

with open repair; however, concerns about long-term durability remain. This analysis evaluated the incidence of secondary interventions (SI) after TEVAR and determined functional outcomes and survival.

**Methods:** A retrospective review was completed of all TEVAR patients from 2004 to 2011. Patients with SI were further analyzed. A validated questionnaire (Eastern Cooperative Oncology Group score) was used to assess ability to perform activities of daily living. Kaplan-Meier analysis was used to estimate survival.

**Results:** Of 587 patients, 78 (13%) required SI at median  $\pm$  standard deviation of 4.7 months ( $11.5 \pm 16.5$ , Fig 1). Seventeen (22%) underwent multiple SI. Forty (6.8%) initially underwent endovascular revision, with six (15%) requiring subsequent open reintervention. Thirty-eight (6.5%) initially had open revision, with six (16%) requiring subsequent endovascular reoperation. Median time to endovascular SI was 7.6 months ( $16.0 \pm 18.8$ ), which was significantly longer than time to open SI ( $1.9$ ;  $6.9 \pm 12.3$  months;  $P = .01$ ). SI incidence differed significantly amongst various indications ( $P = .005$ ): acute dissection (24.7%), chronic dissection (16.5%), degenerative aneurysm (14.1%), traumatic transection (8.3%), penetrating ulcer (1.5%), and other miscellaneous (thoracoabdominal aneurysms, mycotic aneurysms, pseudoaneurysms, 17.8%). Most common indications for SI after acute/chronic dissection were persistent false lumen perfusion and/or proximal/distal extension of disease, whereas for degenerative aneurysms, SI was performed primarily to treat type I/III endoleaks. SI patients had more comorbidities ( $P < .0001$ ) and greater number of postoperative complications after the index TEVAR ( $P < .0001$ ) compared with those without SI. No survival difference was noted between the groups (SI vs No SI;  $P = .93$ ; Fig 2). At median follow-up of 20.4 months (range, 6-52 months), functional status was significantly better among patients first treated with endovascular SI compared with open revision (Eastern Cooperative Oncology Group scale:  $1.7 \pm 2.1$  vs  $2.7 \pm 2.1$ ;  $P = .04$ ).

**Conclusions:** SI after TEVAR is common, particularly amongst patients treated for acute dissection, which underscores the need for vigilant surveillance. Although significant functional impairment is noted after SI for TEVAR, patients can be successfully treated with open and endovascular techniques with no significant increase in long-term mortality.

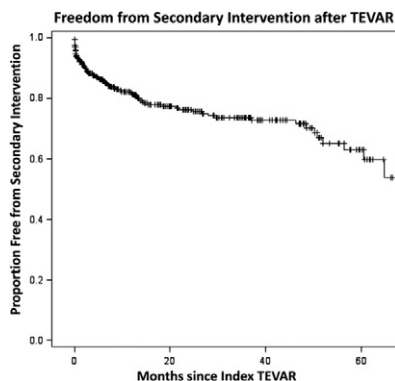


Fig 1.

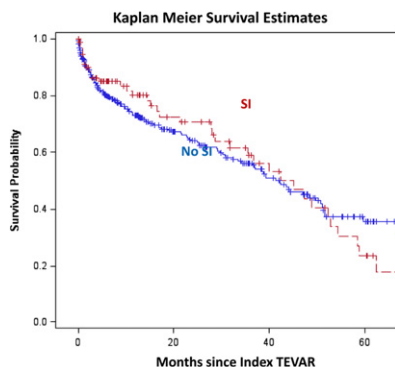


Fig 2.

#### Treatment and 4-Year Follow-Up of 163 Stanford Type B Aortic Dissections: A Single-Center Experience

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**Objectives:** Endovascular treatment of Stanford type B aortic dissection is becoming more prevalent. This study analyzed the data of patients in our department with this type of dissection, and compared the results of endovascular treatment vs medical treatment.

**Methods:** Between January 2005 and April 2009, 163 patients with the diagnosis of Stanford type B dissection were studied. Mean age was  $52.71 \pm 11.46$  years. All patients were treated with antihypertension drugs when admitted. The indication for routine endovascular repair was progressive blood flow into a false lumen. Indications for emergency endovascular repair were impending rupture, uncontrollable hypertension, malperfusion syndrome, and intractable pain. Patients were followed up after discharge.

**Results:** Total mortality was 9.82% (16 of 163). Ninety-three patients were treated by endovascular repair, and 70 were treated conservatively. The longest follow-up time was 50 months. Kaplan-Meier curve was used to compare the survival rate of the two groups. Log-rank test showed that the survival rate of the endovascular repair group was higher than in the conservative treatment group ( $P = .004$ ). Cox regression was used to demonstrate the most significant factors related to risk of death. Patients with conservative treatment ( $P = .005$ ) along with lower oxygen saturation in the blood ( $P = .0004$ ) had higher mortality.

**Conclusions:** In short to medium follow-up, the survival rate of endovascular repair to Stanford type B dissection is higher than medical treatment.

#### Ambulatory Percutaneous Endovascular Abdominal Aortic Aneurysm Repair

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**Objectives:** Percutaneous endovascular aneurysm repair (PEVAR) has been associated with less groin wound complications and shorter operation times, but same day discharge (SDD) has not been reported. We have been performing PEVAR (Preclose/Proglide technique) since 2005 and noted that all early failures occurred and were addressed in the operating room (OR), with no further events overnight. The goal of this study was to report the feasibility and safety of ambulatory PEVAR in selected patients.

**Methods:** Consecutive patients who underwent elective EVAR between March 2011 and July 2012 were reviewed. Patients who were functionally independent, without significant comorbidities, and favorable anatomy for PEVAR were given the option to be discharged the evening of the PEVAR after 6 hours of bedrest, if the procedure was uneventful. Causes for discharge delay and early outcomes were analyzed.

**Results:** During the study period, 58 patients underwent abdominal aortic aneurysm (AAA) repair, and 46 (mean age,  $71.0 \pm 10.4$ ; range, 59-97 years) had elective EVAR. Exclusions included one rupture, five acute presentations, two fenestrated EVAR, and four open AAA repairs. Thirty-seven (77%) had bilateral percutaneous, six had unilateral percutaneous, and the remaining had bilateral endarterectomy. Percutaneous success rate was 98% (2 conversions for inadequate hemostasis). Mean length of stay was  $1.4 \pm 1.5$  days (median, 1 day) with no 30-day mortality or readmission. Fourteen patients (30%) were discharged the same day, 17 (37%) on postoperative day 1, 12 (26%) on postoperative day 2/3, and three (7%) stayed  $\geq 4$  days. There were no groin complications. Of the 17 patients who were discharged on postoperative day 1 (instead of the same day), 10 were due to significant COPD, CAD, or advanced age, three transportation issues, two inability to void, and two patient preference. Patients in the SDD group were significantly younger ( $66.4 \pm 5.6$  vs  $73.1 \pm 11.3$  years,  $P = .041$ ), had smaller AAA ( $5.2 \pm 0.6$  vs  $5.8 \pm 1.0$  cm,  $P = .07$ ), less blood loss ( $126 \pm 103$  vs  $253 \pm 209$  mL,  $P = .037$ ), and OR time ( $80 \pm 26$  vs  $143 \pm 106$  minutes,  $P = .036$ ). There were fewer ASA 4 patients in the SDD group (21% vs 44%,  $P = .139$ ). Most patients had general anesthesia in the SDD group (79% vs 72% for the rest,  $P = .634$ ).

**Conclusions:** Ambulatory PEVAR is feasible and safe in 30% of patients undergoing elective EVAR, who do not have excessive medical risk, have good functional capacity, and undergo an uneventful procedure. If the hospital reimbursement issues can be resolved, decreasing the length of stay would potentially improve cost-effectiveness of EVAR.

#### Fenestrated and Branched Endovascular Aortic Aneurysm Repair Among Octogenarians

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**Objectives:** Octogenarians are frequently denied open repair of complex abdominal aortic aneurysms (AAAs) and thoracoabdominal aortic aneurysms (TAAA) because of their increased surgical risk. Fenestrated endovascular aortic aneurysm repair (FEVAR) is an alternative to open repair of complex AAAs in high-risk patients. The purpose of this study was to assess perioperative outcomes of FEVAR among octogenarians.