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Surgical Site Infection in Venous Surgery: The Benefit of a Single Dose of Preoperative Antibiotic

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Objectives: High ligation and division (L/D) of the saphenofemoral junction (SFJ) can protect against the danger of thromboembolism (TE) associated with greater saphenous vein radiofrequency ablation (GSV RFA). Although L/D SFJ is regarded as a clean procedure, surgical site infection (SSI) can offset its TE benefit. We questioned if SSI associated with SFJ L/D could be minimized by a single pre-operative dose of antibiotic (ABx).

Methods: A retrospective cohort study of ABx in GSV RFA and L/D SFJ was conducted in a population of 953 consecutive limbs (April 2002 to December, 2010; Venous Severity Score 1 to 3) with the single outcome measure of SSI. Controls (April 2002 to July 2006) received no ABx. SSI was categorized based on required therapy: 0-none, 1-oral ABx, and 2-hospitalization for intravenous ABx and/or wound debridement. Statistical analysis included unpaired Student's t-test for quantitative measures, Fischer's exact for categorical variables, and multiple logistic regression to assess effect of Abx on SSI after adjustment for age, body mass index (BMI), and diabetes (DM).

Results: Total SSI and groin SSI rates are shown in Table 1. All category 2 SSI (n=8) occurred in controls and the majority were located in the groin. BMI and DM significantly increased risk for groin SSI. ABx significantly reduced both overall SSI risk [OR:0.55; (95%CI: 0.33, 0.90), p=0.02] and groin SSI risk [OR:0.36; (95%CI:0.17, 0.76), p=0.01]. Finally, ABx eliminated category 2 SSI (p=0.045).

Conclusions: L/D SFJ and RFA, when treated as a clean procedure and not prophylaxed with Abx, carries a significant risk of SSI. While DM and BMI are patient-associated risk factors, a single dose of preoperative antibiotic significantly reduces the rate of all SSI and eliminates the danger of serious infection requiring hospitalization.

Surgical Site Infection

	Total (n=953)	No ABx (n=504)	ABx (n=449)	p-value
Groin (n/%)	37/3.88	27/5.36	10/2.23	0.02
Total (n/%)	78/8.18	50/9.92	28/6.24	0.04

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Timing of TEVAR Does Not Influence Mortality After Hybrid Repair of Thoracoabdominal Aneurysms

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Introduction: Thoracoabdominal aneurysm (TAA) repair carries significant morbidity and mortality. A hybrid approach involving open visceral vessel debranching followed by TEVAR may decrease perioperative mortality; however, the optimal timing of TEVAR is controversial. The study goal was to determine the effect of TEVAR timing on mortality.

Methods: ICD-9 codes were used to retrospectively identify patients with intact TAA who underwent visceral vessel debranching and TEVAR from 2004-2007 in the Medicare database. Patients were divided into two cohorts: immediate and delayed TEVAR. The primary outcome was mortality; secondary outcomes included morbidity, length of stay(LOS), and cost.

Results: Four-hundred-ninety-four patients were identified (75% immediate v. 25% delayed). There was no difference in 30-day mortality (7.3% immediate v. 4.0% delayed, p=0.29). Immediate cohort patients were more likely to be males (70% immediate v. 53% delayed, p=0.006) and without chronic renal insufficiency (9.5% immediate v. 21.5% delayed, p=0.006). Postoperative morbidity, including renal insufficiency, was similar in both cohorts except that the delayed group developed more pulmonary complications (14.3% immediate v. 24.1% delayed, p=0.042). As expected, delayed cohort patients had a longer hospital LOS (10.1±10.9 immediate v. 19.8±17.0 delayed, p<0.001) and ICU LOS (5.1±8.5 immediate v. 10.6±13.5 delayed, p<0.001). The mean hospitalization cost was also higher (\$176,552 immediate v. \$273,355 delayed, p<0.001). The 3-year actuarial survival was similar between cohorts (59% immediate vs. 57% delayed, p=0.524).

Conclusions: The timing of TEVAR for hybrid TAA repair does not influence mortality or postoperative renal function. However, delaying TEVAR is associated with increased pulmonary complications, longer LOS and higher hospitalization cost.

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