

Opinion



Is the 14% cesarean section rate in Gulu Regional Referral Hospital justifiable?

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Is the 14% cesarean section rate in Gulu Regional Referral Hospital justifiable?

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Abstract

Worldwide, cesarean section (CS) rates have increased tremendously in recent years, especially among high-income countries, raising concerns about the over-utilization of CS without added benefits, and in the sub-Saharan African region, the rate is at its lowest (7.3%). In Uganda, the CS rate stands at 6% and is seen to be higher (11%) among first-order births indicating a high incidence of primary CS. Despite the low rate of CS in Uganda, there are massive gaps in the provision of obstetric procedure with some women receiving unnecessary surgeries, and the facility-based CS rate is projected to increase to 32% by end of 2021. Notwithstanding the increasing facility rates of CS, Gulu Regional Referral Hospital (GRRH) rate has remained low in

the years 2017-2019, with lower levels maternal mortality ratio and fresh stillbirths' rates compared to the national average. Prolonged labor is one of the commonest indications for primary CS accounting for more than 50% among nulliparous women and this is linked to progress of labor usually measured using cervical dilatation. World Health Organization (WHO) recommended a change in cervical dilatation from 4cm to 5cm as a threshold for the active phase of the first stage of labor, as a way to reduce unnecessary labor intervention including the CS. Lack of standard reporting tools such as the WHO Robson's ten group classification in Uganda make comparisons of CS rate between/within facility/facilities worrisomely difficult.

Opinion

Meanwhile, cesarean section (CS) can reduce maternal and neonatal mortality and morbidity, it should only be done when medically necessary. A facility or population-level CS rate below 5% suggests lack of access to emergency obstetric care services, a 10-15% rate is generally accepted as optimal [1]. Worldwide, CS rates have increased tremendously in recent years, especially among high-income countries, raising concerns about over-utilization of CS without added benefits [2], meanwhile, in the sub-Saharan African region, the rate is at its lowest (7.3%) [3]. In Uganda, the cesarean section rates stand at 6% and are seen to be higher 11% among first-order births indicating a high incidence of primary CS [4]. Despite the low rate of CS in Uganda, there are massive gaps in the provision of obstetric surgical care with some women receiving unnecessary surgeries, and the facility-based CS rate is projected to increase by 36% in 2021 [5].

Cesarean section rate in Gulu Regional Referral Hospital: in the financial year 2018/2019, CS rates from Gulu Regional Referral Hospital (GRRH), one of the Regional Referral Hospitals (RRHs) located in the Northern part of Uganda had been the lowest in the country at 14%, a slight increase from 12% in

the 2017/2018 government financial year [5] compared to national average of 32% for RRHs. This rate is less than 1/3 of the rates in Mbarara and Mbale Regional Referral Hospitals, located in Western and Eastern parts of the country respectively [6]. The low CS rates cannot be justified by the regional location of Gulu Regional Referral Hospital as rates in Lira Regional Referral Hospital, located in the same region as GRRH is almost 3 times (40%) [6]. In the 2019 annual conference for the Association of Obstetricians and Gynecologists of Uganda (AOGU), many obstetricians argued that the low rate in GRRH was because most of the patients could have been referred to St Mary's Hospital Lacor, a private non-for-profit well-equipped faith-based hospital located within Gulu City, about 6km west of GRRH. It was even surprising that the CS rate in Lacor had reduced from 27% in 2017/2018 to 26% in 2018/2019. The rate of fresh stillbirths (FSBs), an important marker for the effectiveness of CS is lowest in GRRH (5/1000 deliveries) compared to other RRHs with high CS rates except for Mbarara (4/1000 deliveries) [6]. Gulu Regional Referral Hospital (GRRH) facility maternal mortality ratio 122/100000 live births compared to the RRHs average 363/100000 live births. This point toward a justifiable rate given the fact that there was an acceptable obstetrics outcome in GRRH compared to other RRHs with higher CS rates.

In the areas with high CS rates, some indications are not justifiable. In a Chinese prospective cohort study involving 523 women, 58.1% underwent CS of which, 34.9% of women undergoing the procedure did not have any indications listed in the clinical guidelines nor based on maternal request and this was regressed and found to be due to doctors' influence [7]. These doctors indicated CS may be trending in Ugandan since the commercialization of CS in some public hospitals and most private facilities are on the increase. A Tanzanian cesarean section audit to improve quality study revealed that the proportion of unjustified CS before the introduction of the audit was as high as 34 and 75%, according to the respective judgments of the local and external audit panel and this proportion

reduced to 23% ($p = 0.29$) and 52% ($p = 0.01$) according to of the local and external audit panel respectively after the introduction of the CS audit [8]. This is an indication that, amidst the low c/s rates in Africa, Uganda inclusive, quite a significant number is unjustified hence increasing morbidity without any benefits.

There have been difficulties in delineating the norms and limits of labor duration because labor does not readily lend itself to measurements. Prospective definition of labor onset and progression depends entirely on the cervical changes that are examined and recorded episodically [9,10] and this is left at the discretion of skilled birth attendants to decide if the woman is in labor or not [10]. Although labor is a natural process, it can suffer complications that interrupt the natural process that might require intervention [10]. In a meta-analysis of 28 studies, the onset of labor was not defined in 185408 women [11] a sign that it's something very difficult to pinpoint. Labor duration measurements and their subdivision into active and latent phase stem from research published by Friedman beginning in the 1950s. In these studies, a women's active phase began with a retrospectively identifiable acceleration of cervical dilatation and ended at complete dilatation of 10cm giving a hyperbolic curve [12-14]. Although, a metanalysis by Neal *et al.* in 2010 [9] showed that, spontaneously laboring, low-risk, nulliparous women admitted for labor under criteria broadly associated with active phase onset defined as cervical dilatation of 3-5 cm with regular uterine contraction, the average active labor is longer than what Friedman first suggested. In this metanalysis, it was found that the rates of cervical dilation during active labor from 4 cm dilatation forward are much slower than those reported by Friedman. In Friedman's study, it was found that the lowest acceptable cervical dilatation between 4cm and 9cm was 1.2cm/hr yet only half of the nulliparous women dilate at ≥ 1.2 cm/hr during active labor and the lowest acceptable rate approximated 0.6 cm/hr [9]. This signifies that labor is slower than expected even if it's normally progressing. Friedman curve is the basis on which

the World Health Organization Partograph has been constructed.

Clinical practice guidelines implement the best evidence into practice and represent an appropriate means for reducing CS rates. The development of guidelines for obstetric care has increased in recent years in developed countries [15]. This is not the case with Uganda where decisions to perform cesarean sections are normally guided by expert opinion and progress of labor as guided by the World Health Organization's (WHO) partograph. The partograph has a threshold for active phase at 4cm cervical dilatation with the alert line placed at a dilatation of 1cm/hour which is unrealistically faster for many laboring women with normal progress. In 2018, WHO recommended a change in cervical dilatation from 4cm to 5cm as a threshold for the active phase of the first stage of labor as an intervention to reduce unnecessary labor intervention including the CS [16] and this has recently been implemented in Uganda. The American College of Obstetricians and Gynecologists (ACOG) and the Society of Maternal-Fetal Medicine (SMFM) recommended a higher threshold of 6m as an intervention to reduce unnecessary CS [17].

Progress of labor as measured using cervical dilatation is closely related to the diagnosis of labor dystocia, a slow or abnormal progression of labor [9]. Prolonged labor is one of the commonest indications for primary CS accounting for more than 50% among nulliparous women in some studies [9,18] and most of this is because of slow progress before 6cm with no adverse maternal or perinatal outcome. Once a woman has had a CS in Africa, the possibilities of having a vaginal delivery become quite slim. This is majorly due to health care workers' valid concerns about their inability to safely manage vaginal birth after CS (VBACS) as required due to inadequate staff numbers and unavailability of cardiotocography (CTG). It is therefore paramount to prevent the primary CS to avoid this cascade of events. Routine use of evidence-based delivery guidelines and CS audit board will reduce the rates of Maternal and

Perinatal mortality and morbidity, by reducing rates of primary CS and ensuring the quality of obstetric care. For us to effectively understand the quality of CS in GRRH, and compare it with other RRHs in Uganda it would be important that WHO Robson Ten Group Classification Systems [19] be used. This is an important tool to enable us to understand the different obstetric groupings and to monitor changes over time at one facility as well as comparing practices between facilities [20].

Conclusion

There has been an increasing rate of CS in Uganda with a facility rate expected to rise to 36% by end of this year 2021. Some of the increase may not be obstetrically justifiable and could be due to the commercialization of obstetrics practice in some parts of the country. Reporting rates as a percentage may not bring out the full justification of the procedure. Ministry of Health should introduce reporting CS using the Robson Ten Group Classification system to help in comparing the intra and intergroup CS rates. Introduction of CS audits alongside the routine maternal and perinatal deaths audit as part of the near misses shall help keep the check for doctors' influence CS in Uganda.

Competing interests

The authors declare no competing interests.

Authors' contributions

All the authors have read and agreed to the final manuscript.

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