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Letter to the Editor

Editorial comment to the letter to editor “Cesarean section in COVID-19 patient with mitral stenosis: Fast-track spinal anaesthesia is an option.” Non-standard anaesthetic techniques during covid-19 pandemic: is it worth the risk?



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Spinal anaesthesia
 COVID-19
 Mitral stenosis
 Recommendations

The authors of the letter to editor “Cesarean section in COVID-19 patient with mitral stenosis: Fast-track spinal anaesthesia is an option” presented a case of a pregnant woman with severe mitral stenosis and asymptomatic Covid-19 infection, presented for an elective c-section under low-dose spinal anaesthesia, to prevent intraoperative haemodynamic changes and to bypass the recovery room to decrease the risk of infectivity [1].

Spinal anaesthesia is a relative contraindication in patients with fixed cardiac output, due to refractory hypotension [2]. Traditionally, these patients were offered a general anaesthesia, but recently graded epidural anaesthesia with close postoperative monitoring, has become popular as a safe choice. Parturients with significant cardiac disease are considered high-risk obstetrical patients who should deliver in an institution with cardiac - and intensive care facilities. However, recommendations for anaesthetic management of these patients are based on reported clinical experience and pathophysiological concepts [3–5].

Pregnancy is associated with central hemodynamic changes that peak at around 32 weeks' gestation and that undergo abrupt variations during delivery. This is the reason why pregnancy might be poorly tolerated in women with cardiac disease and the immediate postpartum period is considered the period with the highest risk for maternal cardiac complications [6,8].

Mitral stenosis of rheumatic aetiology is the most common valvular heart disease associated with pregnancy and increases the risk of pulmonary oedema and right ventricular failure. Vaginal delivery with a carefully titrated epidural for labour analgesia is usually preferred in case of mild or asymptomatic mitral stenosis, unless they develop obstetric complications or there is deterioration in the patient condition [7–9].

Covid-19 is a new challenge and especially when combined with pregnancy and heart disease. It can result in cardiac injury by multiple mechanisms and pregnant women infected with Covid-19 are at greater risk of hypotension, hypoxemia and heart failure. Finally,

the data on the outcome of these patients is still very limited [10].

The ideal anaesthetic technique should be based on patient comorbidities, maternal preferences and should be multidisciplinary in high-risk patients. For c-section, the safety profile clearly favours neuraxial regional anaesthesia (NA RA) over general anaesthesia. When choosing between which neuraxial regional anaesthesia technique, one should consider the emergency of c-section, the reliability of the technique and the speed of onset of sympathetic blockade in cardiac parturients should favour incremental dosing techniques, over standard techniques with fixed doses such as single-shot spinal anaesthesia, an “all or nothing” technique, to avoid rapid onset of sympathetic block and refractory hypotension. Therefore, a carefully titrated graded epidural anaesthesia, or a combined spinal-epidural approach injecting only a small dose of local anaesthetic and followed by extension of the block through the epidural catheter or even a continuous spinal anaesthesia are safer alternatives to achieve an effective anaesthesia and avoid rapid haemodynamic changes [2,3,6].

The Covid-19 pandemic has been a challenge both for patients and for health care practitioners and we can only be empathetic with the enormous difficulties each country is going through. Nevertheless, patient safety should not be overlooked and the recommendations published by the American Society of Regional Anaesthesia and Pain Medicine and the European Society of Regional Anaesthesia and Pain Therapy emphasize a cautious approach to patients with suspected or confirmed Covid-19 disease. In these recommendations, it is stated that routine indications and contraindications for neuraxial anaesthesia apply when managing obstetrical and non-obstetrical patients with suspected or confirmed Covid-19. Nevertheless, it is advisable to rule out thrombocytopenia, to be prepared to manage hypotension following neuraxial procedures as for any other patient and that caution should be exercised when attempting to reduce the dose of the spinal anaesthetic agent, as conversion to general anaesthesia is the least desirable outcome [11].

In conclusion, when it is mentioned that neuraxial anaesthesia and peripheral nerve blocks are the first choice (whenever possible) for anaesthetic management of patients with suspected COVID-19 infection, it is our interpretation that this does not mean obstetric patients with severe mitral stenosis and covid-19 infection are candidates for spinal anaesthesia. It is our belief that single shot spinal anaesthesia should not be considered as a safe option in this group of patients, especially for elective caesarean

section. Instead, safe neuraxial regional anaesthesia blockade in such patients should favour incremental dosing techniques as mentioned above, alongside a tight haemodynamic monitoring, preventive hypotension management and close postoperative surveillance. Nonetheless, individual experiences are vital in formulating treatment plans in the light of an epidemic and the authors should be congratulated for the successful outcome of their patient and for sharing their choices.

Declaration of competing interest

Conflict of The authors of this letter to the editor do not have any potential conflict of interest relevant to the addressed subject.

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