Abstract Text:

Background: Vascular thrombosis with flap loss is the most dreaded complication of microvascular free tissue transfer. Thrombolytic agents such as tissue plasminogen activator (TPA) have been used clinically for free flap salvage in cases of pedicle thrombosis. Yet, there is a paucity of data in the literature validating the benefit of their use.

Methods: A retrospective review of the breast reconstruction free flap database was performed at a single institution between the years of 1991-2010. The incidence of vascular complications (arterial and/or venous thrombosis) was examined to determine the role of adjuvant thrombolytic therapy in flap salvage. Pathologic examination was used to determine the incidence of fat necrosis after secondary revision procedures.

Results: Seventy-four cases were identified during the study period. In 41 cases, revision of the anastamoses was performed alone without thrombolytics with 38 cases of successful flap salvage (92.7%). In 33 cases, anastamotic revision was performed with adjuvant thrombolytic therapy, and successful flap salvage occurred in 28 of these cases (84.8%). Thrombolysis did not appear to significantly affect flap salvage. Interestingly, only two of the salvaged flaps that had received thrombolysis developed fat necrosis while eleven of the non-thrombolysed flaps developed some amount fat necrosis (7.1% vs. 28.9%, $p<0.05$).

Conclusions: The decreased incidence of fat necrosis may be attributable to dissolution of thrombi in the microvasculature with the administration of thrombolytics. Although the use of adjuvant thrombolytic therapy does not appear to impact the rate of flap salvage, their use may have secondary benefits on overall flap outcomes.