated during aortic dissection.

Postoperative care. Animals were supplemented with oxygen by a nose cone until they were recovered from anesthesia and kept warm with the warming pad overnight. On postoperative day 1, animals were anesthetized briefly with isoflurane and given 3 mL of normal saline and carprofen (rats: 5 mg/kg subcutaneous [SQ]; guinea pigs: 1.5 mg/kg SQ). Guinea pigs also received ranitidine (5 mg/kg SQ) for gastroduodenal ulcers prophylaxis. The animals' incision, weight, food intake, bowel function, bladder function, and degree of pain were assessed daily for 1 week, then weekly until euthanasia. Necropsy was performed when death occurred <30 days.

Morphometric analysis and assessment of intimal cellularity. To assess intimal formation and nuclear density, digital images were collected with light or fluorescent microscopy, respectively, using a Zeiss Imager-A2 microscope (Hallbergmoos, Germany). ImageJ software (National Institutes of Health, Bethesda, MD) was used to quantify the intimal area or to count nuclei in the intimal layer. Nuclear density was reported as the number of nuclei per area (nuclei/μm^2).

Statistical analysis. We evaluated the difference in intimal formation at each location for each animal model and compared the distribution of neointimal hyperplasia between animal models. A power analysis was performed to determine the number of animals required for each experimental group. Five or more animals per group was required to detect a difference of 20% between animal models with a power of 0.8, a standard deviation of 10%, and an α of .05. Results are expressed as mean ± standard error of the mean. Differences between two groups were analyzed using the Student *t*-test, and differences between multiple groups were analyzed using one-way analysis of variance with the Student-Newman-Keuls post hoc test for all pairwise comparisons. SigmaStat software (Systat Software Inc, San Jose, Calif) was used for the analysis. To detect interaction of animal model and intimal formation, a two-way analysis of variance with the Holm-Sidak post hoc test for all pairwise multiple comparisons was performed (SigmaStat). Statistical significance was assumed when P was ≤.05.