treated with direct arterial anastomosis, \( P = 0.86 \)). Finally, digits replanted with a vein graft survived 53% of the time compared to the 52% survival rate of those replanted without the use of a vein graft, which was also not statistically different (\( P = 0.94 \)).

**Summary Points:**
- Vein grafts were utilized for arterial repairs in nearly half of all dysvascular digits that underwent revascularization or replantation.
- There was no statistical difference in the survival rate of dysvascular digits treated with a vein graft versus those that underwent direct arterial anastomosis.
- The need for a vein graft for a large zone of injury should not be considered a relative contraindication to perform revascularization or replantation of dysvascular digits.
- If the zone of injury is large, surgeons should have a low threshold to use vein grafts for the revascularization or replantation of digits.

**PAPER 62**

Clinical Paper Session 9
Vascular/Soft Tissue/Tumor — Saturday, September 9, 2017 • 10:27—10:32 AM
Evaluation/Diagnosis; Treatment; Basic Science

**Involvement of Thrombin and Osteopontin in the Pathophysiology of Dupuytren’s Contracture**

**Hypothesis:** Pathophysiology of Dupuytren’s contracture (DC) remains unclear.\(^1\)\(^2\) Thrombin is a multi-functional serine protease and a potent inducer of fibrogenic cytokines in various cells. Osteopontin (OPN), one of ECM proteins, can also modulate a variety of cellular activities associated with various chronic inflammatory disease including myocardial fibrosis after ischemic heart disease, liver cirrhosis and lung fibrosis.\(^1\)\(^2\) Additionally, the presence of the thrombin-cleaved form of OPN is well correlated with various inflammatory disease activities.\(^3\)\(^4\) We herein presented that myofibroblast (MF) expressed osteopontin, especially of thrombin-cleaved form, and the administration of thrombin induced differentiation into MF of fibroblast derived from Dupuytren’s fascia.

**Methods:** The study group consisted of 25 patients (4 women and 21 men) who underwent resection of the palm fascia for DC. The patients’ mean age was 69.1 years (range, 58 to 82 years). All patients signed an informed consent document, and the study was approved by the institutional review board. The palm amputation was performed in all cases. Osteopontin expression was measured using immunohistochemical staining and Western blotting after treatment with thrombin. The study showed that myofibroblast expressed osteopontin (OPN) as well as thrombin-cleaved OPN in the nodules of Dupuytren’s contracture (DC). In in vitro study, thrombin induced differentiation into myofibroblast from fibroblasts of both nodules and cords. Thrombin may involve in the pathology of progression and recurrence by direct effect or indirect pathway via cleavage of OPN.

![Immunolabeling for osteopontin](image1)

**Summary Points:** The present study showed that myofibroblast expressed osteopontin (OPN) as well as thrombin-cleaved OPN in the nodules of Dupuytren’s contracture (DC). In vitro study, thrombin induced differentiation into myofibroblast from fibroblasts of both nodules and cords. Thrombin may involve in the pathology of progression and recurrence by direct effect or indirect pathway via cleavage of OPN.

![Western-blotting after treatment of thrombin](image2)

**Figure 62-2:** Western-blotting after treatment of thrombin.

**BIBLIOGRAPHY**