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Commentary: Lights and shadows of pediatric cardiac surgery in China during the coronavirus disease 2019 pandemic

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CENTRAL MESSAGE

Pediatric cardiac surgery during the COVID-19 pandemic witnessed increased case complexity without affecting outcomes. Routine patient and family testing is mandatory to establish sustainability of cardiac programs.

Shi and colleagues[1] describe the influence of early coronavirus disease 2019 (COVID-19) pandemic on pediatric cardiac surgery activity in China. The authors write on behalf of a consortium, gathering 13 of the largest pediatric cardiac units in the country, including the Children's Hospital in Wuhan, where the global pandemic originated.[2] The report presents useful information, given the amount and quality of surgical activity reported during the lockdown period in China (January 23-April 8, 2020), and some controversial aspects. To assess the influence of the pandemic, the authors compare number and type of procedures during a similar time interval during the 2 preceding years. Quite expectedly, a 75% decrease in activity was observed, with a shift, although less impressive than expected, toward emergency procedures and elective interventions in symptomatic patients. These changes did not result in increased hospital mortality, attesting to the standard of care reached in Chinese cardiac units. The authors correlate these findings with a decrease in migration of patients and families. An innovative strategy to provide for patient follow-up despite the limited mobility of patients is also proposed. In fact, implementation of Internet and/or telephone follow-up in up to one-fourth of patients is shown not to result in increased late mortality or hospital readmission. Because a trend toward decrease in COVID-19 cases has not been witnessed yet in many countries worldwide and a second wave is humbling Europe again, safety and applicability of telemedicine to pediatric cardiac surgical patients is a precious piece of information. The report by Shi and colleagues[1] presents similarities when compared with the almost-contemporary experience with pediatric cardiac surgery in Italy. But there are some striking differences.[3] Amongst the Western countries, Italy was the first and hardest hit by the early phase of the COVID-19 pandemic, both in terms of number of cases

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and casualties. The surgical activity in 14 pediatric cardiac units was recently documented during the peak of the first wave, which resulted in a complete national lockdown between March 9 and May 4, 2020. Thus, during a similar 2-month period, in a comparable number of units performing half the case volume (263 vs 569 cases) due to demographic differences with China, a significant decrease in activity compared with 2019 was witnessed in Italy, albeit less pronounced (52% vs 75%). Similar to China, there was a shift toward urgent/emergency cases, although more dramatic (15% in Italy vs 6% in China) without resulting in increased hospital mortality (0.5%). Furthermore, all elective cases were canceled from the units in northern Italy, where the pandemic raged more fiercely, but also from most of the units in southern Italy. This was driven not only by necessity of rational human and material resource allocation—as recommended for crisis management in North American units[4]—but also by the awareness that a balance must be found between prognosis for simple and moderate complexity congenital heart disease and the risk of contagion for patients, families, and health care personnel. And here is where the shadows concentrate on the Chinese experience. Although no patient presented with COVID-19 infection before surgery in Italy, 3 developed asymptomatic infection postoperatively. Furthermore, 41 nurses and physicians were infected, with 2 requiring noninvasive ventilator support.[3] All survived to discharge. This contagion was favored by absence of routine nucleic acid testing. Unfortunately, the study from the Chinese experience does not report data relative to patient, health care personnel, or family infections. Given the lack of any laboratory evidence, the practice of subjecting surgical candidates and families to a 2-week quarantine before operation, as proposed by the authors, should not be endorsed. It will not isolate asymptomatic individuals who may spread the disease. Rather, submitting all children and families to testing for severe acute respiratory syndrome coronavirus 2, the virus that causes COVID-19, before surgery must become the standard of care, as well as rescheduling, whenever patient prognosis and medical therapy allow.[4]

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