

The Surgical Treatment of Chronic Lymphedema of the Extremity

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Summary

Twenty-five patients with lymphedema of the extremity have been evaluated. Thirteen were treated surgically and 12 conservatively. The *Thompson* buried dermis flap operation is the most effective procedure and may be combined with omentoplasty.

The numerous operative procedures of varying theoretical standpoints have been proposed for lymphedema of the extremity (1). However, evaluation of these various procedures is usually not only difficult but also highly subjective. The resistant clinical problem cannot be entirely cured by most of these procedures. This paper summarizes the 15 years clinical experiences of patients with lymphedema of the extremity (2, 3, 4).

Clinical experience

Twenty-five patients with lymphedema of the extremity were admitted and examined at the second Department of Surgery, Hokkaido University Hospital during the past 15 years. Regarding sex of patients, 14 were female and 11 were male, a female-male ratio of 1.3 to 1. Regarding age of patients, 18 of 25 patients were 31 years of age or older (Lymphedema tarda), 2 were less than 10 years old (L. congenita) and 5 were between 11 to 30 years of age (L. praecox). Eleven patients were considered to be primary lymphedema, and 14 were secondary lymphedema due to radical mastectomies, trauma, infection or radiation in the groin. The right leg was involved in 7 patients, the left leg 5, both legs in 5, the right arm in 3, and the left arm in 5 patients.

Lymphangiograms were attempted on all patients, but dye entered the lymphatic vessel in only eleven patients whose angiograms showed no functioning lymphatic channels in the subcutaneous tissues.¹⁹⁸ Au-clearance test was also attempted on most patients, and showed apparent slow disappearance.

Of the 25 patients, 13 were treated surgically and 12 conservatively (Table I). Elastic support stockings and foot elevation were universally recommended to all patients. In 3 patients, bilateral operations were performed, thus the total number of operations were 16. Three Kondoleon's procedures in 2 patients, five modified Handley's operation in 4 patients, two omentoplasty described by *Goldsmith* (5) in 2 patients were used. In 5 patients a modification of *Thompson's* (6, 7) technique was applied. In 1 patient omentoplasty was combined to *Thompson's* technique.

Although a transient decrease of swelling occurred in all patients during the admission, the conservative measures and Kondoleon's or Handley's operations showed gradual swelling with return to the level at admission. Those operations considered to be an unsuitable procedure for patients with lymphedema of the extremity. Slight decrease of swelling was noticed in patients performed omentoplasty. The *Thompson* buried dermis flap operation was the only operative measure obtained good results and effective in 3 out of 5 patients.

The complication after the operation was infection of the wound and in 2 patients the operative effects were reduced.

Table I Patients with lymphedema of extremity

Case	Age & Sex	Lesion	Cause	Treatment	Results (Swelling)
1	69, F	R. leg	S		
2	17, M	L. arm	P		
3	1, F	L. arm	P		
4	14, F	B. legs	P		
5	16, F	B. legs	P		
6	53, M	R. leg	S	conservative	unchanged
7	46, F	R. arm	S		
8	52, F	R. arm	S		
9	48, F	R. arm	S		
10	56, F	L. arm	S		
11	54, F	L. arm	S		
12	50, F	L. arm	S		
13	4, M	B. legs	P	Kondoleon (bilateral)	
14	33, M	R. leg	P	Kondoleon	
15	46, M	L. leg	S	Handley	unchanged
16	34, M	R. leg	P	Handley	
17	34, F	L. leg	P	Handley	
18	21, M	B. legs	P	Handley (bilateral)	
19	64, F	L. leg	S	Goldsmith	slightly decreased
20	58, F	L. leg	S	Goldsmith	slightly decreased
21	23, M	R. leg	P	Thompson	moderately decreased
22	51, M	B. legs	S	Thompson (bilateral)	markedly decreased
23	56, M	R. leg	S	Thompson & Goldsmith	markedly decreased
24	65, F	R. leg	S	Thompson	moderately decreased
25	58, M	L. leg	P	Thompson	slightly decreased

R: Right, L: Left; B: Both, S: Secondary, P: Primary

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