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.

Similarly, the National Institute of Clinical and Healthcare Excellence guidelines recommend carotid duplex within 7 days of stroke symptoms.[2] Since the UK lockdown, seven acute NHS trusts, which include four regional hyperacute stroke centers, have performed on average (mean ± standard deviation) 12 ± 6 carotid duplex scans where 19% had greater than 50% stenosis. This is compared with the same week in 2019 where 24 ± 16 carotid duplex scans were performed with 21% having greater than 50% stenosis. This represents a 50% drop in referral for carotid scans and up to 54% of significant stenosis not identified.

Fig, *C*, demonstrates the decline in interest over time of public search terms for stroke in the health category of Google Trends in the UK. Again, the decline in referrals for carotid duplex, which is a surrogate for the number of patients presenting at rapid access clinics with transient ischemic attacks, may not be due to pandemic administration change or medical abandonment but perhaps due to public cultural avoidance of health care as a result of COVID-19 fear.

Our data poses four important questions:

1. Has COVID-19 changed the public priorities around their health choices?
2. Are physicians prophylactically treating DVT to avoid referring their patients into secondary care for duplex scanning (to avoid potential COVID-19 infection)?
3. Has the incidence of stroke and DVT actually decreased in the community through stress reduction of home working and isolation/encouraging more healthy living?
4. Are non-COVID-19-related pathologies being missed during this time of critical strain on the health care system?

During this time of significant change, it is important that public health officials continue to promote appropriate and timely uptake of primary and secondary care and not just social distancing, even more so if we face a protracted period of isolation. If they fail, we will face a parallel pandemic of post-thrombotic limb syndrome, venous ulceration, and disabling stroke, the personal and societal cost of which will be ghastly and avoidable.

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REFERENCES

1. NICE. Venous thromboembolic diseases: diagnosis, management and thrombophilia testing [clinical guideline CG144]; 2012. Available at: https://www.nice.org.uk/guidance/cg144. Accessed March 2020.
2. NICE. Stroke 2008 [clinical guideline CG68]. Available at: https://www.nice.org.uk/guidance/cg68. Accessed March 2020.

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Vascular surgery education during COVID-19 pandemic

Lockdown and social distancing measures are core components of the worldwide response to the COVID-19 pandemic. Does this affect vascular surgery (VS) education?

To investigate this issue, we designed a survey (Appendix, online only) shared online in VS interest groups and available from April 20 to April 23, 2020. It was completed by 100 respondents, 64 vascular surgeons, 24 VS residents, and 12 medical students from 14 countries, with Italy (44) and the United States (19) the most represented.

Regarding classes, 76 replied that lessons have moved online, 21 have stopped them, and 3 are still having face-to-face lectures (Fig). Thus, the majority found an alternative way to continue lecturing, showing adaptability and resilience of the faculty. Even though empathy between professors and students of face-to-face lectures has faded, e-learning has its benefits (eg, flexible schedule, easy interaction), and it should represent an opportunity to be exploited and developed even further in the future to replace existing teaching methods.

The practical training was suspended for medical students and residents in 74% and 18% of cases, respectively. Medical student education is the most affected by this pandemic; for residents, it depends on hospital arrangements. The practical training has not been replaced in 67% of cases, whereas it was replaced by online platforms with surgical videos (eg, Vascupedia, MedTube) in 17 cases, surgical theater video connection in 7, and virtual reality (4D) in 1 case. However, the practical part is crucial to our specialty, and digital tools should represent complements, not substitutes. Responses about the effectiveness of these changes compared with usual standards of teaching were split in half; 55% answered a lot and quite a lot, whereas 45% answered slightly and not all.

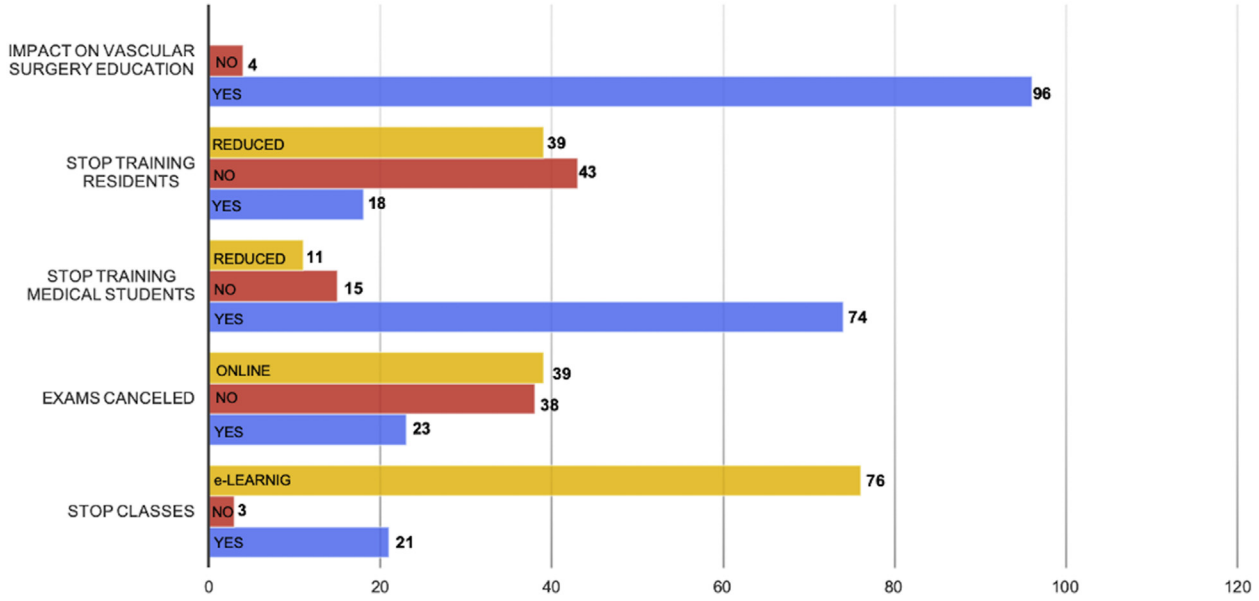

Fig. Bar chart of the responses regarding training for residents and students, exams, and classes.

The educational aspect must not be overlooked but rather enhanced in this critical period. When asked if the pandemic affected VS education, 96 answered yes, showing that its backlashes are now a widely shared problem among our specialty. Future outcomes will depend on the length of phase 1 restrictions, next phases, and the possible undesirable second wave of COVID-19. More time is necessary to assess its impact on medical education generally and VS specifically.

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Viral infection-induced thrombosis, novel coronavirus

Viral infection-induced thrombosis is a rare entity. It is known to occur with infection by several strains of viruses that are associated with disease severity. The Epstein-Barr, human immunodeficiency, and H1N1 influenza A viruses are examples that can result in thrombosis.[1-3] Consequently, with the current novel coronavirus (CoV) pandemic, knowledge of viral infection-induced thrombosis becomes even more important. The phenomenon of vascular thrombosis as described by Virchow involves changes in the vessel, blood flow, or fluid constituents.[4,5] Therefore, any factor that can alter the homeostatic mechanisms of these three components will predispose to thrombosis. Reports in the literature provide insight on changes predisposing an individual to thrombosis as a result of severe viral infections.[6,7]

The CoV is a beta coronavirus (enveloped single-stranded RNA virus), of which many symptoms of infection involve the respiratory and cardiac systems in patients requiring hospitalization.[8] There is emerging evidence to support the trends of increased morbidity and mortality from CoV infection that occurs more frequently in older individuals with comorbidities.[9,10] Furthermore, in the older population with coexisting medical illnesses, the combination of severe infection with the CoV can result in an increased tendency for intra-arterial thrombosis.

In general, the symptoms of mesenteric or limb ischemia are nonspecific in a critically ill patient; as such, there may be a delay in the diagnosis. Further time elapses can be anticipated as infectious disease protocols are necessary when performing diagnostic investigations as well as endovascular or open surgical management in a CoV-positive patient. Any significant delay in the definitive management can result in limb loss, intra-abdominal catastrophe, or even death.