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Insurance coverage policies for reconstructive lymphatic microsurgery procedures in Switzerland

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Summary

BACKGROUND: Lymphoedema is a progressive and potentially disabling disease. A growing number of studies show promising clinical results after microsurgical reconstruction. However, this treatment is currently not supported by level 1 evidence and insurance coverage is variable.

METHODS: Electronic records of 55 patients with limb lymphoedema, who were eligible for lymphovenous bypass surgery and/or lymphatic tissue transfer in our department from 2017 to 2020, were reviewed. Correspondence between our department and health insurers was analysed. A web-based search and individual telephone interviews were conducted to identify health insurer policies.

RESULTS: We included 42 patients undergoing 46 operations and evaluated the correspondence between our department and nine different health insurers. Overall, reimbursement of costs was approved in 67% (n = 31) of all surgeries and was refused in 33% (n = 15). The mean number of applications for reconsideration sent to insurers was 1.3 ± 0.7. The time between confirmation of the indication and the final decision ranged from 6 to 300 days (mean 50 days). Reimbursement of cost coverage ranged from 0% to 100% depending on the individual insurance company. No insurance company had policies publicly available online and all stated that they determine coverage only when provided with specific patient details on a case-by-case basis.

CONCLUSION: Insurance companies in Switzerland do not have a uniform policy regarding cost coverage for lymphatic surgery procedures. Moreover, the decision process appeared to be rather uniform within the respective insurance company and independent of the individual case. Standardised evaluation criteria including patient reported outcome measures should be developed to underscore the beneficial effects of lymphatic surgery and facilitate insurance coverage.

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Introduction

Lymphoedema is a progressive and potentially debilitating condition of chronic localised retention of protein-rich interstitial fluid and tissue remodelling caused by a compromised lymphatic system, which can be hereditary (primary) or acquired (secondary) [1]. The condition can be disabling psychologically and physically. Negative effects brought on by the impairment of activities in daily life and reduced limb aesthetics decrease health-related quality of life [2–5]. In developed countries, lymphoedema most commonly occurs after cancer treatment. Symptoms include swelling, recurrent skin infections and impairment of limb functionality. Complex physical therapy represents the gold standard for basic treatment of symptomatic lymphoedema. It is very often effective, yet often needs to be applied life-long because it does not treat the underlying causes and includes general skin care [6, 7].

A growing amount of literature reports promising clinical outcomes in lymphoedema patients following microsurgical reconstruction [8–14]. Two surgical concepts are currently employed: bypassing lymphatic fluid by anastomosing congested lymph vessels to venules (lymphovenous anastomosis, LVA) or microvascular transfer of lymphatic tissue to the affected limb (LTT). These options can performed either sequentially or singly, depending on lymphoedema stage and postsurgical outcomes. Especially in early stages of lymphoedema, where lymphatic vessels are not yet fibrotic, the outcome after LVA is promising. It represents a reconstructive procedure. Its combination with LTT might potentially improve overall results, but this has yet to be proven.

Surgical treatment is currently not supported by level 1 evidence. In 2018, researchers from the Ludwig-Boltzmann Institute in Austria conducted a systematic review on the effectiveness of LVA in lymphoedema and published a national decision support document [15]. Owing to methodological shortcomings, they could not conclude whether the LVA is at least equally effective and safer than the comparator LTT or conservative treatment, and back then initially recommended a temporary withholding of cost reimbursement. However, after several communications with

the Austrian Health Insurance Fund, LVA and LTT were finally listed as novel surgical therapies in the 2020 reimbursement catalogue [16].

Insurance companies in Switzerland still use an individualised approach to cost coverage of lymphatic microsurgery. The use of lymphatic reconstructive surgery for the treatment of lymphoedema is not generally reimbursed by the Swiss healthcare system at this point of time. A written request is needed in all cases. And some insurers cover lymphatic microsurgery after receiving a written request. How such policies play out in practice is important for patients and providers as there is often a discordance between the coverage criteria determined by insurers and indications for the procedures recognised by plastic surgeons. In order to contribute to the understanding of this situation in Switzerland, we reviewed insurance coverage policies and coverage decisions from 2017 to 2020 in our institution.

Materials and methods

At the University Hospital in Zurich we have established a registry to follow up all lymphoedema patients who have been treated with lymphatic microsurgery since September 2016, for internal qualitative analysis (KEK ID Req-2018-00284). Approval to conduct this retrospective analysis was additionally obtained from the local institutional review board (KEK BASEC ID 2019-00947) in 2019.

This institutional experience is from the University Hospital of the Canton Zurich with the biggest catchment area. Although most probably representative for Switzerland, outcomes in Zurich may not be valid for every single canton or local healthcare system in Switzerland. However, currently surgeons offering lymphatic surgery cannot take reimbursement for granted and this is observed all over Switzerland. At our department we routinely file a written application for reimbursement of costs to health insurers prior to the planned surgery.

Diagnosis and eligibility for treatment

Diagnosis of lymphoedema is generally based on patient history, clinical examination and subjective symptoms, with testing used to rule out other potential causes and confounding conditions. The International Society of Lymphology (ISL) Staging System is applied to further classify lymphedema. Imaging modalities are useful adjuncts to the ISL staging to clarify the diagnosis. At our institution, lymphoedema patients who are assigned for surgical therapy are discussed in an interdisciplinary setting by an angiologist, plastic surgeon and physiotherapist. This multidisciplinary group reviews all patients regardless of insurance status or financial capacities. Eligible patients were those judged medically appropriate for reconstructive microsurgical therapies. No patient received reconstructive treatment without previous complex decongestive therapy over at least 6 months by experienced physiotherapists.

Patient selection algorithm for treatment

Patients receive treatment according to the disease stage and their general condition in a standardised institutional approach. Patients who have had lymphoedema for 3 years and with lymphoedema stage I–II usually have little fibrosis and functional lymphatics. LVA is then performed to prevent progression of the disease and treat already existing lymphoedema. In patients who have had lymphoedema for more than 3 years, in stage II–III and in patients with primary lymphoedema, lymphatics are often sclerotic, nonfunctional or absent. These patients qualify for LTT. However, intraoperative impedance cardiography-guided LVA is usually attempted in order to facilitate more rapid decongestion, especially in the distal part of the limb. Suction-assisted lipectomy may be useful both as a primary and secondary “touch-up” procedure in lymphoedema stage II–III patients after lymphatic reconstruction. Excisional debulking procedures should be limited to morbid stage IV lymphoedema cases (elephantiasis). Surgery is performed under general anaesthesia for better patient comfort and patients are hospitalised for two to four nights. A standard protocol requires postoperative follow-up of all patients together with the physiotherapist in our outpatient clinic at 2 weeks, 6 weeks, 3 months and 1 year postoperatively. Physiotherapy including compression garments, bandages and manual lymphatic drainage is initiated gradually at 2 weeks postoperatively. Limb measurements are taken by the physiotherapist at every visit.

Data extraction

Patients’ electronic records were reviewed and correspondence between our department and the health insurers between 2017 and 2020 were analysed. We excluded international patients, cases with incomplete records, and patients who refused approval for data evaluation. A list of rationales and explanations was abstracted from the correspondence. Number of communications and time between confirmation of the indication by the plastic surgeon and the final decision on the assumption of costs from health insurers were reviewed. Further demographic data, insurance details and outcomes after application for reimbursement of costs were extracted from the patient chart.

A web-based search aimed at identifying whether established medical criteria and policies were publicly accessible on the corresponding company’s website. When the policy could not be abstracted from the company website, a telephone call was made. We aimed to assess individual criteria for the decisions. The insurance company was deemed to not have a policy for reconstructive microsurgery surgery in lymphoedema patients only if confirmed by a representative of the company.

Data analysis

The statistical analysis used descriptive and summary statistics to identify central tendencies. Data were analysed using Microsoft® Excel Version 14.3.6. (Microsoft Corp., Redmond, WA, USA). Continuous variables are expressed as mean ± standard deviation. Categorical variables are expressed as frequencies or percentages. This study was conducted according to the STROBE (Strengthening the Reporting of Observational studies in Epidemiology) guidelines.

Results

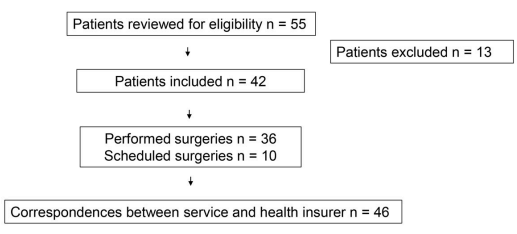
We reviewed 55 patient charts and included 42 patients who were eligible for analysis. They had either already undergone or were scheduled for lymphatic microsurgery.

Four patients underwent two subsequent lymphatic reconstructive surgeries. Finally, a total of 46 sets of correspondence between our department and the insurance companies were identified. Thirteen patients were excluded because of incomplete records, lack of or refusal to sign the institutional general consent form, or because they were international patients. Figure 1 shows a flow chart for patient selection.

Thirty-eight patients were female (90%) and four patients were male (10%). The age of the patients ranged from 21 to 77 years (mean ± standard deviation 52 ± 11). Mean body mass index (BMI) was 27 ± 5 kg/m^2. Seven patients had primary lymphoedema and had developed lymphoedema in adulthood: The disease occurred at an average age of 41 years (range 26–61). One patient had a family history of lymphoedema. Secondary lymphoedema was present in 35 patients for more than 3 years. Lower limb lymphoedema was present in 33 patients and upper limb lymphedema in 9 patients. Seventeen patients had ISL stage I lymphoedema, 22 patients stage II and 3 patients stage III. Ten surgeries were scheduled and a total of 36 surgeries had already been performed. We performed multiple LVA in 22 patients, of whom 3 underwent LTT sequentially (i.e., in a second operation following the LVA procedure) and 1 had a second LVA procedure. One patient received LTT only. Nine patients had LVA and LTT simultaneously in one operation and for 10 patients for this combined surgical approach was planned. Main subjective improvements reported by patients at 6 months postoperatively were: less pressure sensation, less tension, increased softness, less heaviness, reduced swelling, increased mobility and pain reduction. Table 1 details demographic data for each procedure, distribution of the patients concerning stage of lymphoedema, insurance details and outcomes after application for reimbursement of costs for each surgical case. The distribution of patients' BMI was comparable between the different insurance companies.

A written application for cost coverage from health insurers was required at all times. The following additional information was requested in all cases if missing: discharge letter from a rehabilitation centre or further evidence and results of physiotherapy, clinical pictures, and assessment by an angiologist. Lymphoscintigraphy was requested in only two primary and three secondary stage II lymphoedema cases. In 31 of 46, cases insurers requested an additional approval by an independent medical examiner. All refused cases had been previously assessed by an independent medical examiner (Vertrauensarzt). Reimbursement of costs was approved in 67% (n = 31) of all surgeries and was refused in 33% (n = 15). The mean number of applications for reconsideration sent to insurers was 1.3 ± 0.7.

Figure 1: Patient and case selection.



The time between confirmation of the indication and final decision ranged from 6 to 300 days (mean 50 days). Main reasons for refusal are listed in table 2. In 4 of 15 finally refused requests, health insurers recommended continuation of physiotherapy for patients with ISL stage I lymphoedema due to beneficial results of complex decongestive therapy. Five patients with refused reimbursement appeals had received private physiotherapy for 6 months but had not had complex decongestive therapy in a specialised clinic for management of peripheral lymphoedema. Reimbursement of costs was refused for 3 of 4 ISL stage III and 4 of 25 ISL stage II lymphoedema surgery cases. Reimbursement was approved by insurers in 88% (7 of 8 cases) of primary lymphoedema cases and 66% (25 of 38) of all secondary lymphoedema cases.

We identified nine different insurance companies, which were given letters from A to I for differentiation. Figure 2 shows the total number of requests and number of refused requests for reimbursement per health insurers A–I. Numbers in percentages represent the overall reimbursement rate. We noticed that some insurers such as insurer C approved all requests for reimbursement of costs whereas others such as insurer E declined most requests. When we compared patient characteristics, similarities or analogies in decision making among insurers could not be identified. No insurance company had clearly defined policies regarding coverage of the respective procedures publicly available online. All gave telephone interviews. No insurance company was able to provide established policies or specify medical necessity criteria for cost coverage. However, all nine companies assured us that they determined coverage for reconstructive lymphatic microsurgery in lymphoedema patients on a case-by-case basis. The final decision is usually made based on the assessment by an independent medical examiner. Figure 3 depicts the finally approved and refused requests for reimbursement per year from 2017–2020 in total numbers and percentages. In 2020 (the first 6 months) most of our requests were approved.

Discussion

There are few data evaluating insurance approval for lymphoedema treatment by reconstructive microsurgery. The field of super/microsurgical reconstructive procedures for lymphoedema is rapidly expanding. Technology is progressing, together with solid clinical experience, and skills as well as tools have qualitatively improved since the first experimental implementation in 1960 [17]. The need for requesting reimbursement by the insurance company for non-cosmetic surgery seems to be specific to the healthcare systems that utilise the diagnosis-related groups (DRG) system or DRG-like systems, which are intended to identify the "products" that a hospital provides. This is the case in Switzerland, Germany and Austria, whereas some other European countries manage this issue very differently (e.g., France and Italy: securité sociale). It is difficult for patients and providers to accept that some patients are able to receive insurance coverage for these surgical procedures and some do not. We have examined outcomes of applications for reimbursement of costs of microsurgical reconstructive therapies in lymphoedema patients in our unit.

According to the guidelines of the German Association of Scientific Medical Societies (AWMF) from May 2017, sur-

gical therapy for lymphoedema should then be considered whenever tissue changes aggravate under complex decongestive therapy and patients continue to suffer greatly from the disease [18]. These consensus guidelines are expected to be reviewed and adapted to the current level of evidence and clinical practice in the near future. With the

Table 1: Demographic data, insurance details and outcomes per surgical case.

ID	Type of lymphoedema	ISL stage (1–3)	Affected limb	Gender	Year of sugery	Type of surgery	Health Insurer A–I	Number of appeals by letter	Final decision
1	Secondary	2	Arm	F	2017	LVA	A	1	Approve
2	Primary	2	Leg	F	2018	LVA	B	1	Approve
3	Primary	2	Leg	F	2017	LVA	B	1	Approve
4	Secondary	1	Arm	F	2018	LVA	B	1	Refuse
5	Primary	2	Leg	F	2019	LTT	B	1	Approve
6	Secondary	2	Leg	F	2020	LVA and LTT	B	1	Approve
7	Secondary	1	Arm	F	2020	LVA	B	1	Approve
8	Secondary	2	Leg	F	2020	LVA and LTT	B	1	Approve
9	Secondary	1	Leg	F	2018	LVA	B	1	Approve
10	Secondary	2	Leg	F	2018	LTT	C	1	Approve
11	Secondary	1	Leg	F	2018	LVA	C	1	Approve
12	Secondary	1	Leg	F	2019	LVA	C	1	Approve
13	Primary	1	Leg	F	2017	LVA	C	1	Approve
14	Secondary	2	Leg	F	2020	LVA and LTT	C	1	Approve
15	Secondary	2	Leg	F	2020	LVA and LTT	C	1	Approve
16	Secondary	1	Arm	F	2019	LVA	C	1	Approve
17	Primary	2	Leg	F	2019	LVA and LTT	C	1	Approve
18	Secondary	2	Leg	F	2020	LVA and LTT	C	1	Approve
19	Secondary	2	Arm	F	2020	LVA and LTT	C	1	Approve
20	Secondary	2	Leg	M	2020	LVA and LTT	C	1	Approve
21	Secondary	2	Leg	F	2017	LVA	D	1	Approve
22	Secondary	3	Leg	F	2019	LVA and LTT	E	3	Refuse
23	Secondary	1	Leg	F	2019	LVA and LTT	E	2	Refuse
24	Secondary	1	Leg	F	2019	LTT	E	1	Refuse
25	Secondary	2	Leg	F	2018	LVA	E	1	Approve
26	Secondary	3	Arm	F	2017	LTT	E	1	Refuse
27	Secondary	1	Leg	F	2017	LVA	E	3	Refuse
28	Secondary	2	Leg	M	2017	LVA	E	1	Approve
29	Secondary	1	Arm	F	2017	LVA	E	2	Refuse
30	Secondary	1	Leg	F	2017	LVA	E	2	Refuse
31	Secondary	3	Arm	F	2017	LVA	E	2	Refuse
32	Secondary	1	Leg	F	2017	LVA	F	1	Approve
33	Secondary	1	Leg	F	2018	LVA	F	1	Approve
34	Secondary	2	Leg	F	2018	LVA	F	1	Approve
35	Secondary	2	Leg	F	2019	LVA	F	1	Approve
36	Secondary	1	Arm	F	2019	LVA and LTT	F	1	Approve
37	Primary	1	Leg	F	2019	LVA and LTT	F	2	Refuse
38	Secondary	3	Leg	M	2020	LVA and LTT	F	1	Approve
39	Primary	2	Leg	F	2020	LVA and LTT	F	1	Approve
30	Secondary	2	Leg	F	2020	LVA and LTT	G	1	Refuse
41	Secondary	2	Leg	F	2020	LVA and LTT	G	1	Refuse
42	Primary	2	Leg	M	2017	LVA	G	1	Approve
43	Secondary	2	Arm	F	2020	LVA and LTT	H	2	Approve
44	Secondary	1	Leg	F	2018	LVA	H	3	Refuse
45	Secondary	2	Leg	F	2020	LVA and LTT	I	2	Refuse
46	Secondary	2	Leg	F	2020	LVA and LTT	I	4	Refuse

F = female; ID = patient number; ISL = International Society of Lymphoedema; LTT = lymphatic tissue transfer; LVA = lymphovenous anastomosis; M = male

Table 2: Main reasons for refusal to reimburse lymphatic microsurgery costs in lymphoedema patients.

Reason for refusal	Number of cases
Complete decongestive therapy seems to be beneficial solely. Continuation is recommended.	4
Complete decongestive therapy for 6 months is a prerequisite.	5
Method is not sufficiently established.	14
Level 1 evidence is not available.	13
Long-term results not available.	12
Treatments are considered as experimental.	13
Efficacy and profitability are not proven.	14

intent to improve the level of standardisation for further multicentre studies in the field of lymphoedema treatment in the German speaking countries, a consensus paper of the German-Speaking Society for Microsurgery of Peripheral Nerves and Vessels (DAM) on indication, diagnostic and therapy with lymphovenous anastomosis (LVA) and vascularised lymph node transfer (LTT) was published in November 2019 [19]. The group reviewed 27 studies with a total of 1619 patients over a time period of 3.3 years and found that the reduction in size was approximately the same for both procedures (LVA vs vascularised lymph node transfer) and was around 48%. They also found that LTT was more efficient in volume reduction if patients stopped complex decongestive therapy postoperatively and that treatment resulted in a significant subjective improvement in the quality of life of patients [19]. Patients in early lymphoedema stages are most likely to benefit from LVA as the lymphatics are less prone to lymph stasis and have not yet undergone major structural changes such as fibrosis or sclerosis. Thus, the technical quality of LVA will increase. LTT may have long-term effects and may be of benefit in late stage lymphoedema where the lymphatics do not have enough transport capacity as a result of the aforementioned structural changes. A combination of both procedures is currently being used by only a few surgeons. The transferred lymphatic tissue may generate new lymphatic pathways and stabilise the disease or accelerate the LVA outcomes and the other way around. The preoperative

Figure 2: Total number of requests (blue) and refused requests (orange) for reimbursement per health insurer A–I. Reimbursement rates are given in percentages.

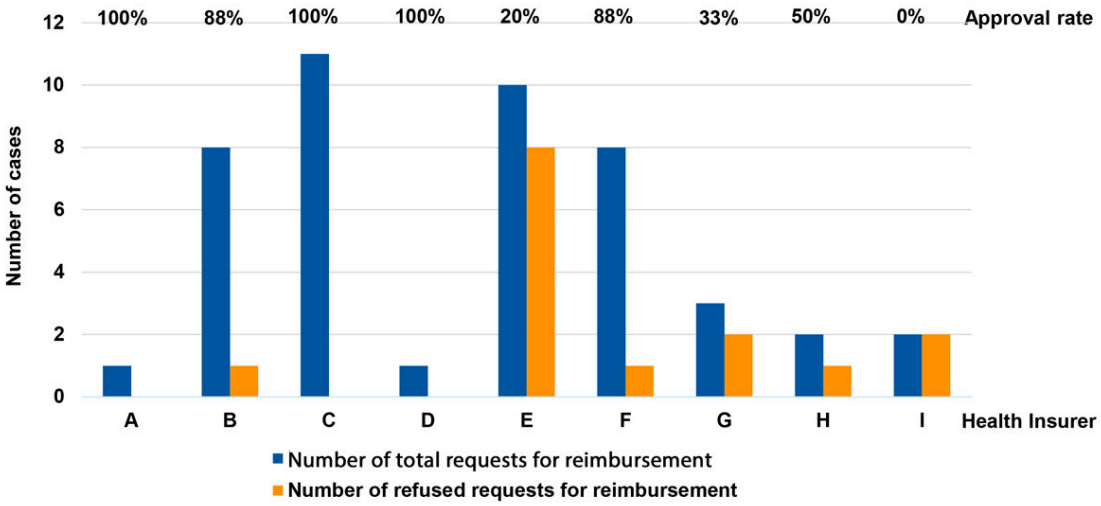
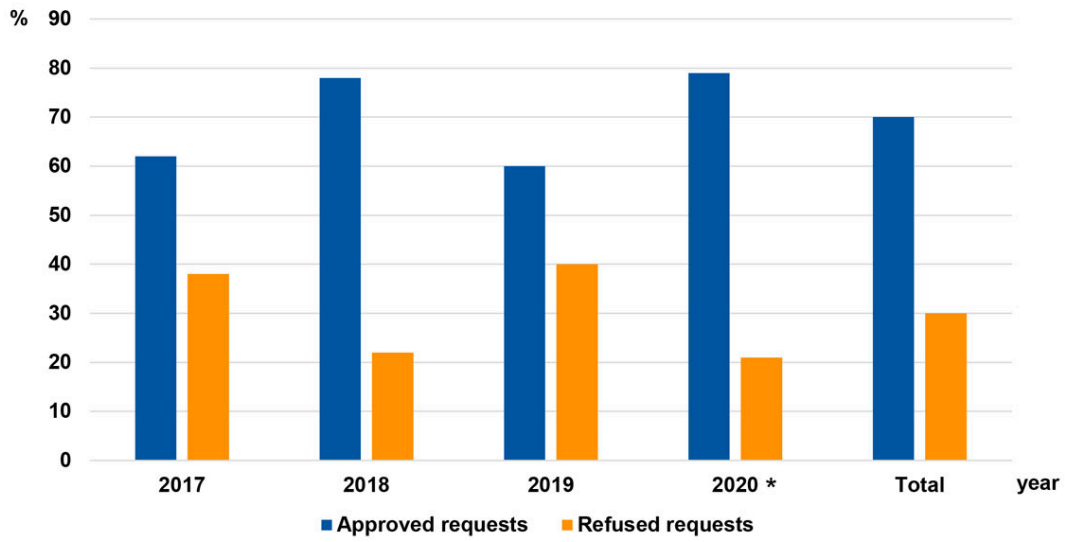


Figure 3: Final decisions per year from 2017–2020. * Includes the first 6 months only.



evaluation presented in this article differs from the consensus of the German-Speaking Society for Microsurgery of Peripheral Nerves and Vessels (DAM) on indication, diagnosis and therapy by LVA and vascularised lymph node transfer, which was developed over the study period. In general, we have followed most of the recommendations of the consensus paper with only minor institutional differences. Additionally, it is very likely that these recommendation on indication, diagnosis and therapy of lymphoedema are subject to change once more standardised procedures are used and larger scale data including long-term outcomes are available.

In the meantime, in Germany LTT can be carried out without consulting the health insurance companies beforehand and is a recognised therapy.

In another attempt to publish a national decision-support document for insurers, researchers from the Ludwig-Boltzmann Institute in Austria conducted a systematic review on the effectiveness of LVA in lymphoedema in 2018 [15]. They identified one non-randomised controlled study with a total of 43 patients, which assessed the effectiveness of LVA compared with vascularised supraclavicular lymph node transfer in 13 patients, in order to assess the safety and efficacy of the treatment. On the basis of the available evidence and because of methodological shortcomings, they could not conclude whether the assessed procedure LVA is at least equally effective and safer than the comparator LTT or conservative treatment. In 2018, they initially recommended a temporary withdrawal of reimbursement for lymphatic microsurgery in Austria. Recently, Tzou et al. shared their Austrian experience on how to establish a lymphoedema centre in Europe [16]. In Austria, because of differences in governmental healthcare reimbursement, no mandate is needed for applications for reimbursement for a new surgical lymphoedema therapy [16]. Their first application for reimbursement in 2018 was rejected, but the next one, in 2019, was approved by the Austrian Health Insurance Fund for listing as novel surgical therapy in its 2020 catalogue. They claim that introducing a new procedure for lymphoedema surgery was like introducing a new brand onto the market and that information played an important role for patients and referrals [16]. They added that the evaluation of lymphoedema patients' perceptions, requirements of the surgical setup, and insurance conditions for lymphoedema surgery are essential to support managerial decisions to promote and institutionalise lymphedema surgery, thereby providing better access for lymphoedema patients to this treatment [16].

In Switzerland the Department of Internal Affairs (Eidgenössisches Departement des Inneren, EDI), represented by the Federal Office of Public Health (BAG), is responsible for the management of a "service catalogue" of the compulsory health insurance (OKP) in accordance with the Swiss health insurance act (Krankenversicherungsgesetz, KVG) [20]. However, this provides not an explicit catalogue or general scope of services, but rather a categorisation of services that are published as the Health Care Benefits Ordinance (Krankenpflege-Leistungsverordnung, KLV). New treatments therefore require a written request for reimbursement of costs in Switzerland and insurers may ask for an assessment by an independent medical examiner (Vertrauensarzt), who does not necessarily have to be a specialist in the field [20]. If healthcare providers and insurers do not agree on whether or not a treatment fulfils the criteria of article 32 KVG, one of the two parties may request the BAG to arrange a discussion and propose an adjustment in the KLV, or the insured person can have a rejected application for reimbursement of costs reviewed by a court. For example, the insurance court of the Canton St Gallen issued a judgment on LVA in 2017 and concluded that the few studies available at that time could not prove the effectiveness of the procedure with significant probability [21]. In contrast, in November 2018, after a patient-initiated complaint, the cantonal court of Vaud decided that microsurgical LTT in a lymphoedema patient had to be paid for retrospectively by the health insurance company [22]. At that time, the method had been described as effective, appropriate and economical. We did not analyse the economic aspects of lymphatic surgery in particular, but would encourage such investigations by independent researchers. For instance, Canadian authors recently compared the economic impact of complex decongestive therapy and LVA in the management of upper extremity lymphoedema and concluded that, in their country, lymphoedema has substantial ongoing costs irrespective of the treatment modality [23].

On the basis of this and since the use of lymphatic reconstructive surgery for the treatment of lymphoedema is officially not reimbursed by the Swiss healthcare system at this point of time, an approval rate of 67% in Canton Zurich from 2017 to 2020 suggests that most payers have either accepted the current level of evidence for reconstructive microsurgical therapies in lymphoedema patients or act solely on the principle of trust. Negative or positive criteria lists are not established so far. On the other hand, one third of all appeals were refused, which proves that payers still decide about coverage of lymphatic microsurgery on an individual basis. The frequency of refusal of coverage varies widely among insurers. It is striking that some insurers approved whereas others refused all of our requests for reimbursement. These numbers also reveal that insurance coverage continues to be a barrier to patient access for these innovative and promising therapies, since clinical criteria common to all 15 cases finally refused could not be identified. In fact, reimbursement of costs was refused independently of lymphoedema severity without reasonable explanations. We did not identify case-related patterns in the decision making either of individual health insurers or between different insurers when we compared the approved and refused cases. In addition, there was a lack of correlation with lymphoedema severity. Decisions currently seem to depend on individual insurers rather than on the patients' individual lymphoedema characteristics or therapies already used. We further believe that there should be no difference in approving costs for patients with primary or secondary lymphoedema, which was not the case in our patient population: 88% of primary lymphoedema cases and 66% of secondary lymphoedema cases were approved for coverage. Most of our requests for reimbursement were approved in the first half of 2020, which might illustrate a rather positive trend. However, reimbursement rates per year varied around 70% per year from 2017–2020 and were more or less similar over the study period.

We identified nine different insurance companies. No insurance company provided established policies for decision making on cost coverage, and insurers allegedly decide on a case-by-case basis when provided with certain patient details. However, based on our data health insurers seem to make their decision for reimbursement of costs based upon subjective criteria.

The results show that the process of reimbursement requested by the surgeon significantly delays patients' access to adequate treatment by 50 days on average. Requests consume immense office resources and yet can ultimately result in rejection of the claim and frustration for physicians and patients alike. This can be avoided if medical necessity criteria are predefined. A streamlined reimbursement process would eliminate delays for patients and reduce burdens for both providers and payers. Our results may not be valid for every single canton or local healthcare system in Switzerland, but are most probably representative for Switzerland. These findings highlight a need for increased efficiency, transparency and collaboration among policymakers, payers and physicians to promote patient care and research. It might be helpful for policymakers and health insurers to discuss the Austrian and German developments and eventually define medical necessity criteria, as well as establish transparent policies. Our findings reveal a potential opportunity to adjust current practices in Switzerland and should support future discussions and decisions. In addition, raising public awareness of lymphedema and new therapeutic strategies in the framework of Swiss legislation and in close agreement with societies representing lymphoedema patients might further promote reconstructive microsurgical lymphoedema therapy in Switzerland in the future.

Objective clinical results turn out to be not simple to determine in lymphoedema patients and there is an urgent need for larger scale comparative and randomised controlled trials to support decision making. However, the primary goal for some patients is, for example, not always solely reduction of limb volume or circumference. Slowing down or stopping the progression of the disease, reducing the class of compression stockings and subjective discomfort such as heaviness and pressure sensation are often desirable postoperative results. Given the current difficulties in the standardised assessment of objective outcomes after microsurgical therapies for lymphoedema, investigations into alternative measures, such as standardised patient reported outcome measurements, will help to establish a further understanding of the benefits [24, 25].

Conclusion

In conclusion, 67% of reconstructive microsurgical operations for lymphoedema were ultimately approved by health insurers, although the treatment is officially not reimbursed by the Swiss healthcare system at this point in time. Decisions regarding reimbursement of lymphatic surgery appear to be rather uniform within the respective insurance company and not always based on the individual case. These results elaborated in the canton of Zurich may not be valid for every single canton or local healthcare system in Switzerland, but are most probably representative for Switzerland. Large scale randomised controlled trials that compare conservative therapy to lymphatic microsurgery objectively should be conducted and investigations on alternative tools such as patient reported outcome measurements should be generated to provide further supportive evidence for decision making in the future.

Disclosure statement

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