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Management of Vascular Surgical Urgencies during COVID-19 Pandemic



COVID-19 pandemic characterized for a very quick outbreak, and Italy was one of the first European countries to be heavily affected.^{1,2} This condition required a fast reorganization of hospital departments and activities, to give priority to patients affected by COVID-19 and, at the same time, give assistance to other people suffering from urgent conditions.^{3,4}

At Fondazione Policlinico A. Gemelli in Rome, the department of vascular surgery underwent a reduction of beds (from 9 to 5) and elective surgical activity (reserved for those conditions listed in our National Society guidelines), to preserve beds in intensive care units for the most severe patients affected by COVID-19.

This reorganization made it difficult to deal with the several surgical urgencies we had in the month of April 2020. In fact, our department continued to represent the hub center for part of the region Lazio and admitted patients who would have been normally treated in hospitals now completely reserved for COVID-19.

We made a comparison between the “normal period” of April 2019 and the “pandemic” period of April 2020, examining our medical records.

In April 2019, we performed 8 urgent interventions. These 8 patients were all hospitalized in our ward and could be treated immediately after diagnostic examinations, coordinating our intervention with the eventual need for an intensive care. We performed the following treatments:

- Two surgical hemostases for lower limb traumatic lesion and iatrogenic superficial femoral artery lesion, respectively,
- One open surgical treatment for acute fissuration of infrarenal abdominal aortic aneurysm,
- Two thromboembolectomies for acute lower limb ischemia,
- One repair of iatrogenic femoral pseudoaneurysm,
- One femoropopliteal bypass for acute lower limb ischemia,

- One fistula ligation associated to minor amputation for critical limb ischemia with gangrene.

On the other side, in April 2020, we had to treat 9 patients in an urgent setting, performing 10 interventions overall. They were submitted to the following:

- Three thromboembolectomies for acute lower limb ischemia,
- One endovascular aortic repair for acute fissuration of infrarenal abdominal aortic aneurysm,
- One open surgical treatment for ruptured infrarenal abdominal aortic aneurysm,
- One thromboembolectomy associated to femoroposterior tibial artery bypass for acute lower limb ischemia,
- One revascularization of the superficial femoral artery after traumatic injury,
- One repair of iatrogenic femoral pseudoaneurysm,
- One thoracic endovascular aortic repair for mycotic ruptured thoracic aortic aneurysm,
- One thigh amputation for lower limb gangrene with sepsis.

Not all patients were hospitalized in our vascular surgery department. One patient was admitted in the cardiology department; 1 stayed in the general surgery department (for a concomitant colic disease); the patient submitted to thoracic endovascular aortic repair for mycotic aortic aneurysm had a very long hospitalization in the intensive care unit for serious non-COVID pneumonia. Two patients were hospitalized in the COVID-19 department: one patient was admitted with fever due to the gangrene (our protocol requires that all patients with fever have to stay in COVID-19 areas where they are tested for this disease), and the second case concerned a patient coming from a cruise ship in quarantine near Rome. These last 2 patients were transferred to the medicine department after resulting negative to COVID-19.

All patients treated during the pandemic underwent a serologic test with immediate result and a throat and nose swab. The swab requires about 8 hours to be analyzed, and consequently, the management of urgent conditions was more complex than the previous year. Waiting for the outcome of the swabs, we had to operate with all the cautions expected for positive patients, that is, the use of personal protective equipment (PPE) and a dedicated path to the operative room. Consequently, we experienced less comfortable working conditions and we observed a longer time to treatment. In particular, we registered an average delay of 5 hours longer than the

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previous year. These aspects reflected on the postoperative care, as well, especially for the 2 patients hospitalized in the COVID-19 departments, which are located in different areas of the hospital and obviously require the use of PPE, dedicated ultrasound machine, and disinfection protocols.

In comparison with April 2019, we observed more severe lower limb ischemia events; this may be due to the reduction of clinical examinations performed by general practitioners and to the fear of patients to be visited in emergency departments.

Moreover, in the following month of May 2020, we treated more severe and complex cases of peripheral arterial disease and we observed more serious gangrenes and trophic ulcers than the previous year. These patients complained about the difficulty of getting outpatient appointments for vascular examinations, advanced medications, and imaging examinations (such as duplex scans and computed tomography scans).

Favorably, the results of our treatment were not affected by this new management and patients were discharged in good conditions.

F Montanari

G Tinelli

Y Tshomba

Unit of Vascular Surgery

Fondazione Policlinico Universitario Agostino Gemelli IRCCS

Rome, Italy

E-mail: francesco3.montanari@gmail.com

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