Single case study evaluating the use of a 2 Layer Compression System in the treatment of a lymphedema patient with arterial stenosis

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Background & Objective
Evidence of the effect of compression therapy for patients with lower leg lymphedema is well established in 2011. Compression therapy is considered as contra-indicated in patients with arterial stenosis. Patients with both lymphedema and arterial disorders in the same extremity, place the therapist with a challenging dilemma. Arterial stenosis as a contraindication for compression therapy has limited evidence. In this N=1 design study a new cohesive 2 Layer Compression System is used in the treatment of a patient diagnosed with arterial stenosis and lymphedema. We reconfirm the effect of compression therapy in lymphedema. Complications due to ischemia caused by lack of arterial inflow are monitored and evaluated.

Method
In 2009, a 66 year old woman, who was diagnosed with mild primary lymphedema of the left leg in her youth, underwent an arterial reconstruction after several years of complaints due to arterial sclerosis. The small saphenous vein was harvested in the right leg and used to make an arterial bypass in the femoral artery in the groin. Severe swelling occurred after this operation. Treatment consisted of CDT with the use a new 2 Layer Compression System applied to the whole leg. Pressure of the bandage was monitored by using a Picopress™ device. Volume of the leg was estimated by circumference measurement every 4cm and calculated using the formula of the truncated cone.

Results & Conclusions
The readings showed high pressure immediately after application (53-78mmHg). After three days there was a pressure reduction of 50%. After 10 days a significant reduction in volume was measured. A compression garment was then ordered. Therapy (Manual Lymph Drainage and IPC) was continued without bandaging the leg, while waiting for the ordered garment. There was an immediate recurrence of swelling of the leg, suggesting that the bandage was an essential component of the treatment. There were no complications due to ischemia, despite the arterial inflow restrictions.