

Anaesthetic Management of Patients Undergoing Concomitant Tubal Ligation During Elective Caesarean Births



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– a 12-year Review From a Tertiary Centre

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Introduction

- Tubal ligation (TL) during caesarean birth has been reported to be an important predictor for failed neuraxial anaesthesia (needing a second anaesthetic).¹
- Furthermore, a 2024 retrospective cohort study by Dr J. Ansari *et al* found a surprisingly high spinal anaesthetic failure rate (15%) for those undergoing TL following labour.²
- We compared the anaesthetic outcomes of women undergoing elective caesarean birth with concomitant tubal ligation with the proposed Royal College of Anaesthetists' standard that stipulate 95% of category 4 caesarean births should be conducted with a regional anaesthetic (RA), with < 1% requiring conversion to general anaesthesia (GA).³

Aims

- Our primary aim was to review the anaesthetic technique utilised for patients undergoing concomitant TL at elective caesarean birth.
- Our secondary aims were to analyse the RA to GA conversion rate and the systemic analgesia supplementation rate in these women.

Methodology

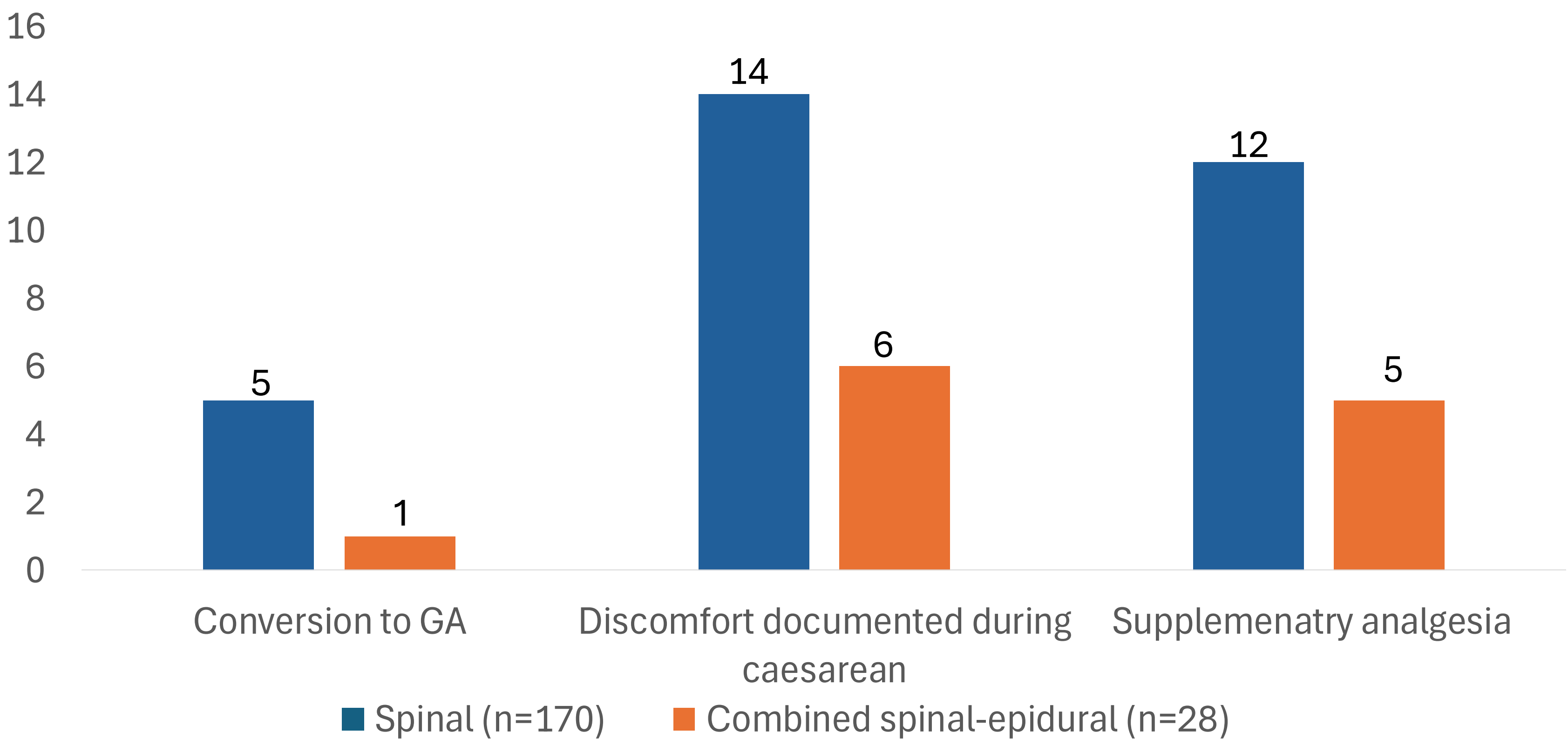
- Electronic patient records of women who underwent concomitant TL between 1 April 2012 to 31 March 2024 during elective caesarean birth were reviewed.

Study population's patient, surgical and anaesthetic factors

	Spinal (n=170)	Combined spinal-epidural (n=28)	Total (n=198)	P-value
Age (years)	34.1 (4.6)	35.3 (5.3)		0.15
BMI (kg.m-2)	30.5 (7.5)	31.7 (9.5)		0.45
No. of previous caesarean births	2 [1,2]	2 [1,3]		0.079
Surgical duration (min)	58.0 [48.8, 68.3]	78.0 [59.8, 104.8]		<0.0001
Dose of intrathecal bupivacaine 0.5% w/v (mL)	2.7 [2.7, 2.8]	2.7 [2.7, 3.0]		0.97
Blood loss (mL)	500 [400,700]	700 [400,1200]		0.019
Conversion to GA n (%)	5 (2.9)	1 (3.8)	6	>0.999
Discomfort documented during caesarean n (%)	14 (8.2)	6 (21.5)	20	0.027
Supplementary analgesia n (%)	12 (7.1)	5 (17.9)	17	0.045

Mean (SD), median [IQR] and count (%) were analysed using Student t-, Mann-Whitney U- and difference in proportions statistics.

Anaesthetic Outcomes from RA Group



Results

- 203 women underwent concomitant TL.
- 198 (97.5%) were conducted under neuraxial anaesthesia (170 single-shot spinal anaesthesia [SA], 28 combined spinal-epidural [CSE]).
- Five (2.5%) underwent a primary GA.
- Five women (2.9%) in the SA cohort needed conversion to GA compared to one (3.8%) in the CSE cohort.
- Intra-operative pain contributed to three (50%) GA conversions, whilst three (50%) were for surgical reasons (haemorrhage and bowel injury). 1.5% of patients undergoing RA required conversion to GA due to intra-operative pain.
- Supplementary analgesia was recorded in 17 (8.6%) cases though 20 (10.1%) women reported discomfort intraoperatively.
- Patients who received a CSE had a greater number of previous caesarean births, longer surgical duration, more blood loss and more discomfort requiring analgesia.

Conclusion

Concomitant TL during caesarean birth was performed successfully in 97% of women with RA, in line with RCOA recommendations, however the RA to GA conversion rate was higher. Discomfort during caesarean and need for supplementary analgesia was documented in nearly 10% of cases. Increase in surgical complexity and surgical time may contribute to these findings.

References

1. Jin SY, Munro A, Aidemouni M *et al*. The Incidence and Predictors of Failed Spinal Anesthesia After Intrathecal Injection of Local Anesthetic for Cesarean Delivery: A Single-Center, 9-Year Retrospective Review. *Anesth Analg*. 2024;**138**: 430-437.

2. J. Ansari, M. Sheikh *et al*. A Retrospective Cohort Study of the Anaesthetic Management of Postpartum Tubal Ligation. *Int J Obstet Anaesth*. 2024; 58: 103974

3. Royal College of Anaesthetists. Raising the Standards: RCOA Quality Improvement Compendium. *Obstetric Practice*. Available at: https://www.rcoa.ac.uk/sites/default/files/documents/2024-09/21075%20RCOA%20Audit%20Recipe%20Book_16%20Section%20B.7_p241-268_Updated.pdf. Accessed 14th January 2025.