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Correspondence and Communications

A plastic surgery service response to COVID-19 in one of the largest teaching hospitals in Europe



Dear Sir,

We are living through unprecedented times; unexpected by the world and bearing huge impact for the National Health Service (NHS), which has to adapt and redefine itself in response to the continually evolving Coronavirus disease 2019 (COVID-19) pandemic. As a large department we are expected to support the acute specialties, urgently rationalise care, reduce patient footfall and design a new working pattern that protects both staff and the public. We have the crucial responsibility to adjust our practice to both reduce the spread of disease and free up capacity within the system. In this paper we describe our local strategy in terms of leadership, reconfiguring our service and utilising all options in our armamentarium to provide as safe a service as possible.

COVID-19 was first reported in Wuhan, China in December 2019 and has since spread globally reaching 334,981 confirmed cases and 14,652 deaths globally on 23rd March 2020.¹ The virus initially spread within the Hubei province, where extensive containment measures including lockdowns have led to a decline in new cases.^{2,3} It has now spread globally and by the 15th April 2020, Spain has the highest number of confirmed cases in Europe, of 169,496, and Italy the highest number of deaths in Europe, of 20,465.¹ Around 4.4% of cases require hospitalisation and 30% of those require critical care,⁴ predominantly for mechanical ventilation.⁵

The first two cases reported in Oxfordshire were reported on 5th March 2020. This catalysed an early Trust and departmental response. There was a progressive increase in the number of cases and reports of seven University of Oxford students being affected by 20th March 2020.⁶

On 14th March 2020, Oxfordshire had the largest reported number of cases for any UK region totaling 14 (London was divided into boroughs) out of a population of 687,524. By 23rd March 2020, it was ranked 34th, with 63 identified cases. By 14th April 2020, it was ranked 16th, with 890 identified cases⁷

Leadership strategy

Prior preparation and planning prevents poor performance. We seek to better understand the threat in order to plan for

all eventualities. We are in the fortunate position in the UK of having colleagues worldwide who have already and are currently facing the same threat. We should capitalise on the global nature of our specialty in aiding the planning of our response to the pandemic.

Our initial plan or series of plans will be helpful in guiding our initial response, however given that ultimately “no plan survives first contact with the enemy”,⁸ flexibility, teamwork and dynamic leadership are crucial.

This is not a time for the heroic NHS pace-setting leadership of old,⁹ but rather a model of more shared and distributive leadership, setting clear purpose and direction, but leaning towards collaboration and consensus rather than command and control.⁹ This crisis highlights more than ever our common goal and now is the time to strive for the long overdue improved collaboration between managers and clinicians.

The traditional leader-follower model of subservience should be ignored and all employees should be treated as potential leaders within their own spheres of responsibility. This includes empowering our junior doctors, encouraging and fostering a future generation of medical leaders.^{9,10}

We should adopt a cohesive approach to the problems faced, seeking enhanced dialogue between levels of responsibility. Individuals should be given autonomy to make decisions at ground level, remaining guided by the overall direction of the organisation, but ultimately releasing those on the frontline from ever-prevalent bureaucracy and top-down micro-management.

The importance of looking after the workforce, both physically and emotionally, cannot be underestimated. Keeping staff involved, engaged and empowered will not only lead to them feeling more valued, respected and supported, but ultimately lead to greater clinical effectiveness.⁹

Reducing hospital footfall

We have implemented numerous strategies to minimise hospital footfall, reducing risk to both patients and clinicians. These are under continual review.

Department surgeons with national leadership roles have rapidly adapted guidelines to assist in the management of hand trauma¹¹ (for example promoting conservative management of fractures wherever possible). As a department we collectively accept that an increase in conservative management might come at the delayed cost of revision surgery required at a later date. To reduce admissions for soft

tissue infections the ambulatory intravenous antibiotic services have been bolstered.

All referrals are made directly to a triaging consultant working from home during working hours. Using telemedicine, decisions are made to avoid unnecessary patient contact and facilitate community based care. Heeding the COVID-19 information governance advice from NHSX,¹² we feel able to safely share information if it limits the spread of disease. We are able to provide safe video-calling advice and talk through simple procedures for referring professionals (such as removing nail plates and the treatment of paronychia).

Where patients require face-to-face assessment, they are seen by one doctor in appropriate personal protective equipment (PPE), with notes taken by a colleague two metres away. For in house referrals; to prevent multiple reviews, the most senior person assesses (and treats where possible) during one patient encounter.

For patients requiring more complex reconstructive procedures, patients are assigned directly to a theatre list and managed on a 'see and treat' basis. Decisions and predicted operative times are based on information gathered on referral, telemedicine and clinical imaging. Surgical day case arrivals are staggered to minimise the time in hospital.

If admitted, patient movement around the hospital is restricted. Once discharged, follow-up is carried out by telemedicine wherever possible; this includes using absorbable sutures, patient/carer-led wound care, removable splints and training in the removal of k-wires to avoid attending a hospital or GP practice.

A virtual paediatric clinic each morning reviews all referrals from the past 24 hours, with phone advice given to (parents of) patients with minor injuries that could be managed expectantly.

The department facilitates homeworking wherever possible. This includes undertaking on-calls from home with access to the electronic patient record. This has promoted safe remote practice.

To help free-up plastic surgeons, public information and advice was disseminated via the British Association of Plastic, Reconstructive and Aesthetic Surgeons (BAPRAS) Voice social media pages, warning self-isolating patients of the risks of DIY and other avoidable injuries at home.¹³

Team restructuring

The department has been reconfigured into two 'mega-firms', with one covering trauma and the other covering urgent cancer services. At present, both firms run a rolling four-week rota, involving two weeks at home (working or resting) and two weeks on site. If a team member is required to go off for sickness or isolation, they are swapped into the homeworking group and start the cycle again. Building this slack in to the rota enables recovery and self-isolation to be taken in to account, while heeding WHO guidance to minimise face-to-face patient interaction.¹⁴ The rota will be reviewed and adjusted as the situation evolves.

Where possible, more junior trainees (foundation and core level) have been assigned to a ward or hospital zone, to minimise the movement of personnel, while also cross-covering other subspecialties. The ability to cross-cover one

another has introduced much needed flexibility in to the system; covering staff self-isolation, sickness and the ability to redeploy to other COVID-19 treating specialities as the situation escalates.

The role of medical students

Medical training has been almost universally suspended, with examinations being postponed or cancelled. Though the ramifications on long-term training are unclear, this has resulted in the availability of a considerable pool of motivated individuals.

In order to increase the capacity of clinical staff, medical students who have passed their final exams and prescribing safety assessment, are being asked to work as 'FOs' within the Trust. In this role, under close senior supervision, FOs will be undertaking basic clinical tasks, such as ED triage, ordering tests and prescribing medications.^{15,16}

Non-clinical roles are being filled by more junior clinical students, such as assisting with quantitative Polymerase Chain Reaction (qPCR) testing for COVID-19 and helping with administrative or logistical tasks. Additionally, a series of national student-led initiatives are being set up to support NHS professionals with tasks such as childcare.^{15,16}

Reflections of a junior doctor

"In the last few weeks alone, my role as a junior doctor has become unrecognisable to what it once was and I have had to learn fast how to adapt to the changing demands of my work environment. My role is likely to change further, with the proposed implementation of a rota system that will see a smaller number of doctors covering multiple specialities at once, in order to cover inevitable staff shortages and absence.

Being on the front line brings with it a great deal of pressure and responsibility. There is a great deal of anxiety amongst juniors and the psychological impact of this situation on staff should not be underestimated. Not truly knowing what lies ahead, having to adapt to constantly evolving patterns of work, knowing that we can be redeployed at any given moment, is very unsettling. Daily, new policy and guidance is released, which can be overwhelming whilst also conflicting. Beyond the coming weeks and months there remains the niggling uncertainty relating to the implications for our future careers, having recently been told that training rotations, examinations and speciality interviews have been cancelled.

All this, on top of the fear of contracting the virus ourselves or passing it on to our loved ones, has left me feeling at times like the situation is bleak. Though the uncertainty can be scary, it can and is also uniting and reminding us as a profession why we chose this path in the first place, which is first and foremost to serve."

Conclusion

This pandemic is far from over and plastic surgery teams will be required to adapt quickly to new roles, which will be

alien and anxiety provoking. There will be a shift in focus and an expectation to directly support the frontline staff tackling COVID-19.

Modern and effective leadership strategies are required to empower and support staff. Being an adaptable interspecialty, plastic surgeons are needed more than ever to use their skills to serve the acute specialities.

We must talk openly and honestly to one another to allow us to anticipate and deal with the inevitable clinical and psychological challenges ahead. This is a challenging time for our nation, which will no doubt change us, the NHS and society forever. With those around us struggling with social isolation, we should count ourselves blessed to be able to face this as a united profession, together with the support and camaraderie of our colleagues. Numerous key advances in the delivery of healthcare have been borne through times of war. This crisis is no different and we stand to be inspired by our experiences of great resilience, courage and resourcefulness in the face of adversity.

Declaration of Competing Interest

None.

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Ethical approval

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Decision making on authorship in the plastic, reconstructive and hand surgery literature: The opinions of corresponding authors



Dear Sir,

Authorship offers academic growth, prestige and financial benefits to academics, in return that authors contribute substantial amounts to the manuscript.¹ For guidance on responsible authorship, the International Committee of Medical Journal Editors recommends criteria which should be met to merit authorship²:

- (1) Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND
- (2) Drafting the work or revising it critically for important intellectual content; AND
- (3) Final approval of the version to be published; AND
- (4) Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Honorary authorship (HA) stands for an enlisted co-author who did not make the appropriate amount of contributions according to the ICMJE guidelines. This study aims to evaluate the awareness of authorship guidelines, decision making on authorship, the attitude towards HA and to assess the proportion of HA in prominent journals in the Plastic and Reconstructive literature in 2018.

The five journals with the highest impact factor in 2018 in the Plastic and Reconstructive Surgery were selected: Plastic and Reconstructive Surgery, Journal Hand Surgery (European Volume), Aesthetic Surgery Journal, Annals of Plastic Surgery and the Journal of Plastic, Reconstructive and Aesthetic Surgery.

From these journals, articles published in 2018, were included if they (1) had more than 2 enlisted authors; (2) were original articles, clinical trials or reviews; and (3) had author information available. Correspondence on manuscripts and letters to the editor were excluded. From included

articles, the email address of the corresponding authors was recorded. In case of multiple articles in one journal tied to one corresponding author, the corresponding author was asked to fill in a survey on the latest article published that year. If one corresponding author had published in multiple journals, the author was asked to fill in a survey per journal.

Based on previously conducted studies, a 21-question survey was developed (see supplementary material).³⁻⁵ Authors were e-mailed starting from March 2019. Reminders were sent to increase the response rate.

The initial search on PubMed resulted in a total of 2528 articles published in the included journals. 1571 remained after applying the selection criteria. Eventually 1302 surveys were distributed due to missing or non-function e-mail addresses. Of those sent, 378 were returned leading to a response rate of 29.0%

Most respondents (89%) were medical doctors with the majority working as a plastic surgeon (69%). Most corresponding authors had more than 10 years of clinical experience (59%) and had published more than 26 peer-reviewed articles (49%). The vast majority ($N=284$, 76%) of the responders were familiar with the ICMJE guidelines and the ($N=194$, 55%) general issue of HA. However 75% ($N=127$) of the responders used other guidelines and 25% ($N=43$) used no guidelines.

Almost a fifth of the respondents had a senior member at their department who is automatically enlisted as author on all manuscripts (see Table 1). 57% of the respondents felt this was never or rarely justified. When asked who decided the order of the authors, the majority ($N=128$, 34%) stated that authors decided as a group, followed by the senior author ($N=120$, 32%), and the first author ($N=95$, 26%).

Half of the responders ($N=197$, 53%) enlisted authors in the order of the amount each contributed, except the last author, who provided the concept, supervision, and responsibility for all working steps of the project. On 12% of the articles, a suggestion was made to include an honorary author.

47% of the manuscripts surveyed had a co-author performing only tasks, like reviewing the manuscript (37%), approving the manuscript before submission (30%) and performing cases used in the study (26%) which when performed alone, should not warrant authorship (ICMJE-defined HA). 21% of the surveyed authors stated that one or more of their coauthors did not contribute enough to merit authorship. Figure 1 gives an overview of ICMJE-defined HA and self-perceived HA in the surveyed journals.

Previously, Reinisch et al., conducted a study that gave an overview of authorship criteria awareness over an 8 year period, year 2003 vs. 2011.⁵ In their survey among members of the American Association of Plastic Surgeons, they showed a perceived HA of 64% in 2003 vs. 37% in 2011, suggesting a declining trend. The results of the current study follow that trend.

This study, however, is limited by the response rate of 29%. This might lead to an over- or underestimation of the amount of HA. A second limitation is the possibility of recall bias due to the retrospective nature of the survey. Another limitation is that responders might feel the need to give a desirable answer, introducing selection bias. Furthermore, the rate of HA might also be an underestimation due to surveying corresponding authors who might be more in an established position in research groups,

Table 1 Determination of authorship.

	<i>n</i> (%)		<i>n</i> (%)
A senior member of your department, including section chief or department head, is automatically listed as an author in all submitted manuscripts	373	Responders primary role in actual writing of the article	373
Yes	71 (19%)	Wrote all or most of the article	240 (64%)
No	288 (77%)	Wrote minor parts of the article	13 (4%)
Don't Know	14 (4%)	Only revised the article and made corrections and changes in content	21 (6%)
If so, do you feel this is justified?	249	I supervised the writing of others	39 (11%)
Never justified	81 (33%)	Performed majority of data collection/ analysis	18 (5%)
Rarely justified	60 (24%)	Other	42 (11%)
Sometimes justified	63 (25%)	Funding of the study (check all that apply)	378
Most of the time justified	34 (14%)	(Pharmaceutical) Industry	11 (3%)
Always justified	11 (4%)	University sponsored (e.g. grant)	76 (20%)
Decided the order of authorship	373	No funds obtained	275 (73%)
First author	95 (26%)	Other	37 (10%)
Senior author	120 (32%)	Did any of your coauthors perform only <i>one or more</i> of enlisted non-authorship tasks, and nothing else related to the manuscript preparation, study design or data analysis while working on that article?	
Authors decided as a group	128 (34%)	Yes	175 (47%)
The funding source of this study	2 (1)	No	198 (53%)
Other	28 (8%)	If "yes", which performed tasks	378
Criteria used to decide the order of authorship. Authors listed:	372	Supervising/ recruiting coauthors	70 (19%)
In the order of the amount each contributed	129 (35%)	Obtaining funding or material support	29 (8%)
In the order of the amount each contributed, except the last author, who is the most senior in the group but did not contribute to the study	27 (7%)	Recruiting study subjects	82 (22%)
In the order of the amount each contributed, except the last author, who provided the concept, supervision, and responsibility for all working steps of the project	197 (53%)	Performing cases used in the study	97 (26%)
In alphabetical order	1 (0.3%)	Contributing illustrations	52 (14%)
Other	18 (5%)	Reviewing the manuscript	141 (37%)
Suggestions for including an HA	370	Approving the manuscript before submission	112 (30%)
Yes	44 (12%)	Signing statement of copyright transfer to journal	76 (20.%)
No	326 (88%)	Are there any of your coauthors listed for this article that did not make sufficient contributions to merit being included as coauthors?	371
		Yes	77 (21%)
		No	294 (80%)

rather than surveying first authors who might be junior researchers.

In two decades, perceived HA in the Plastic and Reconstructive literature seems to decline. However, current rates of HA remain debatable. The authors plead for a paradigm shift in academic culture, where each potential authorship should be critically evaluated by the involved researchers.

Declaration of Competing Interest

None.

Disclosure

Nothing to disclose.

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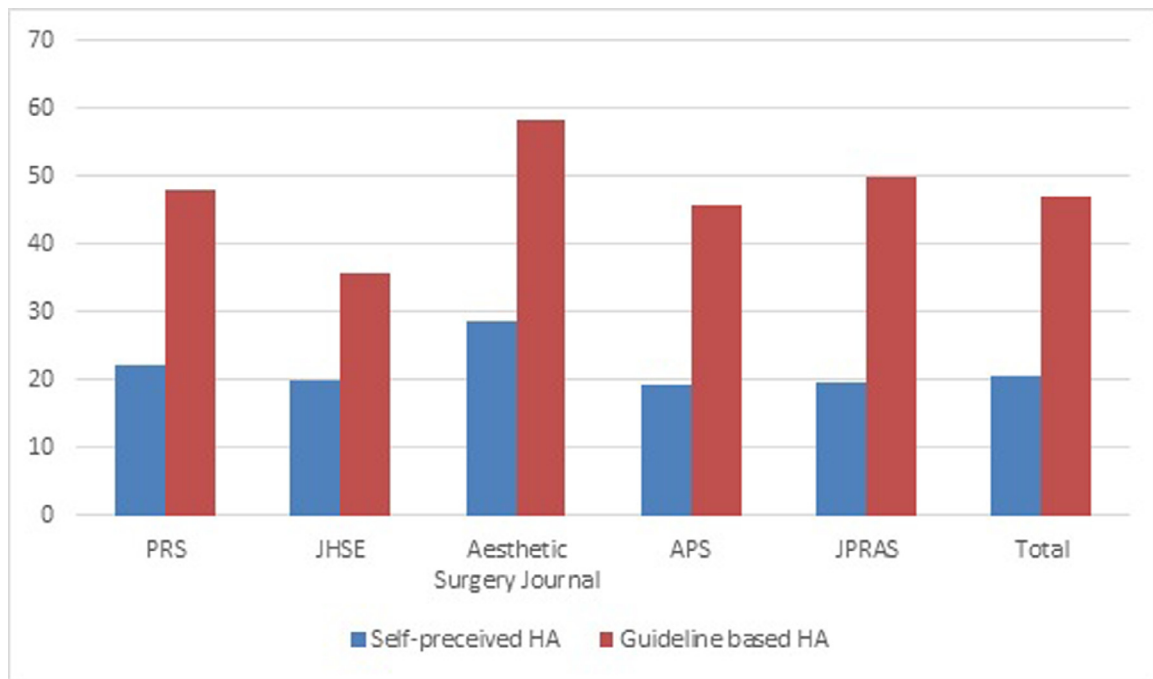


Figure 1 Presence of HA in the journals surveyed. PRS: Plastic and Reconstructive Surgery, JHSE: Journal of Hand Surgery European Volume, APS: Annals of Plastic Surgery, JPRAS: Journal of Plastic, Reconstructive and Aesthetic Surgery.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:[10.1016/j.bjps.2020.02.018](https://doi.org/10.1016/j.bjps.2020.02.018).

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SCIP flap in high-risk extremity reconstruction: Anatomical study of additional superficial venous patterns and implications in caucasian patients



Dear Sir,

Superficial circumflex iliac artery perforator (SCIP) flap is commonly used but only limited data on the anatomical distribution of superficial veins in these flaps are available. Therefore, we sought to determine the anatomic distribution and characteristics of additional superficial veins and also describe our clinical experience.

The present study had two main aims: (1) to perform cadaveric dissection to determine the anatomic superficial vein distribution apart of superficial circumflex iliac vein and characteristics of SCIP flaps and (2) to describe our surgical technique and clinical experience in high risk lower limb reconstruction in a series of Caucasian patients.

Anatomic dissection

We dissected 10 adult cadavers. The dissection was performed with the technique described by Hong.¹ All additional subcutaneous veins along the incision were preserved and marked. The superficial circumflex iliac vein (SCIV) was dissected as part of the flap technique but it was not consider as an additional superficial vein because it is part of the flap itself.

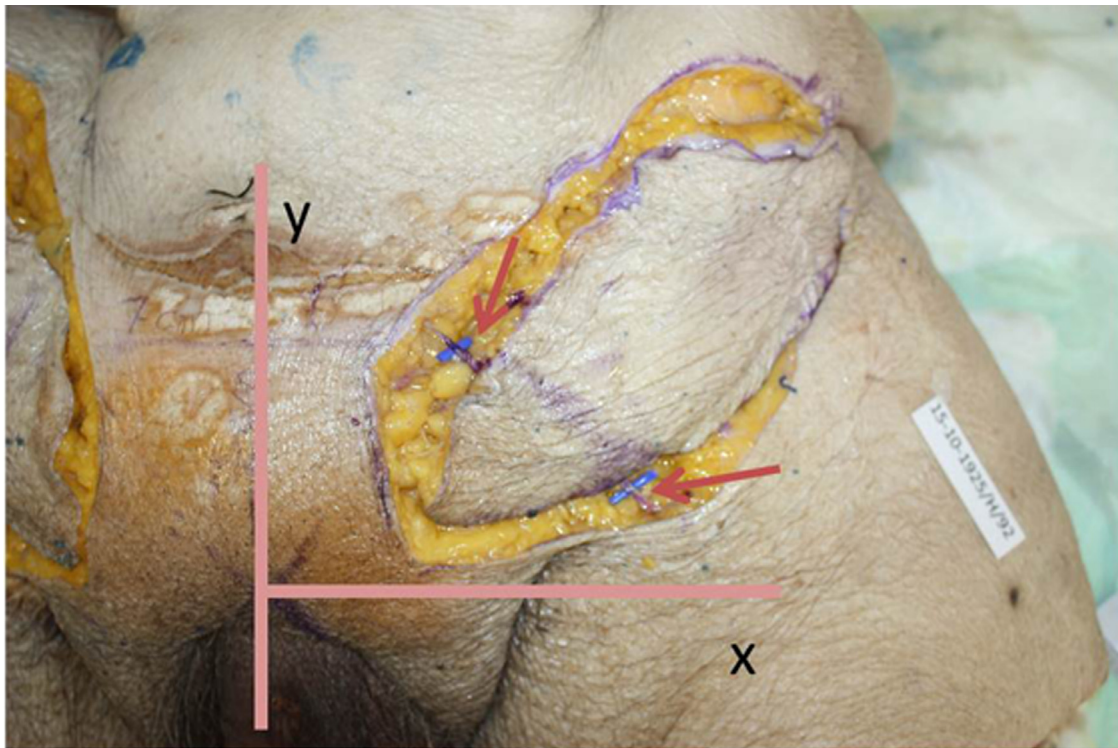


Figure 1 Anatomic detail dissection of the superficial vein (red arrow) and detail of the 0.0 point for both the x and y axes.

The pubis tubercle was considered the 0.0 point for both the x and y axes. Veins located above the y axis were considered positive and veins below the 0.0 point on this axis were considered negative (Figure 1).

A total of 11 feasible secondary superficial veins in 10 hemipelvises were identified and mapped. The mean distance from the pubis tubercle on the x-axis was 5.5 cm and 3.9 cm on the y-axis and mean diameter 2.01 mm.

Clinical application

19 patients with moderate size defects of the lower limb underwent reconstruction using the microsurgery technique with SCIP flaps. The flaps were anastomosed perforator-to-perforator or to a major vessel using an end-to-side technique. Preoperative computed tomography angiography (CTA) was performed to evaluate vascular status when the clinical exploration of the vessels was indeterminate. Hand-held Doppler (HHD) was used to mark potential recipient and flap perforators. Preoperative angioplasty was performed, when necessary, to improve distal vascularization.

The flap is elevated using additional superficial vein apart from SIEV (the concomitant vein in the SCIP flap technique). Based on our clinical experience, we believe that the flap should not be anastomosed to the main vessels due to the difficulty of microsuturing vessels of different sizes and because anastomosing donor vessels to a main vessel can result in excessive flow, potentially leading to venous congestion. Normally, we prefer to anastomose two veins (additional superficial vein) rather than a single vein (SIEV,

concomitant vein to the artery flap). All veins (superficial and pedicle) were used coupler for anastomoses. There is no size difference between superficial and pedicle vein.

For purposes of the present study, we divided the patients into two groups according to the number of veins anastomosed: one vein (group 1) or two veins (group 2).

The Mann-Whitney U Test and $p < 0.05$ was statistical analysis used.

Clinical results

The mean age in the clinical sample ($n = 19$) was 61.4 years (range, 26-80). The reasons for surgery were as follows: diabetic ulcer ($n = 10$), cancer ($n = 5$), and trauma ($n = 4$). The SCIP flap was used in all cases, all of which were obtained from the donor zone using the technique described by Hong.¹ Doppler ultrasound was used for planning in all cases. Sixteen patients also underwent limb CTA. Nine patients presented major artery occlusions so preoperative angioplasty was performed.

Postoperatively, the clinical course was: uneventful ($n = 8$), superficial epidermolysis due to congestion ($n = 9$), and total necrosis ($n = 2$: ischemic and venous congestion, respectively). The two-vein group (Table 1) had significantly better treatment outcomes ($p = 0.047$), with no cases of total necrosis (vs. 2 cases in group 1) and with a good clinical course without complications in most of these patients (5/7; 71.4%) versus only 25% (3/12) in group 1.

Then, the anatomic study showed that suitable secondary superficial veins apart from SIEV were present in all

Table 1 Clinical results in the 19 patients.

	Group 1 (one vein)	Group 2 (two veins)	P value*
Mean patient age, years	59	60	
Cause of reconstruction, number of cases	Diabetic ulcer, 6 Cancer, 5 Trauma, 1	Diabetic ulcer, 4 Trauma, 3	
Recipient vessels, number of cases	Perforator, 5 Collateral, 4 Pedia artery, 1 Metatarsal artery, 1	Perforator, 3 Collateral, 4	
CTA findings, number of cases	NORMAL CTA: 5 ISCHEMIC CTA: 5 NO CTA: 2	NORMAL CTA: 2 ISCHEMIC CTA: 4 NO CTA: 1	
Total necrosis	2	0	*0.0047
Superficial congestion, flap unaffected	7	2	
Good clinical course without complications	3	5	

Abbreviation: CTA indicates computed tomography angiography.

* Independent samples Mann-Whitney U Test significance.

cadavers. Importantly, total necrosis was observed in only 2 flaps (both in the single-vein group). The results were significantly better ($p < 0.05$) in the two-vein group, with no cases of total necrosis and fewer cases of superficial congestion.

A high proportion (11/19; 57.9%) developed venous congestion. Relatively few reports—most of which were carried out in Asia—have described the use of the SCIP technique for lower limb microsurgery.² Those studies used only a single vein in most cases. However, the author thinks that one of the reasons for the high success rates obtained with a single vein in those studies may be due to the lower likelihood of Asians to develop deep vein thrombosis.³ Moreover, recent studies have shown that anastomosing two veins—rather than a single vein—in lower limb surgery can reduce complications rates by up to four times.⁴ Our results seem to confirm these reports.

Microvascular reconstruction in diabetic feet has not been feasible due to the high complication rates. However, the emergence of new techniques such as supermicrosurgery is changing our capacity to successfully perform these surgeries.⁵

This study shows that two vein anastomoses can reduce the likelihood of developing congestion in Caucasian patients undergoing lower limb reconstruction with SCIP flaps and demonstrate the clinical importance of the second vein. The cadaveric study revealed the location of this secondary superficial vein.

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Declaration of Competing Interest

None.

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The “Patent-Lumen” Vein Graft Harvesting Technique in Free Flap Reconstruction



Dear Sir,

The success of microsurgical reconstruction is dependent on the availability of recipient vessels for restoration of flow within the transferred tissues. Vessels located within or adjacent to the defect to be reconstructed are the ideal choice.¹ However, certain conditions such as in extensive traumatic tissue injury or vascular disease adjacent to the defect, preclude the use of these vessels and require more distant vascular access.² Under such circumstances, vein grafts may be required to bridge the gap between the flap pedicle and the remote recipient artery and vein.³ Despite their benefits, vein grafts increase the operative time, add a donor site and may result in increased thrombosis rates.⁴

The purpose of this study was to add to the current literature on the use of vein grafts for free flap tissue transfers by describing the “Patent-Lumen” vein graft harvesting technique used at our institution. A retrospective chart review of 10 free flaps that required vein grafts was performed. Flap failure, microvascular complications and hematoma rates were reviewed.

The technique of interest applies once the vein has been dissected. For larger vessels, the harvesting is completed by incising both ends of the graft so that it can then be mobilized. A marker is used to identify the proximal end and then an Acland clamp is placed on its proximal edge. An intravascular catheter is inserted into the veins distal edge and a solution composed of 5000 units of heparin diluted into 500 mL of normal saline is injected into the vein. The vein is flushed until it is filled with only heparin and void of thrombogenic material. The graft is concurrently exam-

ined for leaks and addressed immediately with hemostatic clips. Digital pressure is kept on the vessel and catheter to prevent egress of the fluid. Once the graft is sufficiently distended with the heparin solution, a simple Acland clamp is placed distally, and the catheter is removed (Figures 1). The key is to maintain the graft constantly distended so that it remains patent, avoiding kinking of the vessel and preventing intimal contact throughout the procedure. For smaller vessels the graft is incised at one end while the opposite end is clamped. The intravascular catheter is then inserted, and the solution injected into the vein while it is still in situ. After complete dilation, a second clamp is placed, and the vessel is then mobilized. The graft is kept in a saline soaked gauze until it is positioned for microvascular anastomosis. Orienting the vessels is done by verifying the marker on the proximal end and by noting the orientation of the single clamps during their application. A video demonstration of the “Patent-Lumen” technique can be seen here (link).

A total of 15 vein grafts were used in the 10 free flap cases. Despite the grafts being harvested in the same fashion, two were applied as single stage AV loops and the remaining 11 were placed as interposition vein grafts. The majority of interposition vein grafts were used for both arterial and venous gaps (50%), followed by arterial gaps (37.5%) and finally venous gaps (12.5%). The coupler device for venous anastomosis was used in 5 of the 6 venous anastomoses. The saphenous vein was the vein of choice for procurement in 80% of the patients. Two patients had superficial veins in the forearm procured for the graft.

Postoperative complications are presented in Table 1. There were no flap failures, or vascular thromboses. For the primary outcome of interest, 1 microvascular complication was observed. The patient developed a hematoma that required a return to the operating room at post-operative day 1. After drainage of the hematoma and meticulous exploration of the anastomoses, a leak was identified from the

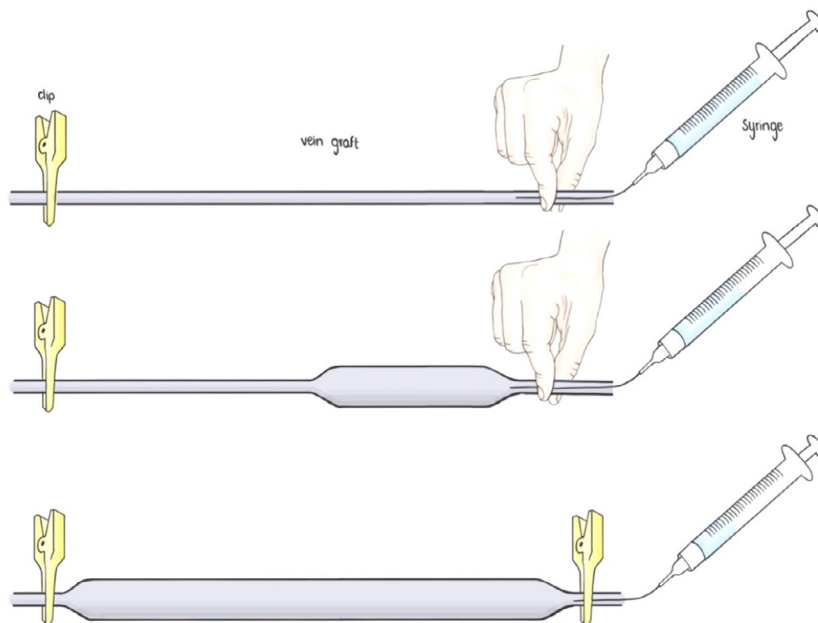


Figure 1 Demonstration of the “Patent-Lumen” technique. Once the vein graft is harvested and a clamp placed proximally, the intraluminal space is irrigated with a heparin-based solution. Once vessel dilation is complete the distal end of the graft is clamped.

Table 1 Post-operative intra hospital details.

	Total (n = 10)
Total Flap Loss	
Yes,%	0
Thrombosis Rate	
Yes,%	0
Venous Insufficiency	
Yes,%	0
Leak at site of anastomosis	
Yes,%	10
Hematoma Formation	
Yes,%	20

site of the graft at the arterial anastomosis. This was repaired with an 8-0 nylon. No further complications were noted for this patient.

Vein grafts during free flap tissue transfers may be required to bridge a gap between the flap pedicle and the remote recipient vessels. The “Patent-Lumen” technique consists of immediately dilating the graft with a heparinized solution until the vein is fully distended to assess for leaks and prevent kinking. A retrospective analysis of the technique demonstrated no flap failures and only a single incident of a microvascular complication (leak at arterial anastomosis) necessitating return to the operative theatre. This complication can be attributed to the microsurgical technique of the repair and is independent of the vein graft harvest technique and its benefits.

The use of the “Patent-Lumen” technique when harvesting vein grafts during free flap tissue transfer is simple and easily performed. Its advantages lie in maintaining lumen patency until restoration of flow, preventing kinking and intimal contact, and aiding in the immediate identification of leaks along the vessel. Furthermore, the distension helps anticipate the real length of the graft once the flow is re-established. This technique serves to optimize outcomes by identifying pitfalls prior to microvascular anastomosis.

Declaration of Competing Interest

None

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Supplementary materials

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Is there a place for pedicled perforator flaps in humanitarian plastic surgery?



Dear Sir,

The use of pedicled perforator flaps (PPF) has become common in developed countries in integumentary

Table 1 Surgical details for patients treated by flaps. Non-perforator flaps are greyed out.

Patient	Sex	Age	Perforator flap	Surgical procedure	Flap	Surgical revision	Complications	Follow-up	Coverage success
1	M	19	YES	Medial sural artery perforator flaps (MSAP) with muscular sparing flap	1	YES	YES: venous overload	1 month	YES
2	M	22	YES	Circumflex scapular artery perforator flaps (CSAP) + random skin flap	2	NO	NO	1 month	YES
3	M	53	YES	Medial knee genicular artery flap (GAP)	1	NO	NO	3 month	YES
4	M	42	YES	Circumflex scapular artery perforator flaps (CSAP)	1	NO	NO	1 month	YES
5	M	60	YES	Medial sural artery perforator flaps (MSAP) + muscular flap	2	NO	NO	1 month	YES
6	F	15	YES	Anterolateral thigh flap (ALT) + muscular flap	2	YES	YES: distal necrosis	3 month	NO
7	M	13	YES	Perforant brachial postérieur (SUCAP)	1	NO	NO	1 month	YES
8	F	16	NO	double MSLD + random skin flap	3	YES	YES: partial necrosis	1 month	YES
9	F	70	NO	Osteo cutaneous fibular flap + muscular flap	2	YES	YES: failure of the fibular flap	1 month	YES
10	M	48	NO	Distally based sural flap with venous supercharging + skin graft	1	NO	YES: partial necrosis	1 month	YES

reconstruction of the trunk and limbs. In the context of humanitarian missions, the versatility that PPF offers results in significant improvement compared to local plasties, skin grafts or classic flaps. Despite such enthusiasm, however, PPF are still very little used in reconstructive surgery in humanitarian situations. Our aim was to analyse their feasibility under such conditions.

By means of a five-item questionnaire sent to 26 French teams involved in humanitarian reconstructive surgery, we explored experienced surgeons' feelings toward the use of this technique. Our questions were:

- (1) Do you know about PPF?
- (2) Do you use PPF in your personal practice in Europe?
- (3) Do you use PPF during humanitarian missions?
- (4) Do you think PPF are reliable enough to be offered during missions?
- (5) Do you think that the procedure is too technically complex to be used on missions?

Eleven teams responded. All of the surgeons knew about PPF. Eight out of 11 respondents used the technique in their daily practice, whereas only one used did so on humanitarian missions. Eight out of 11 considered these flaps reliable enough to be used on missions, a four out of 11 considered them too technically complex to be used in such a context.

The main limits to their use are the long learning curve, the non-self-closing character when used for large defects, as well as the need for post-operative monitoring and the frequency of revision surgery. Among the benefits of PPF reported by the surgeons are respect for the donor site, transferability to the entire body, and the limited nature of technical means required. Finally, the respondents more widely

use pedicled fasciocutaneous and muscular flaps as well as split skin grafts on humanitarian missions.

In parallel, a two-week humanitarian mission to Togo took place in October 2017, within the framework of the *Association Solidarité Brulés Nantes Lomé*. A total of 15 patients were included. Ten patients were covered by flaps (Table 1). Seven flaps were perforator flaps including two circumflex scapular artery perforator flaps (CSAP) (Figure 1), two medial sural artery perforator flaps (MSAP), one superior ulnar collateral artery perforator flap (SUCAP), one anterolateral thigh flap (ALT) and one medial knee genicular artery flap (GAP). Indications were burns sequelae,³⁻⁷ traumatology sequelae²⁻⁷ and a sequela of sickle cell disease with tibial necrotic abscess.¹⁻⁷ Successful coverage was observed in eight out of ten patients, including six out of seven patients for PPF. Five out of 10 patients had a complication, two out of seven for PPF.

Humanitarianism in its fundamental principles aims to reduce human suffering, but also to reduce inter-human inequalities in so far as possible. To ethically propose a new surgical procedure in the context of humanitarian missions, the technique in question must meet criteria of feasibility (practicable under precarious conditions), reliability (low complication rate), simplicity (uncomplicated and fast, reproducible and relatively easy to teach locally) and familiarity (calling on techniques perfectly mastered by surgeons). In our experience, PPF meet these criteria perfectly, thus providing a valuable technique for humanitarian missions where indications are appropriate. In the current literature, only Godwin et al.⁸ deal with this subject in 2016. In the context of the Middle East, they proposed "A user's guide to local perforator flap reconstruction in a post-conflict setting". The authors describe the considerable advantages of



Figure 1 (a) Severe axillary contraction secondary to burn. (b) Identification of a bi-lobed scapular flap (CSAP). (c) Flap raising. (d) Rotation with closure at the donor site facilitated OR made easier by one of the lobes of the flap.

this technique, the majority of donor sites closed directly over more than 80% of their length, leaving only small areas to graft. Despite these obvious benefits, very few of the 26 reconstructive surgery teams operating in humanitarian conditions actually use perforator flaps, even though most respondents reported mastering the technique and believing it sufficiently reliable in this context. In answer to the possible disadvantage of an overly high level of technical complexity, our team was able to show that the procedure requires only basic instruments. The use of an acoustic Doppler served both in identifying useful perforators and in exploring vascularisation of the main axes where doubt might have existed.

Certain caveats and adaptations, however, must be put forward. A first observation concerns the pinch-test that allows us to judge the self-closing character of the donor site. We found less plasticity (more rigidity and less elasticity) of black skin and thus had to review preoperative tests rather quickly to ensure proper closure). A second adaptation concerns the difficulty of clinically monitoring the viability of flaps by capillary refill. In fact, the rapid detection of venous congestion—the major problem in PPF, including propeller flaps—is made virtually impossible. Where there is doubt, there is a choice of either rubbing one of the edges of the flap placed in an overhanging position or performing microneedle trauma to judge bleeding. Finally, during the post-operative period, the possibility of real immobilisation is also very limited.

We were able to confirm that PPF can be used safely on humanitarian missions in developing countries as a complementary but essential tool, and that the technique perfectly meets the needs of coverage and reconstruction in numerous indications. Teams from developed country teams involved in such missions should be trained in this technique and equipped with an acoustic Doppler. In a long-term perspective, this knowledge needs to be transferred to local surgical teams who can then provide this technique, independently of humanitarian missions.

Declaration of Competing Interest

None.

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Use of cannulated compression screws for skeletal stabilisation during digital re-vascularisation



Dear Sir,

Osteosynthesis is the first step in digital replantation and of paramount importance for re-vascularisation in the context of open fractures.¹ Multiple techniques have been described to achieve this: plates and screws, Kirschner wires, intrasosseous wires and combinations of these.^{2,3} K-wire fixation is the most commonly used, as it is fast and readily available in most Hand Surgery units. Insertion of two K-wires can be sufficient to stabilize most fractures and control rotation, allowing microsurgical reconstruction. However, this technique provides little compression, which may contribute to non-union occurring in up to 35%^{3,4} of fractures.

Plate fixation is more rigid and may compress the fracture site but requires refined surgical skills and takes longer. Sometimes this alternative can be contraindicated if the quality of the soft tissues is poor as further stripping may affect surrounding vascularity. Fixation with parallel or



Figure 1 Cannulated screw fixation used for osteosynthesis prior to re-vascularisation of index and ring finger at DIPJ.



Figure 2 Results at 3 months in same patient.

90-90 intraosseous wires is also associated with extended exposure.

Cannulated, headless compression screws provide an additional osteosynthesis modality that has not been routinely used for digital replantation and revascularisation. Fixation involves passage of a temporary K-wire that guides the insertion of a headless compression screw that has differential threading sections distally and proximally. This characteristic allows compression in between the threaded segments. We would like to report the use of cannulated screws in two patients with multi-digit injuries: the first case sustained open fractures of the proximal phalanges of the index, middle and ring fingers, all of which required re-vascularisation; the second case also required re-vascularisation of the index and ring fingers with fusion of the DIPJ's to manage compound fractures at that level in each digit.

For both cases, Aptus (Medartis, Basel, Switzerland) cannulated compression screws were used. For cases involving distal middle phalangeal fractures, stabilization was achieved by inserting an axial K-wire followed by the retrograde advancement of a 2.2 mm cannulated screw across the DIPJ (Figure 1). For fixation of proximal phalanx fractures, different technical strategies can be used to simplify the procedure. Insertion of the K-wire can be performed anterogradely through the fracture site, to allow the reduction and fixation of the proximal fragment. The pin can be then further advanced retrogradely through the head of the metacarpal while holding the metacarpophalangeal

joint flexed. This allows the insertion of a 3.0 mm cannulated screw through the head of the metacarpal into the proximal phalanx, as described by del Piñal.⁵ This approach obtained quick and rigid osteosynthesis with compression of the involved bony fragments and adequate rotation control. The five digits reported in this series were successfully revascularized and union was achieved for all of these in less than 3 months (Figure 2).

In our experience, cannulated screws are effective for revascularization cases, particularly when multi-digit injuries demand fast and reliable fixation before commencing microsurgical repairs. This technique has the benefit of requiring minimal dissection of adjacent soft tissues, preserving surrounding vascularity. We also hypothesise that the technique helps with venous drainage in replantation through the strong compression achieved at the site of osteosynthesis. The screw size should always be carefully measured as an implant which is too big for the medullary canal can break due to friction beyond its torque capacity. The use of this approach might be reserved for selected patients without gross contamination and after adequate debridement has been achieved. It has been reported that removal of these screws can be challenging and the permanent damage to the articular surfaces through which these implants are advanced through is still to be determined.

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Involved stitch technique for super-microsurgical anastomosis



Dear Sir,

Operative methods such as lymphaticovenular anastomosis for lymphedema, vascularized lymph node transfer, and fingertip re-adhesion are currently used.¹ However, there are few reports of the postoperative patency rates for super-microsurgery (≤ 1 mm). Using an experimental animal model of super-microsurgical anastomosis, we identified important factors that can reduce patency rates.^{2,3}

Creating a lymphaticovenular anastomosis is particularly difficult because the surgeon cannot insert forceps into the lymphatic lumen, which has a small lymphatic diameter. Furthermore, it is difficult to insert the needle in the ideal position to create an exact anastomosis. We used the involved stitch technique to easily anastomose vessels that are 1 mm or smaller. The advantages and adaptations of microsurgery are reported here.

Procedure

We performed membranectomy of an anastomotic region after isolating the blood vessels and lymphatic duct, and we placed the blood vessels and a lymph duct on a rubber sheet as a background. Because the lymphatics are very soft and small in diameter, the anterior wall and posterior wall of the

stump cannot be found in many cases. We held the center of the needle with a needle carrier. Subsequently, we pushed a moderately remote part of the lymphatic stump with the bent part of the needle, thereby deviating the lymphatic anterior wall and posterior wall and allowing identification of the lymphatic stump. The stump was expansive, and it was controlled by rolling an anastomotic vessel with the body of the needle. We held the lymphatic stump with the needle tip and inserted the needle into the lymphatic lumen from outside the wall. We also adjusted the margin to be sewn by following the curve and subsequently inserting a needle into the lumen. We confirmed the lumen with the needle tip, inserted the needle into the left blood vessel, and performed ligation using thread (Figure 1).

We created 10 lymphaticovenular anastomoses using the involved stitch technique and 10 using the usual lymphaticovenular anastomosis method (20 cases). We compared the amount of time required for both procedures. We also compared the lymphatic and venous diameters of the anastomoses and the number of anastomoses. The mean lymphatic vessel diameters and venous diameters that we anastomosed using the usual lymphaticovenular anastomosis method were 0.73 mm and 0.86 mm, respectively; however, when we used the involved stitch technique, the mean diameters were 0.67 mm and 0.82 mm, respectively. A mean of 7.1 anastomoses were created using the usual lymphaticovenular anastomosis method, and a mean of 7.2 were created using the involved stitch technique. Student's *t*-test was used for simple comparisons of the time required to create the anastomosis. The results are expressed as mean \pm standard error of mean. The statistical difference was determined by a two-sided Student's test. $P < 0.01$ was considered statistically significant. The mean average time required to create the anastomosis using the usual

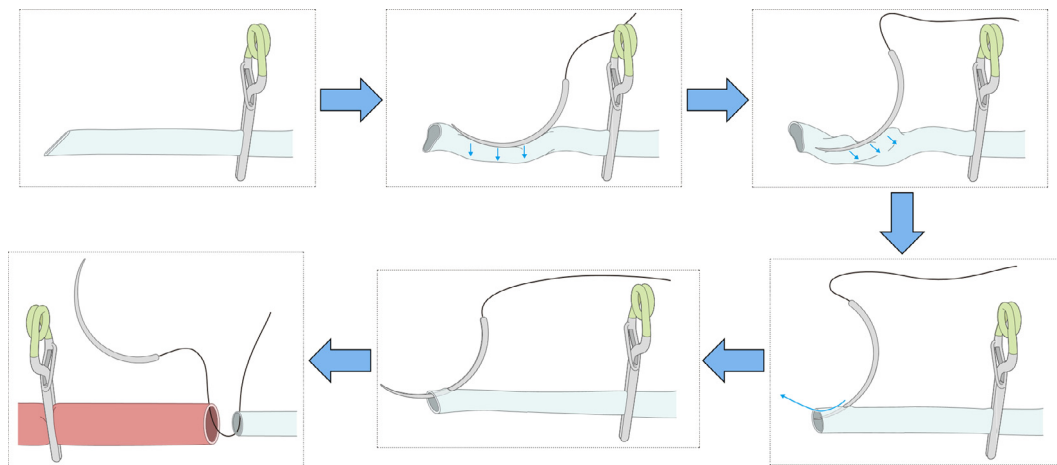


Figure 1 Involved stitch technique for lymphaticovenular anastomosis.

Upper Left: Before the anastomosis. The lymphatic anterior wall and posterior wall were stuck, and the lymphatic stump could not be found.

Upper Middle: Step 1. The lymphatic stump was found by gently pushing the lymphatics with a needle and a needle carrier.

Upper Right: Step 2. The lymphatic stump was further identified by twisting and rolling the lymphatics with a needle.

Lower Right: Step 3. We inserted the needle tip into the lymphatic stump, which then became clear.

Lower Middle: Step 4. We pushed the needle forward while confirming that the needle was not touching the lymphatic posterior wall.

Lower Left: Final step. We inserted the needle into the contralateral vessel.

lymphaticovenular anastomosis method (18.5 ± 1.69 min) was significantly higher ($P < 0.01$) than that required using the involved stitch technique (13.3 ± 1.10 min). Patency was confirmed in all 20 cases.

Discussion

The average number of stitches, lymphatic diameters, and anastomoses used for the usual lymphaticovenular anastomosis method and the involved stitch technique were similar. Additionally, the patency rates were similar after the anastomosis procedure. Therefore, the involved stitch technique is more advantageous than the usual lymphaticovenular anastomosis method because it requires less time while retaining accuracy. There have been several reports of super-microsurgery and lymphaticovenular anastomosis methods.^{4,5} However, there are few reports of needle insertion in thin, soft lymphatics. When we began the lymphaticovenular anastomosis procedure for thin lymphatics, the anterior wall and posterior wall were stuck because the lymphatics are very soft. In this case, the vessel stump can be searched for with the needle tip when the lymphatics are located on the other side of the surgeon's handedness (on the left side if the surgeon is right-hand-dominant and on the right side if the surgeon is left-hand-dominant). However, this method cannot be used to investigate the stump of the lumen when it is located on the same side as the surgeon's handedness. In this situation, the involved stitch technique is indicated. Furthermore, this procedure can be used for lymphedema of the arm. Using the involved stitch technique, we created a space between the lymphatic anterior wall and posterior wall using hanging traction and the needle, which made it easy to identify the lymphatic stump. In addition, the effect of vascular wall evagination can be created by inserting the needle into the vascular wall.

Conclusion

The involved stitch technique is useful for creating vascular or lymphatic anastomoses with small diameters. In addition, the shorter time required to create the anastomosis using the involved stitch technique is significantly beneficial.

Declaration of Competing Interest

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Ethical approval

Not required

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Buffalo skull-shaped supermicrosurgical lymphaticovenular anastomosis



Dear Sir,

We read with great attention the article entitled "Pre-operative planning of lymphaticovenous anastomosis: The use of magnetic resonance lymphangiography as a complement to indocyanine green lymphography" by Pons et al.¹ This article highlights how complex and crucial is the identification of functional lymphatic vessels in lymphatic surgery and particularly in supermicrosurgical lymphaticovenular anastomosis. Two major surgical procedures are performed to treat primary and secondary lymphedema: supermicrosurgical lymphaticovenular anastomosis (LVA) and vascularized lymph nodes transfer (VLNT). Because of its effectiveness and its minimal invasiveness, supermicrosurgical LVA are mostly performed.² VLNT indications are limited to advanced secondary lymphedema and severe primary lymphedema.³ Sometimes, no optimal LVA site can

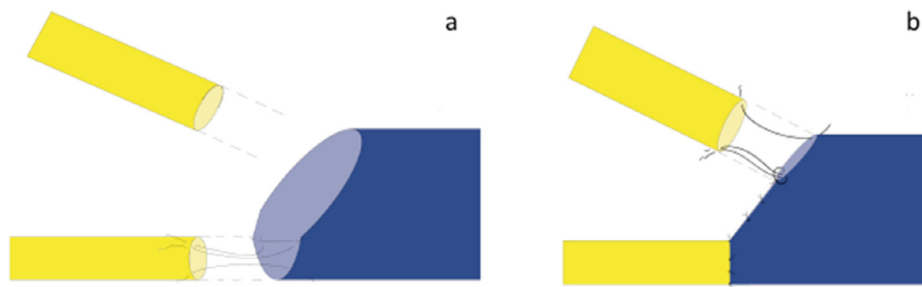


Figure 1 Beetle-shaped LVAs. Obliquely cut venous stump and first horizontal mattress suture (a). Second horizontal mattress suture after completion of the first anastomosis (b).

be determined even for experienced supermicrosurgeons; identifying a functional lymphatic vessel close to a suitable vein without blood reflux may be impossible through a 2-cm skin incision. Thus, appropriate LVA in conventional way such as end-to-end, side-to-end, end-to-side or side-to-side anastomotic configuration cannot be performed because of a diameter discrepancy or distant vessels.⁴ In order to solve this discrepancy problem that often involves a large vein and a thinner lymphatic vessel,⁵ microsurgical techniques such as venous-branch-plasty,⁴ fusion-lymphoplasty and vein funnelization have already been described. Frequently, multiple lymphatic vessels are available. To simplify multiple diameter discrepancy challenges, we describe beetle-shaped LVAs (Video 1) which is a modified funnelization technique involving a large vein and two thinner lymphatic vessels.

In this case, after a classic vessel preparation,⁴ a 2.10 mm vein and two 0.45 mm and 0.40 mm lymphatic vessels were identified in the reduced surgical field. The distance between each lymphatic vessel and the vein was too large to perform tension-free end-to-side LVAs. The transected vein did not show blood reflux.

First, the venous stump was obliquely cut. The first suture was performed between the obliquely cut venous edges and the lymphatic vessel like a horizontal mattress stich using 11-0 nylon microsuture. The remaining sutures were conducted as in a conventional end-to-end LVA. The obliquely cut part of the vein was closed in order to make a gradually narrowing vein. When the vein lumen was narrowed enough, the second LVA was performed. The first suture was also performed like an horizontal mattress. The remaining sutures were conventionally conducted (Figure 1).

Venous dilatation revealed a good LVAs patency (Video 1).

Beetle-shaped LVAs can be a relevant technique to perform intima-to-intima coaptated LVA between two distant thin lymphatic vessels and a significantly larger vein. The beetle-shaped LVAs technique is recommended, when a vein has no reflux and is 3 times larger than two lymphatic vessels.

Declaration of Competing Interest

None.

Acknowledgement

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Supplementary material

Supplementary material associated with this article can be found, in the online version, at doi:[10.1016/j.bjps.2020.02.008](https://doi.org/10.1016/j.bjps.2020.02.008).

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Effect of venous reflux on the surgical result of lymphaticovenous anastomosis



Dear Sir,

Lymphaticovenous anastomosis (LVA) is one of the surgical options for lymphedema.¹⁻³ Occasionally, reflux of blood may occur from the vein into the lymphatic vessel (Figure 1). In instances of large venous reflux, patients develop ecchymosis without pain or a local increase in temperature in the area drained by the lymphatic vessel, which usually disappears within a few weeks. A few reports have emphasized the importance of preventing venous reflux in patients undergoing LVA.⁴ However, clinical experience shows that intraoperative venous reflux or postoperative ecchymosis does not usually lead to unfavorable surgical outcomes.⁵

We investigated 101 patients with lower limb lymphedema who underwent LVA between August 2015 and July 2016, 15 of whom were excluded because of the lack of data regarding pre- or postoperative limb circumference. The limb circumference was measured at six sites as follows: 20 cm proximal to the patella, 10 cm proximal to the patella, at the center of the patella, 10 cm distal to the patella, at the ankle joint, and at the dorsum of the foot. The latest measurement data obtained from September 2017 were considered for postoperative evaluation.

Lymphoscintigraphy was performed by injecting ^{99m}Tc (222 MBq) into the bilateral first web spaces of the foot. Preoperative indocyanine green (ICG) lymphography was performed in patients who were not allergic to iodinated contrast agents. Lymphatic vessels were marked based on a linear pattern observed using ICG lymphography. Subcutaneous veins were identified using a noncontact vein visualization system (AccuVein Inc., Cold Spring Harbor, NY).

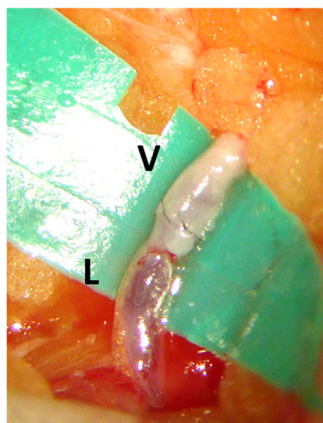


Figure 1 The intraoperative findings of lymphaticovenous anastomosis (LVA) with venous reflux. The lymphatic vessel appears red with blood. L: lymphatic vessel, V: vein.

An end-to-end, end-to-side, or side-to-end anastomosis was performed using 11-0 or 12-0 nylon sutures based on the diameter and the length of the vessels. After completing the anastomosis, a thorough evaluation was performed to confirm venous reflux into the lymphatic vessels, and findings were recorded. “Venous reflux” was defined as the constant backflow of venous blood into the lymphatic vessels. Patients wore the same stockings or bandages, pre- and postoperatively. This study was approved by the Institutional Ethics Committee, and written informed consent was obtained from each patient (approval number: 26-6).

Among 170 lower limbs in 86 patients, there were three men and 81 women, and the mean age was 60.6 years (range 34 to 88 years). The mean duration of lymphedema was 88.1 months (range 6 to 431 months). Based on the International Society of Lymphology (ISL) classification, 51 limbs were classified as stage 1, 21 limbs as stage 2a, 64 limbs as stage 2b, and 34 limbs as stage 3. Based on lymphoscintigraphy findings, 52 limbs were classified as type 1, 41 limbs as type 2, 42 limbs as type 3, 28 limbs as type 4, and 7 limbs as type 5. Three patients were diagnosed with primary lymphedema.

The mean postoperative follow-up period was 13.3 months (6 to 28 months). The mean number of anastomoses performed per limb was 4.7 (range 1 to 16). Most of the anastomoses were end-to-end manner, while 43 were end-to-side anastomosis. Intraoperative venous reflux was observed in 169 of 642 anastomosis sites (26.3%). The mean number of anastomoses showing venous reflux per limb was 1.00 (0 to 5). The number of anastomoses showing venous reflux was 91/351 (25.9%) in the thigh and 78/291 (26.8%) in the lower leg, although this difference was statistically non-significant ($p=0.81$).

There was not a significant correlation between the percentage of venous reflux in each patient and the change in the limb circumference (coefficient of correlation: 0.0040). Also, there was not a significant correlation between the percentage of venous reflux in each patient and the change in the circumference of the thigh and the lower leg (coefficients of correlation: -0.059 and 0.069 , respectively). Figure 2 indicates the change in the limb circumference in patients showing a venous reflux rate of 0% and 100%. The change rate was -0.79% and -1.3% , respectively, and this difference was statistically non-significant ($p=0.71$). There was not a significant difference in the patients' age, sex, BMI, and ISL stage ($p=0.91$, 0.62 , 0.14 , and 0.78 , respectively).

The limitation of this study was a possible presence of the standard error of measurement (SEM). SEM of the tape measurement is relatively large for very early-stage lymphedema in which the improvement in the measurement value before and after surgery was around 1%.⁶ Tape measurements, as well as lack on significant clinical improvement in both groups (0% and 100% venous reflux), makes the question difficult to conclude. A future challenge with longer follow up or larger group of patients is necessary.

Nevertheless, these results did not suggest that venous reflux adversely affected the outcome of LVA, despite occurring at 26.3% of the anastomotic sites. Further research is necessary to determine the percentage of patients showing postoperative venous reflux and the patency rate of the LVA.

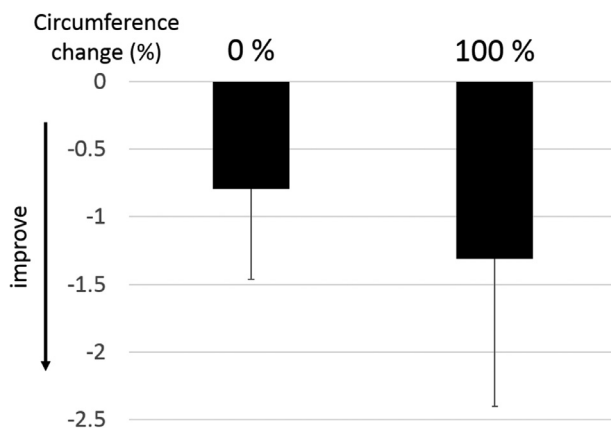


Figure 2 A graphical representation of the relationship between the surgical outcome of lymphaticovenous anastomosis and the venous reflux rate. No statistically significant difference can be observed ($p = 0.71$). The vertical axis indicates the circumference change (%), and the horizontal axis indicates the venous reflux rate (%). The minus (-) symbol indicates improvement in lymphedema.

Declaration of Competing Interest

None.

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Lymphaticovenular anastomosis in elderly patients



Dear Sir,

At our hospital, we consider multiple factors in determining the indication for surgical treatment for lymphedema, including age, the underlying causes of lymphedema, stage of edema, general health status, frequency of cellulitis, and the patient's treatment choices. While lymphedema in young individuals is generally treated using surgical lymphaticovenular anastomosis, conservative treatment is usually recommended for older individuals due to the overall poor health status. However, there is no evidence that treatment outcomes of lymphaticovenular anastomosis would be poorer in older than in younger individuals.^{1,2} Therefore, our aim in this study was to evaluate the clinical outcomes of lymphaticovenular anastomosis used for treating lymphedema patients over 70 years of age.

Our analysis was based on 10 cases of lymphaticovenular anastomosis performed in elderly patients ages 71 to 87 years, with a mean of 77.3 years. Six cases were over the age of 80 years while 4 cases were 70 to 80 years of age. All patients were women treated for secondary lymphedema, with one case after mammary tumor resection and axilla lymphadenectomy, and 9 cases after ovarian or uterus cancer resection and pelvic lymphadenectomy. The stages of lymphedema had the following distribution: one case of stage 2 lymphedema, seven cases of late stage 2, and two cases of stage 3. The effect of the treatment was evaluated using the change in volume of the affected limb obtained from circumference measures and observation. The average length of hospital stay was 11.4 days (7-15 days). On average, a 14.9% (4.1-32.2%) reduction in limb circumference was achieved, with a decrease in the incidence of cellulitis in majority of the cases. An increase in limb volume, from pre-surgery to six months after, was observed in two cases. (Table 1). Delayed wound healing post-surgery occurred in one case, which was successfully managed using conservative therapy. No other postoperative complications were identified.

Indications for lymphaticovenular anastomosis for elderly individuals

Lymphaticovenular anastomosis provides various advantages over conservative treatment including being adaptive to symptoms at different stages of edema, having a specific reduction effect on edema, thus having a protective effect against cellulitis onset, and procedures being repeated as

Table 1 Patients' characteristics and treatment results.

No.	Sex/Age	Type	Part	Stage	BW (upon admission)	BW (upon discharge)	BW (on follow-up)	Volume (upon admission)	Volume (upon discharge)	Volume (on follow-up)
1	F/79	S	L	II/	64.5	63.5	64.7	6113	5832	5875
2	F/81	S	L	III	55.1	53.2	54.2	8966	6076	7064
3	F/80	S	L	III	69.3	65.1	71.5	10,232	8243	8807
4	F/79	S	L	II/	46.3	44.9	45.9	7094	5808	5522
5	F/82	S	L	II/	42.7	40.7	41.5	5665	4143	4135
6	F/75	S	L	II/	70.7	71.5	71	7466	6995	7635
7	F/87	S	L	II/	59.5	56.7	57	8768	7213	7347
8	F/72	S	L	II/	55.6	55.3	57.4	6043	5797	6362
9	F/71	S	L	II/	58.1	57.7	59.7	6497	5925	6466
10	F/72	S	U	II	48.7	48.5	49.1	1583	1426	1497

No, case number; F, female; S, secondary; L, lower limb; U, upper limb; BW, body weight; II/, late stage 2.

necessary.^{3,4,5} A specific advantage is that this is a low invasive procedure performed under local anesthesia, typically completed within 2-3 h at our hospital, and requires only a few centimeters of skin incision. Spinal or general anesthesia may be needed for patients who might have difficulty lying down for 2-3 h, such as those with lumbago or patients who are not confident with receiving only local anesthesia. As the procedure can be performed under local anesthesia in the majority of patients, lymphaticovenular anastomosis should be considered for elderly patients. In fact, in our 10 cases, there was no adverse event associated with

the procedure, with patients in our study group being over 70 years.

Persistence of lymphedema in elderly individuals after lymphaticovenular anastomosis

Conservative treatment is generally recommended after lymphaticovenular anastomosis to prevent the progression of lymphedema after surgery, except in patients with early



Figure 1 Tubicot® is recommended for patients with a weak grip to improve adherence to the conservative management. tg grip® is another alternative for limb compression in patients with a weak grip.

stage lymphedema and those who have undergone lymphaticovenular anastomosis as a preventive measure. In our study group, progression of lymphedema after surgery occurred in 2 out of 10 cases, which likely occurred due to poor adherence to the conservative treatment after discharge. At our hospital, education on conservative management of lymphedema, such as pressure therapy and lymphatic drainage, is provided before and after surgery by therapists. The use of elastic compressive stockings that applies a continuous pressure of 20 mmHg to the limb might prove to be difficult for elderly patients with poor grip strength or with pain and deformity of the hands. Therefore, long-term monitoring of the adequacy and overall adherence to the conservative treatment of a patient is an important component of post-surgical care. At our hospital, we recommend the use of Tubicot® or tg grip® (Figure 1) to prevent thrombosis in the limbs. These materials are not as rigid as compressive stockings and, thus, are easier to don and doff by elderly patients. It is also valuable to consider the treatment participation and cooperation of the patient's family or health care providers in assisting elderly individuals with the necessary self-care and conservative lymphedema management.

The clinical outcomes of lymphaticovenular anastomosis performed in 10 patients over the age of 70 years were comparable to those obtained for younger individuals. No adverse events of the procedure were noted; however, lymphedema progressed after surgery in 2 out of the 10 cases. Due to comorbidities and limitations in self-care and conservative management after surgery, tailoring of the post-surgical management is an important consideration. Future prospective studies of elderly patients who underwent lymphaticovenular anastomosis are needed.

Declaration of Competing Interest

None

Funding

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Ethical approval

Not required

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Legal disputes involving plastic surgeries in Brazil: Main causes of patients' complaints, trial outcomes, and influence of the expert report on the results of appellate courts



Dear Sir,

Although the rise in lawsuits involving plastic surgeries is sensed across Brazilian tribunals, little is known about litigations considered by the trial courts and nothing regarding those judged by the appellate instance.

Medical lawsuits in Brazil are mainly tried in civil courts; however, the courts reversed the burden of proof and the defendant has to prove that s/he did not commit malpractice. To help the courts reach a fair decision, an expert witness, usually a plastic surgeon, is assigned.

Herein we evaluated 90 judicial decisions of the appellate courts regarding lawsuits filed against plastic surgeons in the period 2000-2015 that were registered in the system of the Justice Department of the State of Minas Gerais (TJMG, www.tjmg.jus.br), a state ranking third in Brazil in number of plastic surgeries. Out of the 204 initially identified lawsuits, we only included those that included the expert report's outcome. The surgery performed, the reasons underlying the patients' dissatisfaction, the role of the expert report, and the courts' outcomes were analyzed. Categorized data were statistically analyzed using GraphPad Prism v.7. The chi-square test and phi coefficient were used to look for associations between judicial decisions and the type of surgery or the expert report's conclusion. Relative risk (RR) was also established and the 95% confidence interval was computed using the Wilson/Brown method. The significance level used was $P \leq 0.05$.

The litigation cases considered by appellate courts analyzed here involved 20 different and combinations of plastic

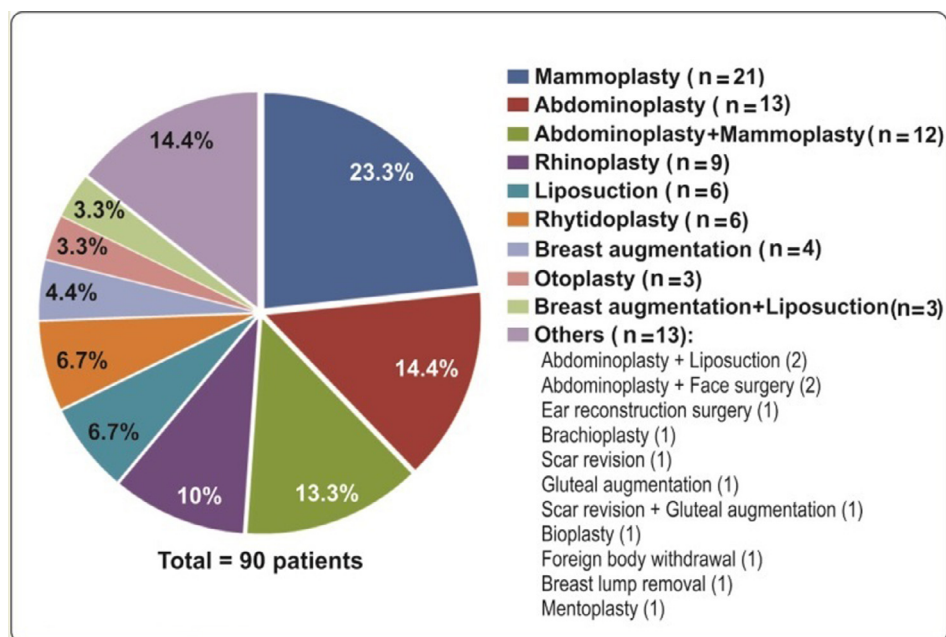


Fig. 1 Distribution of second instance court appeals according to the type of plastic surgery procedure. The total number of lawsuits ($n = 90$), and the number within brackets refer to the number of lawsuits for a given surgical procedure. Audit period: April 2000 to March 2015.

surgeries. Abdominoplasty and breast surgeries alone and combined explained 68.44% of all claims. With 10%, rhinoplasty was also a representative contributor. Liposuction, alone and combined with other surgeries, accounted for 12.2% of the appeals (Fig. 1). Breast and abdominal surgeries are also the most common causes underlying lawsuits of trial courts in five Brazilian states¹ whereas rhinoplasty predominated in the trial courts of the state Rio Grande do Sul.² However, only an association trend was found between the “type of surgery” and the “judicial decision” of the appellate courts ($P > 0.05$).

Patients’ complaints were mainly “unspecified dissatisfaction with the outcome” (30.4%), “unsightly scars” (25%), asymmetries (16.3%). Symmetry issues are commonly associated with breast reduction surgeries since they are technically challenging.³ Unsightly scars were the most common complaint in trial courts of other Brazilian states and in USA.^{1,4} Although scars have esthetic, social, and psychological impacts on patients, most factors influencing their formation cannot be inputted on the surgeon.⁵ Complications such as necrosis, infection, coma, and death explained 16.3% of all specific reasons for appeals. Failure to explain the risk of complications is a common reason for litigation and courts usually take this deficit seriously.⁴

Fig. 2 shows the influence of the expert report on the judicial decisions of the first and second instances. Overall, 46.7% of guilty decisions were upheld in the first and second instances and 43.4% were considered non-guilty by both courts. Only 11.1% of the cases had the decision changed by the appellate courts. Interestingly, even when the expert report favored the surgeon ($n = 53$), 36% of the first and 23% of the second instance decisions favored the plaintiff, with

64% and 77% considering the surgeon not guilty in the first and second instances, respectively. In contrast, when the expert favored the plaintiff ($n = 24$), 91.7% of the decisions taken at the first and all of the second instance accompanied the expert.

The variables “expert’s report” and “judicial decision” are significantly associated ($\chi^2 = 39.71$, $P < 0.0001$) and correlated at the second instance ($\phi = 0.72$). Agreement between the variables “expert report” and “judicial decision” was 72.2% for the first and 84.4% for the second instances. The RR of the surgeon being convicted at the second instance when the expert’s report favors the patient almost doubled in relation to the first instance (RR = 4.42; CI_{95%} 3.874-4.901). First instance lawsuits of five Brazilian states ruled favorable to the surgeon in 84.6% of the cases, when the expert report approved the defendant’s conduct.¹ Although the TJMG database does not disclose why some experts challenged the surgeon, it is possible to infer that consent issues were likely to be a recurring reason.¹

The growth in litigation observed in Brazil is probably because patients are increasingly more aware of their rights. However, the favorable outcomes to the defendant presented herein suggest that patients’ unrealistic expectations may underlie some of the disputes considered by Brazilian courts.

This is the first study to analyze lawsuits involving plastic surgeries judged by appellate courts in Brazil for a period of almost 15 years. Our results show an important role for the expert report on the courts’ decisions. Surgeons should reduce preventable medical malpractice, inform about complications, maintain thorough medical records, and use Informed Consent terms properly to

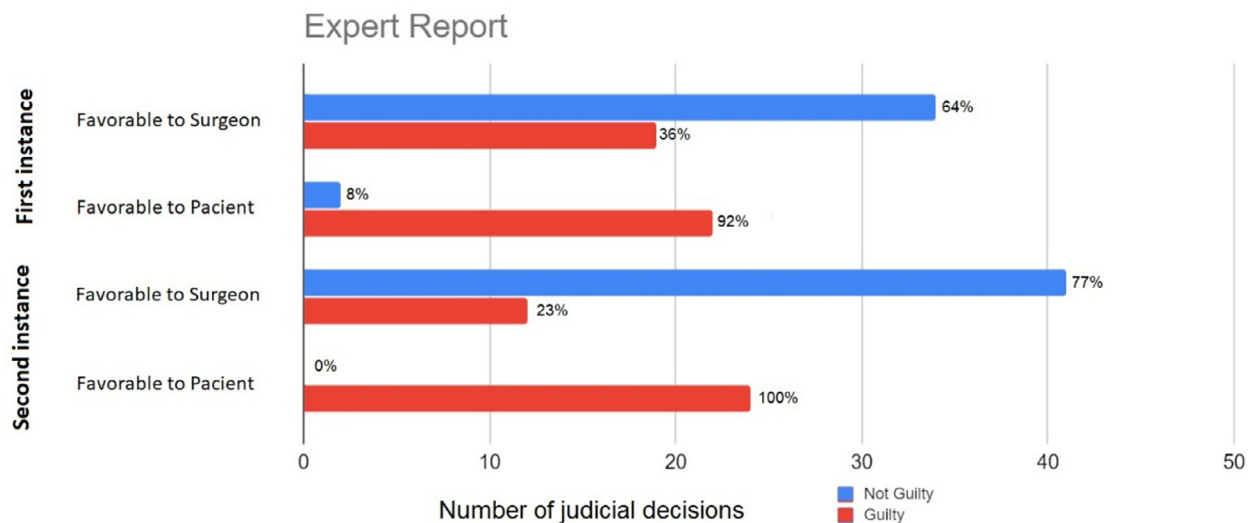


Fig. 2 Judicial decisions, defined as “favorable” or “not favorable” to the plastic surgeon, and their relationship to the conclusion reached by the expert witness report in the first and second instance appellate courts. Only the lawsuits that contained the expert reports’ outcomes were included (total $n = 77$) Audit period: April 2000 to March 2015.

strength their position before the experts, whose reports are key to the outcomes of the first and second instance courts.

Declaration of Competing Interest

There is no conflict of interest.

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Ethical approval

None

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Pigmented border of the toe as a consistent landmark to the digital nerve



Dear Sir,

The aim of a nerve block is to infiltrate around the nerve without damaging the nearby structures and the nerve itself.¹ Thus, a sound knowledge of the regional anatomy of the digital nerves is essential to conduct a safe and effective ring block. Studies on the digital nerves of the toe and its applied anatomy in surgical practice are sparse, and there are no clinically utilizable standard anatomical landmarks available to locate digital nerves of toes to date. Therefore, the objective of the study was to identify a consistent

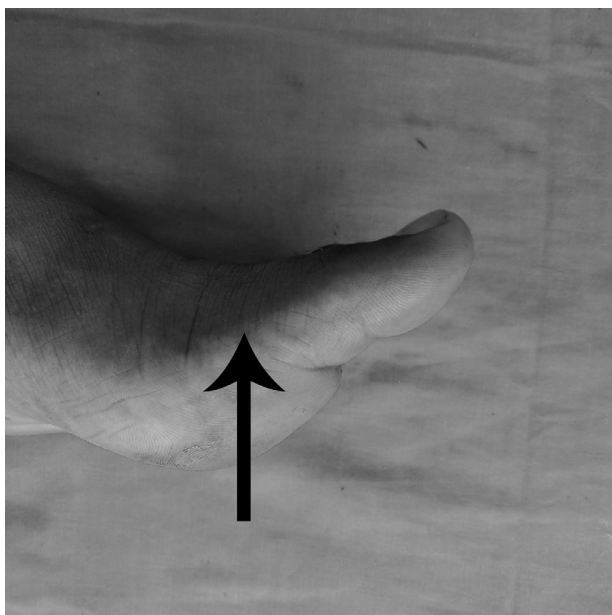


Figure 1 Pigmented border of the big toe (indicated by the arrow).

surface landmark for the digital nerves based on the pigmented border of the toes (Figure 1).

For this purpose, we studied 140 digital nerves in eight preserved adult Sri Lankan cadavers. We obtained photographs of the cross sections of the frozen toes at the proximal digital crease (Figure 2) and analysed using ImageJ (version 1.48). We measured curvilinear distance from the pigmented border to a point on the skin closest to the digital nerve (C); the direct distance to the nerve from the pigment border (X); the distance from the skin surface to the nerve (D); and the angle between the tangential line drawn at the pigmented border and a line drawn from the pigmented border to the nerve (θ). We also measured the mid-thigh circumference at the midpoint between the anterior superior iliac spine and the joint line of the knee, and length of the lower limb from the anterior superior iliac spine to the medial malleolus using a measuring tape.

We identified two digital nerves in each toe, and they were constantly situated towards the plantar side of the digital artery while the majority (95.7%, $n=134$) of the digital nerves were located towards the plantar aspect of the pigmented border. The median curvilinear distance to the digital nerve from the pigmented border was 0.28 (IQR=0.14-0.42) mm. The digital nerve was located 0.29 (IQR=0.20-0.37) mm deep to the skin in all the toes except in the big toe. In the big toe, this distance was 0.35 (IQR=0.29-0.42) mm. The median of the angle was 33.13 (IQR=14.67-50.50) degrees (Supplementary Table 1). Kruskal-Wallis test did not show significant differences in the curvilinear distances between toes [$\chi^2(4)=7.348$, $p=0.119$], but there were differences in the direct distance from the pigmented border [$\chi^2(4)=10.240$, $p=0.037$] and the depth from the skin surface [$\chi^2(4)=11.897$, $p=0.018$] among the toes. Post-hoc tests showed that these dimensions mainly differed in the big toe compared to the rest of the toes (Supplementary Table 2). Spearman's test found a

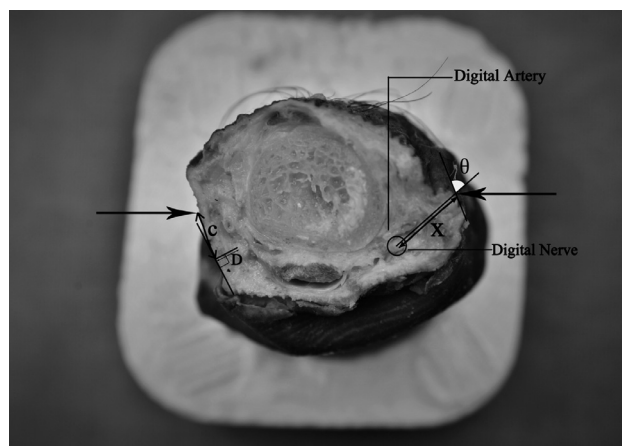


Figure 2 Cross-section of the big toe at the level of the proximal digital crease demonstrating the digital nerve and the digital artery in relation to the pigmented border (indicated by the arrow). Abbreviations: C - curvilinear distance from the pigmented border to a point on the skin closest to each digital nerve; X - the direct distance to the nerve from the pigment border; D - the distance from the skin surface to the nerve; θ - the angle between the tangential line drawn at the pigmented border and a line drawn from the pigmented border to the nerve.

negative correlation between the mid-thigh circumference and curvilinear distance ($r_s = -0.225$, $p=0.008$). Similarly, there was a negative correlation between the mid-thigh circumference and the angle ($r_s = -0.181$, $p=0.032$).

This study describes the pigmented border of the toe as a clinically applicable consistent landmark to locate the digital nerves. Having a single nerve trunk in one side of a toe at the level of the proximal crease makes delivering anaesthesia with a single needle puncture easy and accurate. Since there was a negative correlation of the curvilinear distance with the mid-thigh circumference, it can be inferred that the digital nerve is closer to the pigmented border in individuals with a higher body mass index. Since the nerve was located very close to the pigmented border (~ 0.3 mm) and very superficially beneath the skin (~ 0.3 mm), the anaesthetic needle must be inserted immediately beneath the skin surface when delivering anaesthesia.

According to Anthony and Mathangasinghe et al.,² the curvilinear distance from the pigmented border to the nerve was more on the ulnar side of the thumb than on the radial side. Conversely, this difference was not noted in the great toe. This may be because the thumb is rotated in primates unlike the great toe, which lies in parallel to the rest of the toes. Our findings showed that the proper digital nerves were located approximately at 4 and 8'O clock positions in most instances, which is consistent with the description by Kelly and Spektor.³ However, identifying the position of the nerve using the pigmented border is accurate than locating the nerve based on the face of a clock in clinical practice.

Due to risk of gangrene, adrenaline was avoided traditionally in digital blocks. However, recent evidence suggests that even adrenaline can be injected to the digits in a controlled way if the digital vessels can be avoided.⁴ The major

theoretical insecurity of dorsal approaches is the vulnerability of a direct vessel injury by the anaesthetic needle that essentially passes in close proximity to the neurovascular bundle.⁵ We found that the digital nerve is always located ventral to the digital artery, hence inadvertent puncture of the digital artery can be avoided if this relationship of the artery to the nerve is appreciated. Nevertheless, safety of the use of adrenaline should be carefully evaluated in clinical studies before using it in common practice.

Declaration of Competing Interest

None.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:[10.1016/j.bjps.2020.01.024](https://doi.org/10.1016/j.bjps.2020.01.024).

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The value of letters to the editor; medical students' perspective



Dear Sir,

We would like to thank M. Felix Freshwater for their article titled, 'R.I.P. the "Re:" Letter to the Editor', which we found to be thought provoking and as medical students at King's College London we offer our contribution to the discussion.¹

The article outlined a number of problems that exist with the current system of responding to papers via Letters to the Editor. Whilst agreeing with the problems listed, we believe it is also important to address the potential value of letters authored by medical students as published material often lacks meaningful impact and discussion.¹

Great emphasis is placed on medical students to publish articles in an attempt to acquire points for the UK Foundation Programme Application Score (FPAS) rather than aiming to progress the discussion of the original work or sharing readers' opinions.² As medical students, many of our peers publish letters to the editor in response to a wide array of topics as it is often the easiest route to acceptance of work in peer-reviewed journals. The harder alternative is to publish original research articles which, for the majority of students is unrealistic as they do not have access to working with researchers, the time to pursue co-curricular projects, or even the genuine interest to pursue research. It is through letters to the editor, students are able to collaborate in large groups and spend considerably less time in publishing a letter when compared to an original research article. Sadly, we find that this approach means the benefits of original research such as conception and implementation of methodology, statistical knowledge, and skills in critical appraisal are now neglected by many students. These skills are necessary for practicing doctors to be able to identify the worth of novel science and therefore, should be actively encouraged and rewarded.

Evidently, many students submit letters for reasons other than promoting scientific discussion and therefore the value of these letters must be considered. A survey of 515 medical students, ranging from year 1 to year 5, from seven medical schools across the United Kingdom (Southampton, Warwick, University College London, Cardiff, Peninsula, Manchester and Edinburgh) showed that only 21% of students submitted articles to journals due to genuine academic interest with 51% of students submitting purely for career progression.³ Moreover, most students submitted articles to journals they felt had the highest chance of accepting their manuscripts. This may suggest that most student publications of this nature are do not aim to be consequential and do not make impactful contributions within the scientific community.

The UK Foundation Programme (UKFPO) values all published items with a PubMed ID on the same merit as points awarded are all equal regardless of article type or research quality. Additionally, collaborative authorship is not

penalised as articles may have irregular authorship contributions.² Therefore, as the status quo encourages students to invest time in letters, there is no incentive for students to develop the necessary skills acquired from high-quality research. As the UKFPO plays a major role in the production of these letters it also has the capability to help cultivate encouragement in producing high-quality research.⁴ As medical students are often proactive and extremely hardworking, mobilizing this group may accelerate the advancement of medical science by increasing the available workforce.

We believe that the restructuring of the UKFPO point allocation system in order to reward higher quality research may provide a solution. The current system awards 1 point per publication, with a cap of 2 PubMed IDs across all formats. We propose that there should be an increase to the points available for publications whilst capping the number of letters to the editor eligible for scoring alongside articles of different categories being worth a different number of points. It is our opinion that this restructuring would reward medical students for high-quality research and devalue less meaningful contributions, encouraging them to develop and enhance key research skills whilst making more significant impacts to the scientific community.

Declaration of Competing Interest

None.

Funding

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Distal skeletal traction with a temporary Kirschner wire to facilitate open reduction and internal fixation of phalangeal fractures



Dear Sir,

Surgical treatment of unstable phalangeal fractures can be a challenging task even in experienced hands. Multiple fixation techniques are available for this purpose, including percutaneous pinning with Kirschner wires¹, intramedullary cannulated screws², and open reduction and internal fixation with plates and screws³. The benefits of rigid internal fixation have been widely reported in the literature, as it confers skeletal stability and subsequent primary bone healing and allows aggressive early mobilisation.

In order to achieve successful internal fixation, it is crucial to obtain and maintain anatomical reduction until metalwork is secured in place. Direct manipulation of the fracture site with bone reduction forceps is not always enough to achieve this goal, especially in the context of comminution. In this situation, axial distraction of the fracture site can be a helpful manoeuvre by taking advantage of the ligamentotaxis principle, as distracted soft tissues tend to bring skeletal fragments together.

This orthopaedic concept is well-known to hand surgeons, being the cornerstone for the use of the Suzuki frame for managing comminuted proximal interphalangeal joint fractures⁴. Nonetheless, effective distraction can be difficult to deliver in the context of an open reduction and internal fixation of phalanges. Intuitive alternatives include manually pulling the affected digit, with the aid of a dry gauze or by using a Chinese finger trap. These alternatives do not tend to deliver consistent traction and do not provide rotational control. Furthermore, having the assistant's hands quite close to the operating site, can be troublesome for such an exacting procedure.

We have addressed this issue by using a temporary Kirschner wire placed distal to the fracture site. For proximal phalangeal fractures we start by marking the exact position of the head of the middle phalanx on the lateral aspect of the affected finger, with the aid of a 25 G hypodermal needle placed subcutaneously⁵. This is followed by insertion a transverse Kirschner wire across this bony landmark leaving similar length at each side of the intervened digit. The wire can be then bent at both sides at 90° where it exits the skin and held with heavy forceps (Figure 1). In this way, an assistant can reliably control distraction and rotation from a safe and comfortable distance, facilitating reduction and internal fixation (Figure 2). A wire can be similarly passed through the distal phalanx for distraction and control during fixation of middle phalangeal fractures.

Once stability has been achieved by fracture fixation, the distal temporary Kirschner wire can be removed. The operation is then completed by closure of the incisions and protection of the operated site with dressings and appropriate

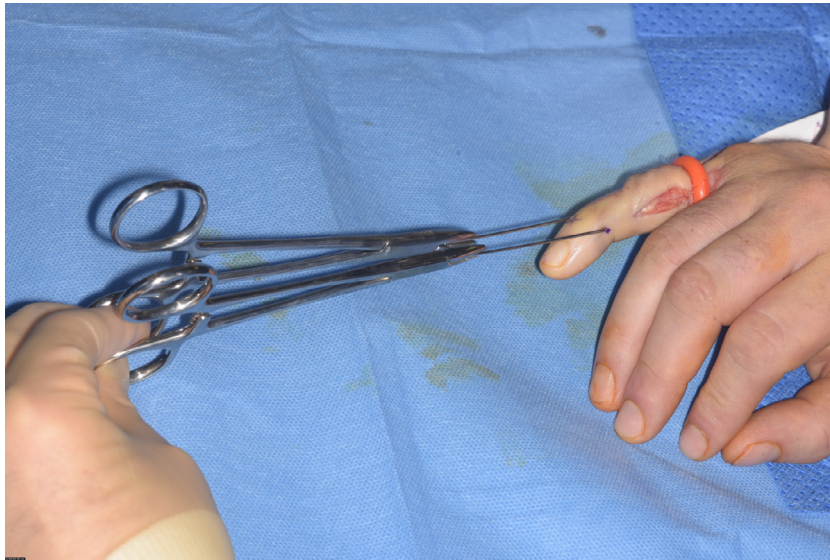


Figure 1 Intra-operative photograph demonstrating the use of a temporary Kirschner wire to deliver skeletal traction.

splints. Evidence of traction k-wire insertion can be seen on subsequent X-rays but does not affect the recovery or affect later rehabilitation.

Funding

There were no external sources of funding for this study.



Figure 2 X-ray film exhibiting successful reduction obtained by distal skeletal distraction of the fracture site. This was secured with a bone reduction forceps and then followed by lag-screw fixation.

Declaration of Competing Interest

The authors decline having any conflicts of interest in relation to the work presented in this article.

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A survey of current burns knowledge in UK undergraduate medical students



Dear Sir,

In recent years the undergraduate medical curriculum in the United Kingdom has undergone significant reshaping to reflect the primary and holistic care needs of today's society. Subspecialty interests; such as burns care and reconstruction, are now infrequently represented in the formal teaching programme¹⁻⁴. We aimed to further explore medical students' self-reported confidence in initial burns management to give an indication whether more emphasis on teaching this subject at an undergraduate level is required.

Between January and June 2019, ninety-six MBBS students from years one through to five at Hull-York Medical School were surveyed online on their confidence in a range of learning outcomes within burns medicine (Table 1). The responses were graded on a Likert scale of 1-5 (strongly disagree to strongly agree). Ethical approval for the survey was achieved from the Hull-York Medical School Ethics Committee. All participant responses were fully anonymised. Responses were coded by the investigators and analysed.

Demographic data was acquired from participants that included year group, completion of an acute care rotation or extra-curricular training in acute care e.g. Prehospital Care Programme. The results of the survey are presented graphically in Figure 1. The total mean respondent confidence (2.68) across all the learning points suggested that the average student neither agreed nor disagreed with the statements. There was a statistically significant ($p < 0.01$) modest positive correlation (0.51) between increasing MBBS year group and confidence in the 16 learning points. There was a statistically significant ($p < 0.01$) improvement in confidence in the 16 learning points between students who had completed the acute care study block and those who had not. There was a statistically significant ($p < 0.01$) improvement in confidence in the 16 learning points between students who had extra-curricular training and those that did not. When asked for their confidence in the adequacy of burn care representation in the MBBS curriculum, on average the study population neither agreed nor disagreed (2.56). Most students disagreed (median response of 2) that they had a prior interest in pursuing a career in burns surgery, though most agreed (median response of 4) they need more exposure to burns care and management before they could decide whether they would be interested in pursuing burns care as a career. On average students agreed (3.47) they have an interest in attending a seminar to find out more about the speciality.

Table 1 Survey questions completed by participants.

1. I understand the mechanism by which certain burn injuries can cause airway obstruction.
2. I can recognise a burn that will pose a risk to the airway and know the appropriate management steps to mitigate this risk.
3. I am aware of the initial steps that must be taken to halt the burning process in a patient.
4. I can recognise a patient with a burn injury that will necessitate fluid resuscitation.
5. I know of a formula to assess fluid requirements in burns patients.
6. I am aware of 'The Rule of Nines' and can apply this to a burn injury.
7. I understand the differences between first-degree, partial-thickness, and full-thickness burns.
8. I can differentiate between real-life examples of first-degree, partial-thickness, and full-thickness burns.
9. I understand the initial investigations that may be required for a patient with a burn injury.
10. I am aware of the potential complications associated with circumferential extremity burns and how to assess the patient for these complications.
11. I understand the factors that necessitate gastric tube insertion in a patient with a burn injury.
12. I understand the initial steps of wound care of burn injuries and when cold water should and should not be applied.
13. I understand the circumstances in which antibiotics are deemed necessary for a burn injury.
14. I am aware of the importance and duration of irrigation of chemical burn injuries and understand the difference in duration for alkaline burn injuries.
15. I am aware of the additional complications and assessment that is required in patients with electrical burn injuries.
16. I am aware of criteria for burn injury patients that necessitates their transfer to a specialist burn centre.
17. I have a subspecialty interest in, and would consider a career in burn care.
18. I need more exposure to burn care and management to decide if I would be interested in pursuing this as a future career.
19. I have been/would be interested in attending a burns seminar to find out more about the speciality.

The results of this survey suggest that medical students lack knowledge in initial management of patients with burns, even towards the end of their undergraduate training. When students make the leap to becoming junior doctors, it is imperative that they be capable to initially manage burns patients, whom they are likely to encounter during common foundation jobs, such as in Emergency Medicine and General Practice. We encourage burns centres nation-wide to hold seminars or selected modules at medical schools in their locality in order improve access

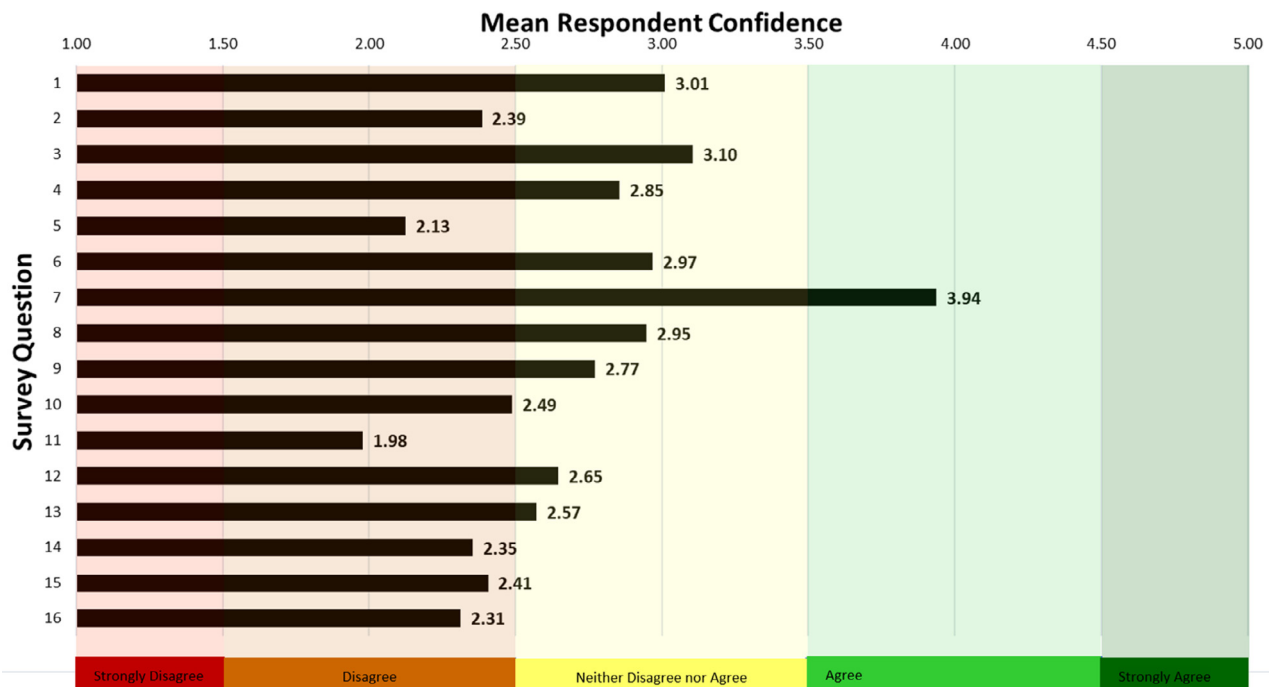


Figure 1 Graph showing the mean respondent confidence for the 16 learning outcomes related to the initial management of burns.

to the speciality and to ensure students are graduating with the knowledge required to enable them to confidently manage these injuries and spark an interest in subspecialty specialisation. We hope this survey will encourage those working in burns centres in the UK to reach out to their local medical schools to remedy this gap in formal teaching.

Declaration of Competing Interest

The authors have no conflicts of interest to declare.

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Building a virtuous cycle of surgical cleft-craniofacial care by combining surgeon centered outcome and patient reported outcome measures



Dear Sir,

In the mid-1950s and 1960s, Drs. Millard and Tessier revolutionized the treatment of cleft and craniofacial

deformities. Since then, incredible advances have been established in the field of cleft-craniofacial surgery, but the surgeon-centered outcome measures have remained unchanged. The surgeon-based perceptions and judgments exposed in scientific meetings and articles have persistently been based on declarations of successful treatments such as “my surgery changed patients’ appearance”. The motto “show me your best result” was typically adopted by surgeons to judge their peers. Pre- and post-operative photographic views of well-selected patients who had the “best” results were frequently adopted to support the chosen intervention, but the full spectrum of the result and average result were unfortunately not completely considered.¹

However, both subjective and objective surgeons’ understanding and judgment of the impact of a health condition and surgical treatment on patients’ daily lives and satisfaction with care are limited.² Therefore, how could the audience/readers of meetings/articles be sure that the affirmations from skillful, experienced surgeons have contemplated the elements of health that matter for patients? No complete response to this issue existed over the past decades, until the recent development of the sophisticated condition-specific patient-reported outcome measures (PROMs). By ensuring psychometric properties of reliability, validity, and responsiveness, the CLEFT-Q, FACE-Q, and VELO tools collect comprehensive, clinically meaningful, and scientifically sound data directly from patients with a wide spectrum of congenital and acquired cranio-orbito-facial-dental abnormalities.^{3,4} The authors argue about how the adoption of the PROMs may assist in filling this historical-critical gap.

While it is undeniable that we should acknowledge the contributions of different generations of cleft-craniofacial surgeons, the need to put patient value, belief, and opinion into perspective is unquestionable. It seems a great opportunity to *replace* the previously adopted motto “show me your best result” to the motto “show me your surgical-derived PROM value,” which is now more consistent with the provision of optimal, high-quality, and patient-centered surgical care. Embracing PROM-based care, does not necessarily *reject* the importance of surgeon-centered outcome measures. When the traditional surgeon-centered outcome measures and newly-developed cleft- and craniofacial-specific PROMs are strategically aligned, they enter a virtuous cycle (Figure 1) that could potentially enhance surgical cleft-craniofacial care. For this, surgeons, payers, policymakers, and other stakeholders should recognize the value of PROMs in daily practice, and appraise scientific presentations and articles, define the endpoints of research projects, and manage health-system-related decision-making processes such as resource allocation. They should also admit that the routine use of PROMs will not only add administrative workload (a negative but necessary point of the process) but will also improve patient-physician shared decision making and patient satisfaction with care (unquestionably positive points).⁵ Training programs also need to expose surgery residents, the next generation, to PROMs.

This shift from a surgeon-centered model to a patient-centered pathway would transform the delivery of surgical

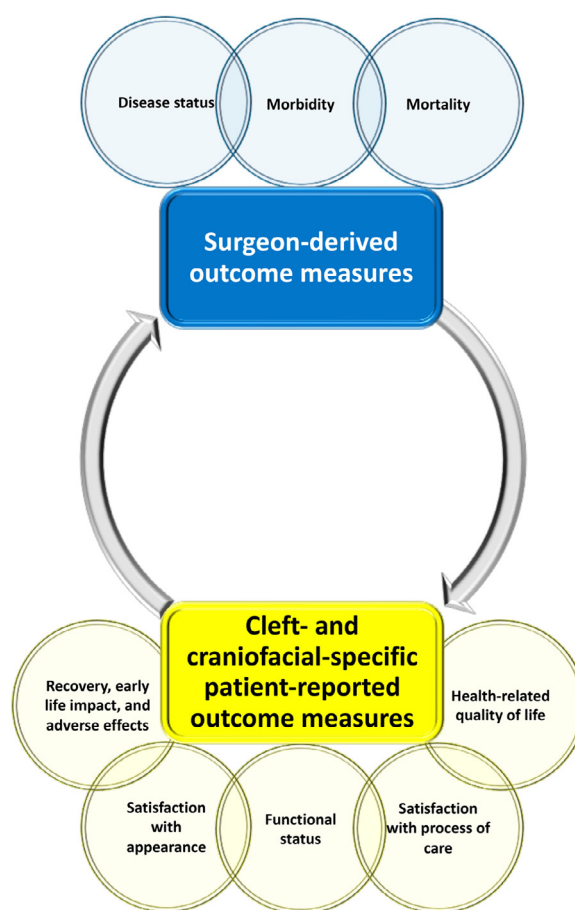


Figure 1 The core-value of a safe cleft-craniofacial surgery should be to improve the patients’ perception of their appearance, function, and well-being. Patient-reported outcome measures (PROM)-based data derived from treated patients provides a golden opportunity to learn from the negative outcomes, and devise strategies to ensure future success, creating a virtuous cycle of care. For example, by employing PROM-derived data (low rate of satisfaction with appearance of the lip scar), a surgical-related approach needing enhancement is identified (e.g., lack of postoperative scar care as defined by a surgeon-derived tool like a checklist) and modifications (e.g., routine use of silicone sheet) implemented accordingly.

cleft-craniofacial care. It will be a long-term journey of transformation, but with the support of all professionals committed with treatment of cleft-craniofacial deformities, it is possible to get there.

Declaration of Competing Interest

There are no conflicts of interest to disclose.

Financial disclosure

None.

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The Editor, JPRAS never events in plastic surgery



Dear Sir,

My eye was drawn to the paper by Berner et al.¹ for a number of reasons, not least as I had a similar experience myself some years ago. I also have a mild visceral reaction to the term 'never event' and would appear not alone in appreciating the sentiment² whilst concomitantly feeling somewhat nervous by the more than faintly accusatory tone implied.

Reading further I appreciated the summary of thoughtful analysis by which an aspirationally mature, forward-looking organisation is characterised.

Returning to my personal experience; some years ago I encountered a patient. He had been operated on by another surgeon many months previously and presented with a small, intermittently healing wound in the vicinity of an otherwise well-healed scar (Figure 1a). Ultrasonic investigation confirmed my suspicions of a retained foreign body. Rather than remnant drain tube as I had expected, surgical extraction (Figure 1b) demonstrated it to be the plastic trocar cover of a low-suction drain (Figure 1c). Whilst



a



b



c

Figure 1 a: mature right lateral chest scar with a small ulcerated area. b: appearance of foreign body following ulcer excision and initial manipulation. c: intact foreign object revealed as trocar sheath from low-suction drain.

root-cause analysis eventuated similar recommendations, we concluded the trocar sheath should be part of the formal nurses' instrument count.

The same drainage system remains in regular use by numerous surgeons at our institution. During the past 8 years we have not experienced a repeat therefore recommend this small, but important, addition to the formal count process at the end of each and every surgical procedure.

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Re: Starting an autologous breast reconstruction program after plastic surgical training. Is it as good as it gets?



Dear Sir,

We read with interest your recent article entitled ‘Starting an autologous breast reconstruction program after plastic surgical training. Is it as good as it gets?’.¹ Your article raises some interesting points regarding training and the setting up of a microsurgical department for novice surgeons.

The observation that novice plastic surgeons are able to perform microvascular breast reconstruction within newly established departments and still achieve favourable flap survival rates compared to those of an established institution is interesting. It is wonderful that microvascular services are able to expand and offer increasing access to patients undergoing complex reconstruction.

Your discussion raises some interesting questions about how such an achievement might be reproduced elsewhere. In terms of experience, it would be interesting to know how much microsurgical exposure these plastic surgeons received throughout their training programme, with particular reference to the number of cases supervised and performed solo, especially in the run up to them completing training. Certainly, in the UK, trainees have to achieve a minimum number of cases before they can be awarded their completion of training certification. There also exists a large amount of evidence that completing a higher fellowship improves training, competencies and delivers better patient outcomes.² It is widely expected in the UK and elsewhere that trainees interested in undertaking microvascular specialisation do so after a period of extended experience to gain as much exposure to the many nuanced challenges which might present during the course of microsurgical reconstruction. It would have been helpful in this context to have identified which of the three new plastic surgeons had undertaken the microsurgery fellowship and compared those outcomes with those who had not completed a

fellowship. Paired with this, it would have been of great interest to know more about the learning curve over the 30 month period, beyond simple operation duration, to know at which part of the operation do these efficiencies improve. Does the ischaemic time shorten for example?

It is also important to comment that surgical outcomes in microvascular surgery are heavily dependent of infrastructure. Salvage rates are heavily dependent on the post-operative monitoring.³ Understanding how these new units were staffed with the multidisciplinary team presumably unfamiliar initially with monitoring free flaps and detecting problems is key. How theatre staff were prepared and optimised for long cases is helpful to understanding how such novice units can be established elsewhere.

One final point is that free flap reconstruction outcomes should extend beyond simple flap survival. The technical aspect of raising a flap and anastomosing tissue that survives is of course important. The ability to shape the flap and improve the aesthetic is something we feel comes with experience and numbers and presents the biggest part of the learning curve model in microsurgery. Understanding patient views on their outcomes is of paramount importance; it is by these outcomes that we are ultimately judged as surgeons.

Declaration of Competing Interest

None.

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