

EDITORIAL

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The impact of COVID-19 pandemic in the management of a Vascular Surgery Department

The novel corona virus SARS-CoV-2 (COVID-19) was identified in Wuhan, China, in December 2019.¹ The first reported case in Europe was on the 24th January² while in Portugal it was on the 2nd of March.³ COVID-19 was declared a pandemic disease by World Health Organization on the 11th of March⁴ and national state of emergency in Portugal declared on the 18th of March.⁵

The impact of the pandemic on the Department of Angiology and Vascular Surgery at Centro Hospitalar e Universitário de São João (Porto, Portugal) started to be felt a week after the first national reported case, when the hospital administration implemented the initial contingency measures. Bedside teaching was immediately suspended, and visitors restricted to a pregnancies, palliative care and children. The following week, the Emergency Department (ED) was restructured creating two independent circuits - the respiratory and non-respiratory patients - and the operating room schedule was highly reduced, both to enable anaesthesiologists' relocation to the intensive care units (ICU) and to reduce the non-COVID-19 occupancy rates of ICU, forecasting the impact of the first wave of COVID-19 patients. Additionally, on the day the first case in Portugal was reported, the scientific event of the Department, "Porto Live 2020", was postponed.

Just a couple days before the wear of surgical mask became compulsory in every hospital facility, our Department was itself victim of the COVID-19 pandemic with a medical staff outbreak, detected on the 13th of March. Six specialists got infected, setting high risk contacts on a 2-week mandatory quarantine. The Department suffered a 55% reduction of medical staff, from a baseline of 16 specialists and 6 trainees to only 6 specialists and 4 trainees.

A contingency plan was implemented with the judicious use of the scarce medical human resources available, both protecting patients and surgeons - a preliminary attitude that we realized afterwards came in general accordance with the posteriorly issued recommendations of The Vascular Society for Great Britain and Ireland, released on 20th of March.⁶ The first problem encountered were the ED

shifts, with 24/7 coverage in one of the main reference centres nationwide, located in the north of Portugal - the epicentre of COVID-19 - and which assists 2.3 million people during night and weekends. Nevertheless, with extra-shifts and good will, a specialist and a trainee were on-call at any given hour. We receive further support from district hospitals with regional units of Angiology and Vascular Surgery that instated provisional ED shifts, avoiding more patients' referrals, preventing overflow of patients and overspread of the virus. Additionally, the ED was provided with new judicious criteria for requesting our direct observation of patients. These included: cases of acute limb ischemia, ruptured or > 7.5 cm abdominal aortic aneurysms and vascular trauma. Patients with chronic peripheral artery disease were managed with the help of general surgeons present at the ED and selectively indicated for elective revascularization. Concerning suspected cases of deep vein thrombosis, the ED received indication for Wells score calculation and D-dimers measurement leaving ultrasound examination for selected cases.

The department ward has 32 beds. Owing to the shortness of medical staff, the creation of two independent teams working every other week was not an available option. Non-critical cases were promptly discharged that same weekend. Early on, patients and healthcare professionals were transferred to the plastic surgery department, as our ward became a COVID-19 ward for non-critical patients.

The 11 operating room periods of 6-hours, normally occupied by vascular elective procedures at the central operating room were reduced to solely 3 - a reduction of \approx 73% operating room time (with sporadic extra-shifts). Fixed teams (usually a specialist and a trainee) were created and maintained as much as possible to avoid the risk of cross-over infection and the spread of potential new cases. Three contingency levels for the operating room criteria were established. Thankfully, there was no need to go further than level 2, in which was foreseen to intervene limb threatening ischemia's, abdominal aortic aneurysms > 7.5

cm and symptomatic carotid stenosis. The 4 periods of the ambulatory surgeries were all cancelled, as for the remaining of ambulatory surgery of all surgical departments.

At the outpatient clinic, non-urgent referrals were postponed, while the remaining appointments were performed via telemedicine or, when it was deemed mandatory, a presential consultation with adequate protective measures.

Although draconian, these measures were critically important in order to cautiously use technical resources, especially personal protective equipment which periodically has been in short supply, and to avoid exposing our vascular patients to the risk of COVID-19 infection. Moreover, all the Department planned activities were fulfilled besides the important human resource reduction. During this COVID-19 wave, no medical staff to patient cross-infection was reported. Furthermore, no additional medical staff got infected and although in the meanwhile an ICU admission was registered, all the infected colleagues had already recovered, having two negative swabs and with a minimum recovery time of 5 weeks.

Now that the peak of this COVID-19 wave is gone, with regular activities still not completely restarted, it is important to address delayed outpatient clinic visits, vascular imaging studies and surgical interventions so vascular patients don't suffer additional consequences from postponing, bearing in mind that a second pandemic wave is not ruled out. Vascular Surgery Departments will have to

adapt efficiently with the available resources at any given time while COVID-19 pandemic lasts in order to meet the demanding needs of vascular patients.

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