Results: A significant correlation between Ppump with ICG lymphography and dynamic lymphoscintigraphy was identified ($r^2 = 0.58$, $P < .001$; Fig 3, *A*). In lymphedematous legs, Ppump was significantly lowered vs healthy legs (16.2 ± 4.0 vs 30.0 ± 2.5 mm Hg, respectively; $P < .01$; Fig 3, *B*).

Conclusions: Ppump measurement with ICG fluorescence lymphography is easily applied at the bedside. This novel method enables real-time measurement of lymphatic pumping in the extremities. In lymphedematous legs, an impaired lymphatic pump may be involved in the pathogenesis of lymphedema.

Fig.1

Fig 1. Setup to measure lymph pumping pressure.

Fig.2

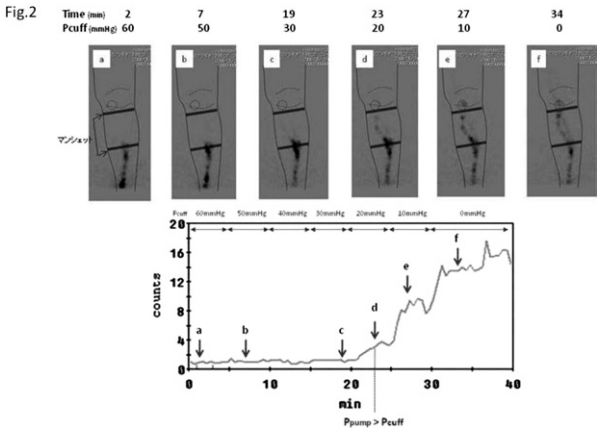

Fig 2. Lymph pumping pressure was measured from the time-activity curves using the same sphygmomanometer cuff technique.

Fig.3

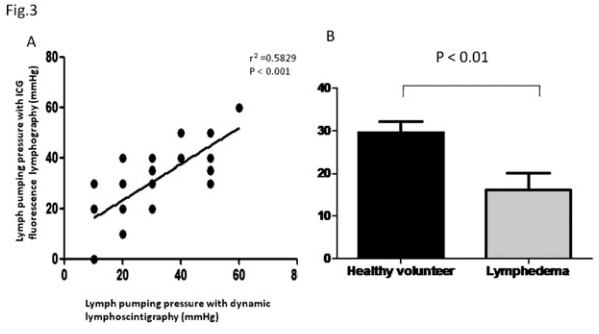

Fig 3. A, Lymph pump pressure identified with indocyanine green fluorescence lymphography was correlated with dynamic lymphoscintigraphy. **B,** Lymph pump pressure was significantly lowered in lymphedema legs vs healthy legs.

Inelastic Compression is Effective Over Time in Spite of Significant Pressure Drop

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Background: Inelastic compression has been claimed to lose effectiveness in a few days due to its fast pressure loss. We compared the improvement of venous pumping function achieved by inelastic bandages worn for 1 week with the effect of a compression stocking kit in relation to the drop of sub-bandage pressure.

Methods: In 18 patients affected by bilateral severe great saphenous vein insufficiency (CEAP C_2-C_5), ejection fraction (EF) was measured by strain gauge plethysmography before and immediately after application of compression, and 1 week later. A medical compression stocking (MCS) kit consisting of two stockings donned over each other was applied on one leg, an inelastic bandage on the other leg. The interface pressure was measured about 12 cm above the inner ankle in the supine and standing positions and during exercise.

Results: Results are summarized in the Table.

Table. Results

	Elastic stocking kit			*Inelastic bandage*		
	Baseline	*Application*	*7 days*	*Baseline*	*Application*	*7 days*
EF, %	32.9	42	40.1	33.4	77.9	64.5
IQR	23.4-41.2	39.7-44.2	35.6-46.7	18.1-39.1	69.4-100	57.9-73.8
% increase		37.2	32.3		138	90
Supine pressure		45	42		64.5	30.5
IQR		41-49	39-46.2		61-80	28-33.2
Peak pressure		49	46		103.5	61
IQR		44-51	42.7-48.5		98.2-113.5	54.7-65.7
% Pressure loss supine			5.6			54.7
% Pressure loss peak			3.9			39.6

EF, Ejection fraction; *IQR,* interquartile range.

Compared with normal values of EF of 64.6% (interquartile range, 63.3-68.5), median initial values were highly significantly reduced in both legs without compression. They increased moderately after application of MCS and strongly with inelastic bandages (both $P < .001$). Seven days later, EF was reduced in both groups: slightly with MCS, more, but still in the normal range, with bandages. At both terms, at application and 7 days later, the percentage increase of EF was significantly higher for the bandages compared with the MCS ($P < .0001$). At application, the median supine and standing interface pressure and walking amplitudes were significantly higher under the bandage than under MCS. After 7 days the percentage of pressure loss in the supine and standing position and the pressure peaks during walking were much lower under MCS than under the inelastic bandage.

Conclusions: Inelastic bandages applied with initially high resting pressure keep their beneficial hemodynamic efficacy over 1 week, despite loosing sub-bandage pressure to about one-half, probably due to the high-pressure peaks (>60 mm Hg) during exercise. The improvement of the venous pump by compression stockings is much less pronounced, both at application and 1 week later, despite of a better maintenance of both supine and peak pressure range.

A Randomized Trial of Class 2 and Class 3 Elastic Compression in the Prevention of Recurrence of Venous Ulceration

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