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.

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My Thoughts / My Surgical Practice

COVID-19 and surgical training in Italy: Residents and young consultants perspectives from the battlefield

COVID-19 in Italy and how it is challenging the healthcare system

In the late December 2019 the first cases of SARS-CoV-2-related pneumonia were recorded in Wuhan (China),[1] from where the disease spread rapidly worldwide, being declared a pandemic by World Health Organization on March 11. To date (04/30/2020) there are 3.267.867 cases in the World, with 233.560 deaths (7,15%).[2]

Italy is the most affected country in Europe: the first domestic case date February 20 in Codogno (Lombardy) and since that day the number of cases has grown exponentially forcing the Italian Government to issue a series of decrees to try to contain the contagion, up to the lock-down of the entire country on March 11. To date (04/30/2020) in Italy there are 205.463 cases and 27.967 deaths (13,61%).[2] These numbers put the health system under extreme pressure, especially in Lombardy, the most affected region: both intensive care and ordinary beds were filled rapidly with COVID-19 patients, consequently the health system was completely reorganized with wards converted to COVID-19 wards. The surgical departments have been heavily involved in this reorganization leading to the suspension of the surgical activity with the exception of emergencies and oncological elective activity.[3] Similar measures have been taken in several countries and in some cases are particularly restrictive (e.g in Maryland), so scientific societies are issuing guidelines, often disease-specific, in order to help surgeons to better plan surgical activity.[4] Also the admission of patients to the surgical department has been completely revised: patients receive a telephone triage before admission in order to look for any suspicious symptoms for COVID-19 (fever or respiratory symptoms), moreover, when admitted, they are subjected to a nasopharyngeal swab and chest x-ray, then are all hospitalized in a single room and only one visitor is allowed with the obligation to wear a mask and gloves.[3] The surgical staff, due to contact with patients and other healthcare workers, is an important vehicle of contagion within the hospital, so the personnel is subjected to daily measurement of body temperature at the entrance and if higher than 99,5 °F or respiratory symptoms are present, the healthcare professional is placed in quarantine and subjected to a swab for SARS-CoV-2. Similar organization has been undertaken in several other countries in order to minimize the risk of contagion in hospital facilities.[5] In addition to the lack of beds, another issue is the shortage of healthcare staff due to the important percentage of healthcare workers who became infected. This led to try different solutions:

- Medical students in the last years of the Medicine course, on a voluntary basis, were employed as 911-phone operator;
- Medical graduates pending their medical license examination have their medical license approved ex officio by Italian Government, allowing them to be employed in hospital wards;
- Residents in the last years of their residency program (4th and 5th year) have been hired in hospitals with significant staff shortages;
- Retired doctors, again on a voluntary basis, have been called back into service.

These measures have made it possible to recruit vital staff to deal with the emergency, but what will the consequences be, especially for med students and residents?

How COVID-19 pandemic is challenging medical education and surgical training

This issue is crucial for the future of the health service and had already been exposed by Bradford during the 2003 SARS epidemic in Hong Kong.[6]

Medical students are suffering an interruption of their training. The government's decrees enacted in order to contain the contagion prohibit meeting of more than 2 people, so seminars and clinical rotations have been suspended in order to reduce the risk of infection for students and patients. This leads to a reduced chance for students to examine clinical cases, thus negatively affecting their clinical training. Even from the point of view of scientific work there are plenty of problems, as the emergency has resulted in the suspension of most elective activities, including clinical trials: as a result, the students in their last year are experiencing difficulties in finishing their degree thesis.

Even for residents, training is severely challenged and there are several issue to deal with:

- Weekly lessons are suspended, as well as seminars, workshops, practical courses (e.g. suture courses, laparoscopic simulators, cadaver lab) and national and international congresses;

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- Normally in this period, between winter and summer holidays, most of the surgical intervention are performed. The interruption of the elective activity heavily affects resident's training, as the elective surgery are those that are most frequently conducted by residents as first operator. This can lead to failure to achieve the minimum number of interventions required to achieve surgical certification;
- Many residents have been recruited to non-surgical wards to assist in the management of COVID patients, thus being excluded from surgical activity.

In addition to the problems related to training, the effect of the pandemic on health of trainees and other healthcare workers must not be forgotten. From this point of view, the psychological burden that operators have to face is significant: every day, despite our efforts, hundreds of patients die from COVID-19 in Italy and this determines a sense of helplessness and frustration in addition to the fear of being infected and bring the disease into our families. This can lead, in the short and long term, to psychiatric diseases (anxiety disorder, post-traumatic stress disorder, depression)[7] and it is essential that healthcare workers are addressed by providing professional support. Another important aspect is the private life of trainees healthcare workers: those who are parents have a serious trouble given by the closure of schools ordered by the Government to contain the contagion, as entrusting the children to grandparents care could constitute an additional vehicle of infection putting older people at serious risk.

This situation also offers opportunities: residents employed in COVID departments can acquire management skills for the critically ill,[8] which will be extremely valuable in their future career, moreover, more free time given by reduced workload in the wards allows trainees to have more time to study and update on scientific literature.

What possible solutions?

So what solutions to issues posed by the pandemic?

1. Safety first: safety must always be at first, so it is essential to reduce the presence of non-essential personnel and provide training on dressing and undressing personal protective equipment as suggested by Daodu et al.[8] In our surgical ward only the trainee on call with surgeons on duty are present, in order to reduce as much as possible the percentage of staff exposed to the infectious risk.
2. Continuous education: strengthen the use of technologies, e.g. providing online lectures recorded or in videoconferencing, weekly journal clubs in which to discuss literature novelties remotely and surgical simulator training sessions, if safe access to the simulator can be guaranteed. Chick et al. in their work indicate several possible feasible solutions.[9]
3. Encourage trainees to use the increased free time available to update on literature and to increase scientific work and production. It is essential to maintain constant daily support from tutors.
4. Finally, it is essential to provide psychological support for all healthcare workers involved in the emergency. At Sacco Hospital, at the forefront of emergency management from early days, psychological support was immediately activated and accessible to all healthcare professionals.

Conclusion

The pandemic has significantly affected the life of us all, leading to a significant reduction in our exposure to all training activities. We will only see in the future what consequences will be on our training and how much these have been mitigated by solutions suggested. Now, however, it is time to hold on despite the difficulties: we have a duty to continue offering care to all to the best of our ability and, at the same time, to continue training to ensure the future of the health system.

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