



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

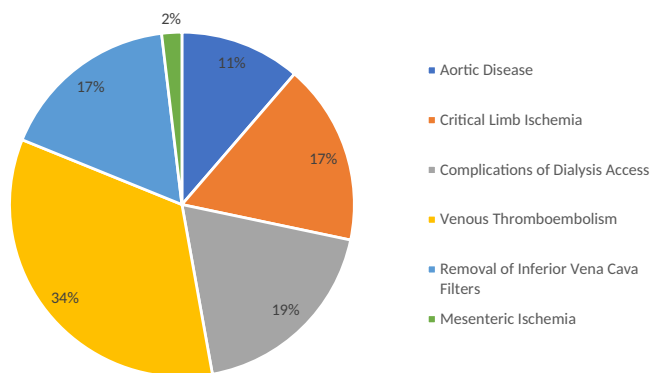


Fig. Types of patients undergoing surgery during the pandemic period.

department has preferred local anesthesia under the premise that patients can tolerate and cooperate, reducing the use of tracheal intubation to generate aerosols, which would increase the risk of infection to anesthesiologists.⁴ In the choice of intravenous access during surgery, we have preferred the dorsal vein or saphenous vein, again to avoid close contact between the nurse and the patient's respiratory tract. Using these methods, we have offered reasonable medical care for these critically patients during this crisis. None of the patients, medical staff, or other contacts had an infection during the treatment.

In conclusion, the treatment of patients with critical vascular disease is very urgent. In addition, most vascular diseases can be treated by endovascular surgery, which makes surgery safer during this pandemic. Through strict epidemic prevention and control measures, basic and reasonable medical services can be provided to patients with vascular diseases.

Wenrui Li, MD

Xueming Chen, MD

Hai Feng, MD

Department of Vascular Surgery
Beijing Friendship Hospital
Capital Medical University
Beijing, China

REFERENCES

1. World Health Organization. Coronavirus disease (COVID-2019) situation reports. Available at: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports>. Accessed April 8, 2020.
2. Office of Foreign Affairs, Committee of the CPC Beijing Municipal Committee. Daily update on 2019-nCoV. Available at: http://wb.beijing.gov.cn/home/ztzl/kjyq/fk_yqtb/202004/t20200408_1797753.html. Accessed April 8, 2020.
3. American College of Surgeons. COVID-19: recommendations for management of elective surgical procedures. Available

at: <https://www.facs.org/about-acs/covid-19/information-for-surgeons/elective-surgery>. Accessed March 19, 2020.

4. Wax RS, Christian MD. Practical recommendations for critical care and anesthesiology teams caring for novel coronavirus (2019-nCoV) patients. *Can J Anesth* 2020;67:568-76.

<https://doi.org/10.1016/j.jvs.2020.04.466>

Distance learning for vascular surgeons in the era of a pandemic



The COVID-19 pandemic has caused medical and vascular surgery societies to redefine and redeploy clinical roles emergently at a pace and scale without precedent. In addition, the crisis has provoked the impetus for overdue changes to educational and training methods that have stood their ground since the birth of hospital medicine: lectures, workshops, and conferences.¹ The spread of coronavirus has left thousands of medical students stranded. All specialist training ventures have been deferred. Educational and clinical meetings have been cancelled.

When what remains of our communities finally draws a post-COVID19 breath, specialties, including vascular surgery, must seize on the value from measures taken by major industry. Apple Inc (Cupertino, Calif) transformed its major annual conference, Apple Worldwide Developers Conference, into an online-only meeting. If this venture succeeds, it will provide a template for online-only conferences in other disciplines. Should it not, we must learn from an analysis of why it failed to work. Providing an online-only conference is a tall ask; Google LLC (Mountain View, Calif) canceled theirs altogether. Delivering a fully online international conference is not a challenge to be underestimated.

The effect of COVID-19 on routine clinical and administrative congregation has been abrupt, overwhelming, and unprecedented. Meetings of large groups within a closed environment, commuting to and from academic institutions, and physical presence at close quarters have all been proscribed to minimize the spread of SARS-CoV-2. The U.K. National Health Service, in the words of Andy Cowper (*Health Service Journal*), has seen more progressive change in a fortnight than has been accomplished in years of stifled effort. The instigation of virtual outpatient encounters to replace unjustifiably hazardous hospital attendances is one example. How then, should we translate these developments into the domain of surgical education?

The infrastructure is already in place to provide exclusively online vascular surgical learning, both synchronous and asynchronous. The European Society for Vascular Surgery has a proven track record of providing both

asynchronous eLearning for academic learning objectives (blended learning modules and online courses, 2012-2016) and synchronous e-classes (masterclass 2019-2020).^{2,3} Renowned vascular surgery conferences such as the annual Leipzig Interventional Course regularly broadcast operative interventions in real-time, sandwiched into a full day's congress schedule—a remarkable feat of both organization and technical expertise. Some manufacturers of medical devices (eg, W.L. Gore & Associates Inc, Newark, Del) have already released novel mobile applications to address the lack of onsite support when needed.⁴ However, these cutting-edge distance learning practices have remained the exception, rather than the norm. The technical knowledge exists; the instructional designs are valid—the missing cog appears to be the wider uptake of these training models. It is our hope that one of the lessons distilled into future practice from the coronavirus pandemic will be a greater appreciation and acceptance of digitally and remotely provided medical and surgical education.

Nikolaos Patelis, MD, MSc, PhD

Department of Vascular Surgery
Athens Heart Center – Athens Medical Center
Athens, Greece

Sean J. Matheiken, MBBS, FRCS

Bedfordshire-Milton Keynes Vascular Centre
Bedford Hospital NHS Trust
Bedford, United Kingdom

REFERENCES

1. Wang C, Cheng Z, Yue X-G, McAleer M. Risk management of COVID-19 by universities in China. *J Risk Financial Manag* 2020;13:36.
2. Patelis N, Matheiken SJ, Beard JD. The challenges of developing distance learning for surgeons. *Eur J Vasc Endovasc Surg* 2015;49:237-8.
3. Patelis N, Rielo-Arias F, Bertoglio L, Matheiken SJ, Beard JD. Modular E-learning for a practical skill in vascular surgery. *Hellenic J Vasc Endovasc Surg* 2020;2:31-4.
4. Peretti M. The Gore augmented reality (AR) experience App. *Vasc Dis Manag* 2020;17:E35-7.

<https://doi.org/10.1016/j.jvs.2020.04.464>

The Vascular Surgery COVID-19 Collaborative (VASCC)



The unprecedented pandemic spread of the novel coronavirus (SARS-CoV-2; COVID-19) has severely affected the delivery of health care services in the United States and around the world. As of April 9, 2020, there are >1.5 million confirmed cases of COVID-19 worldwide and >16,000 deaths in the United States alone.^{1,2} The important public health guidelines of social distancing

to help curtail the spread of the virus and flatten the curve through mitigation and suppression have resulted in a dramatic reduction of in-person clinic visits, if not halting them completely. Furthermore, in an effort to preserve the very scarce assets of personal protective equipment as well as intensive care unit resources, such as ventilators, medications, and trained personnel, elective vascular surgical cases have decreased significantly.

The American College of Surgeons placed recommendations on the management of elective surgical procedures with the use of the Elective Surgery Acuity Scale on March 13, 2020, and specific tiers to triage vascular surgery operations.^{3,4} On March 14, 2020, the Surgeon General urged the widespread halt of hospital elective procedures because of the mounting concerns of the COVID-19 surge. Given these discussions, most vascular surgeons have reduced their practice patterns to emergency vascular surgery and very urgent cases.

The adage of “time is tissue” remains a paramount concern for the vascular surgery community. On behalf of our patients, we are concerned about the delays of these procedures but clearly understand the public health necessity of restricting the use of valuable equipment and personnel. Despite physical distancing, within several days, vascular surgeons organized through social media both locally and internationally to work and to understand and help predict what impact these unanticipated delays would be on patient outcomes. This led to the inception of the Vascular Surgery COVID-19 Collaborative (VASCC), the combined international effort to help obtain prospective data on the impact of widespread vascular surgical care delays due to a national crisis and pandemic. We currently have >300 members representing a majority of the states in the United States and >28 countries worldwide, and we are continuing to grow and amass a data registry in cooperation with the Vascular Low Frequency Disease Consortium (VLFDC). On behalf of the myriad vascular surgeons involved among multiple practice patterns, we request our vascular surgery community to contribute and assist in this international disaster that affects us all.

#VASCC

Nicolas J. Mouawad, MD, MPH, MBA, FSVS, FRCS, FACS, RPVI

Division of Vascular and Endovascular Surgery
McLaren Bay Region
Bay City, Mich

Robert F. Cuff, MD, FSVS, FACS, RPVI

Division of Vascular Surgery
Spectrum Health
Grand Rapids, Mich