cardiothoracic and general vascular procedures, such as aortic artery grafting or aneurysm, which necessitate long abdominal incisions. Additionally, it could be performed if a major vessel is injured during any of the common laparoscopic procedures before transforming the technique to an open one.

Author Disclosures: M. Elshazly: Nothing to disclose.

PS240.

Factors Affecting the Response of the Vascular Endothelium to the Microsuturing Trauma

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Objectives: Many researchers have investigated microvascular anastomoses by scanning electron microscope (SEM); however, there are neither reports on classifying these anastomotic types according to the SEM results nor about studying the factors that affect these results.

Methods: Sixty rat femoral arteries were anastomosed using four different techniques: simple interrupted, continuous, sleeve, and autogenous arterial cuff. The anastomotic sites of each group and other two intact femoral arteries were examined by SEM.

Results: Intimal disruption and rebuilding of the blood vessel endothelium after microvascular anastomoses depend upon anastomotic time; suture placement, either intraluminal or extraluminal; and mechanical factors. Accordingly, the simple interrupted suture technique has the highest degree of intimal disruption and the lowest degree of regeneration, the continuous and cuff anastomoses have better rebuilding with partial neoendothelial coverage of the cut ends, whereas the sleeve anastomosis has the best regeneration with complete coverage of the cut ends by the new endothelial cells.

Conclusions: This study shows that intimal disruption and rebuilding of blood vessel endothelium after microvascular anastomoses depend upon three factors: anastomotic time, suture placement, and mechanical factors.

Author Disclosures: R. Bakry: Nothing to disclose.

R1: Rapid Paced Paper Session I

RR1.

A Propensity Adjusted Analysis of Open and Endovascular Thoracic Aortic Repair for Chronic Type B Dissection: A 20-Year Evaluation

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Objectives: Optimal treatment of chronic type B aortic dissection (CBAD), whether open (DTAR) or endovascular (TEVAR), is controversial, suggesting a comparative analysis is warranted.

Methods: Of 1049 patients (1993-2013) undergoing descending aortic repair, 122 required intervention for CBAD 29.2 ± 34.9 months after the initial acute event and formed the study cohort (mean age, 59.7 years). Those with a degenerated residual type A dissection were excluded. Eighty-eight had extent IIIB CBAD, and 11 had intramural hematoma. Indication for surgery included aneurysmal degeneration (105), rupture (8), acute on chronic dissection (8), and extension (1). Open strategy included descending (71) and thoracoabdominal repair (19), with hypothermic arrest used in 66. TEVAR was performed with (two) or without (30) visceral debranching. A treatment strategy propensity score incorporating time since initial acute event, CBAD extent, year of intervention, age, and selected comorbidities was constructed for multivariable analysis.

Results: Early outcome included: 30-day mortality, 4% (n = 5); permanent paraplegia, 3% (n = 4); stroke, 2% (n = 2); dialysis, 7% (n = 8); and tracheostomy, 3% (n = 4). Visceral aorta intervention (OR, 3.5; $P = .03$) and mean aortic diameter (OR, 1.1; $P = .001$), but not treatment type ($P = .6$) independently predicted an early composite outcome consisting of these variables. Ten-year survival was 56.2%. Baseline creatinine (HR, 1.7; $P < .001$) and peripheral vascular disease (HR, 2.4; $P = .03$), but not treatment type ($P = .2$) predicted late mortality. Ten-year freedom from aortic rupture/need for reintervention was 76.7%. Treatment efficacy was improved after DTAR (3-year freedom, 96.2% vs TEVAR, 71.8%; $P = .004$), and this was confirmed after Cox regression (TEVAR HR, 3.2; $P = .04$).

Conclusions: Intervention for chronic type B aortic dissection can be performed with excellent results, either by an open or endovascular approach. The higher rate of treatment failure after TEVAR warrants modification of the current device design or endovascular approach before broad application of this treatment strategy.

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RR2.

Benefit of EndoAnchors in Endovascular Aneurysm Repair: Analysis by Indication for Use

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Objectives: EndoAnchors (EAs) have been used as an adjunct to endovascular aneurysm repair (EVAR) in patients with challenging aortic neck anatomy. The aim of this study was to assess outcome by indication for EA use.

Methods: A total of 319 patients were enrolled at 43 sites in ANCHOR, a prospective, multinational, real-world study of EA implantation for first-time EVAR (primary