

Starvation in the midst of plenty... of caesarean deliveries

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The capacity to perform caesarean delivery (CD) at facilities in low- and middle-income countries including South Africa is now a well-documented global public health concern.¹ Where public sector district-level facilities struggle to provide reliable access to safe CD, patients are referred (or self-referred) to busy urban and peri-urban regional and central hospitals. Here, the tension of balancing heavy elective caesarean and emergency caesarean caseloads is acutely felt. As the caesarean rate in South Africa progressively rises,² there is the growing need for elective repeat CD that compounds the service pressure.

In the busier obstetric units, the limitation of finite physical operating room space and staffing results in a trauma unit-type triage mentality, where category one and two caesarean sections must regularly be prioritised over elective CD to prevent death and disability. Consequently, elective surgical patients obliged to use these overburdened facilities experience protracted and repeated fasting periods which are so compellingly documented in the accompanying study by Morgan et al. in this issue.³ Their study elegantly demonstrates the harm being done to some women in terms of the clinically relevant metabolic outcomes of hypoglycaemia and ketosis. "Accelerated starvation" in healthy pregnant women was reported some decades ago.⁴ Also, the obstetric literature includes many case reports of starvation keto-acidosis in the third trimester of pregnancy.⁵ These case reports emphasise the deleterious consequences of these profound maternal metabolic derangements on the condition of the fetuses.

While patients at the study hospital and similarly overtaxed facilities are probably advised of the unpredictable timing of their "scheduled" CDs and the potential for a long wait, it is unlikely that the informed consent process includes a discussion of the risk of harm incurred by extended preoperative fasting. Apart from the metabolic consequences, these harms may include dehydration, a higher incidence of spinal-induced hypotension, delayed recovery and reduced patient satisfaction.⁶

Dr Morgan and her co-authors tabulate several practical and workable proposals to limit fasting times, given the prevailing CD caseload. These proposals rely largely on effective, ongoing communication between ward staff and theatre personnel, as well as the education of healthcare workers and pregnant patients regarding evidence-based fasting guidelines. Their suggestions are in keeping with the caesarean-specific Enhanced Recovery After Surgery (ERAS) Society guidelines⁷ and

the Society for Obstetric Anesthesia and Perinatology (SOAP) consensus recommendations⁸ which allow the intake of a light meal up to six hours before CD and also encourage the drinking of clear fluids until two hours before CD. Overall, there is weak evidence of improved outcomes following nonparticulate liquid carbohydrate loading two hours before non-obstetric surgery, and no trials have been performed in pregnant diabetic or nondiabetic women to inform practice. However, both guidelines state that oral carbohydrate fluids may be offered to nondiabetic pregnant women two hours before CD. When CD-specific research is conducted on the impact of preoperative carbohydrate fluids, it may need to broaden its outcome measures beyond duration of ileus and length of stay, to include maternal metabolic parameters, fetal-neonatal effects, and maternal anxiety and satisfaction.

The rollout of an educational pamphlet regarding preoperative fasting, written in plain language and given to patients on the evening before their elective CDs, has significantly reduced median fasting times for clear fluids in an American study.⁹ In that observational quality improvement impact study, the median fasting time for fluids declined from 10 hours (IQR 8.9–12) to 3.5 hours (IQR 2.5–10) after the introduction of the pamphlet ($p < 0.001$). For various reasons, this study's findings may not be generalisable to the South African situation, and another means of patient education may be more appropriate.

The reality of sizeable elective caseloads and the unpredictability of the emergency surgical component require obstetric services to adopt protocols that mitigate the impact of extended preoperative fasting times for elective CD patients, while ensuring maternal safety from aspiration of gastric contents and optimal use of available theatre time. However, the true message of the study by Morgan et al. is that many regional and central obstetric hospitals are simply too busy to consistently offer safe, quality perioperative care. Extended fasting times are plausibly signals of more after-hours elective surgery, more rushed surgery, less time spent by patients in busy recovery areas, less intensive postoperative monitoring and, consequently, the heightened risk of poorer maternal outcomes and delayed recoveries. It is our duty as anaesthetists to be more than perioperative obstetric physicians; we need to gather the data that allow us to be perioperative advocates for suitably resourced obstetric facilities.

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