



THORACIC SPINAL ANAESTHESIA FOR OPEN PALLIATIVE COLORECTAL SURGERY—A CASE SERIES

deGraft-Johnson PKG¹, Djaobletey R¹, Chin KJ²
¹University of Ghana Medical School & Korle Bu Teaching Hospital, Ghana
²University of Toronto & Toronto Western Hospital, Canada

Introduction



- Frailty is associated with poor outcomes in elective and emergency surgical patients.¹ General anaesthesia with endotracheal intubation is the conventional approach to open colorectal surgery.
- In frail patients, this increases the risk of requiring postoperative high-dependency or intensive care with ventilatory support.
- In resource-limited environments such as Ghana, these facilities are scarce and expensive, necessitating the need for alternative anaesthetic techniques for high-risk patients requiring colorectal surgery.

We present the successful management of five cases of advanced colorectal cancers who had diversion colostomies under thoracic spinal anaesthesia without the need for postoperative intensive care support.

Methodology

- Informed consent was obtained from all patients.
- USG-guided TSA was done in either the sitting or lateral decubitus position at the T9/T10 or T10/T11 interspace.
- Standard intraoperative monitoring done.
- Sedation with a target-controlled infusion of 1% propofol (2–3ug/ml effect site concentration) to achieve a Richmond Agitation Sedation Scale (RASS) of -1.

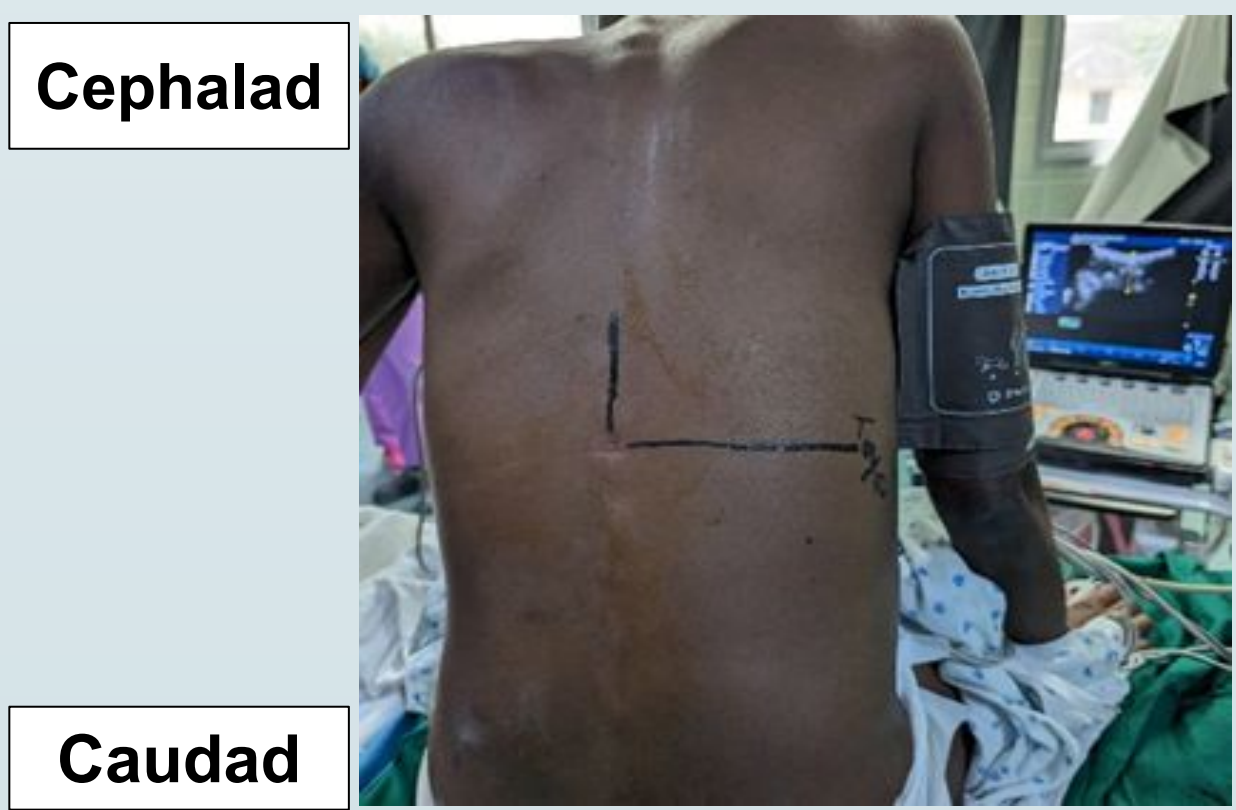


Fig 1. Ultrasound-guided location of correct thoracic interspace



Fig 2. Thoracic spinal being administered

Results

Age/Sex	Clinical Frailty score	Diagnosis	Thoracic Intervertebral Space Used	Medications Used	Extent of block	Surgical procedure /Duration (mins)	Time to first rescue analgesia (mins)	Time spent in PACU (mins)
59/F	7	Locally advanced anorectal carcinoma	T10-T11	9mg (0.5% hyperbaric bupivacaine) + 20mcg fentanyl	T3-L4 Bilaterally	Diversion Colostomy/ 89	120	100
46/F	7	Ca cervix with recotovaginal, recotovesical fistula, stage 4 CKD & severe anaemia	T10-T11	9mg (0.5% hyperbaric bupivacaine) + 20mcg fentanyl +2mg dexamethasone	T3-L3 bilaterally	Diversion colostomy/ 62	177	120
48/F	7	Recurrent rectal carcinoma with pulmonary metastases	T10-T11	9mg (0.5% hyperbaric bupivacaine) + 25mcg fentanyl +2mg dexamethasone	T2-L2 bilaterally	Adhesiolysis & diversion colostomy/ 105	110	140
68/M	8	Retal carcinoma with rectovesical fistula & renal dysfunction	T9-T10	9mg (0.5% hyperbaric bupivacaine) + 25mcg fentanyl +2mg dexamethasone	T3-L3 bilaterally	Diversion colostomy/ 85	210	95
51/F	8	Rectal carcinoma with rectovaginal fistula, malnutrition & moderate anaemia	T9-T10	9mg (0.5% hyperbaric bupivacaine) + 25mcg fentanyl +2mg dexamethasone	T3-L2 bilaterally	Diversion colostomy/ 90	160	110

- A sensory block extent of T3-L3 was achieved in all patients.
- Intraoperative haemodynamics were generally stable in all patients, with only one patient experiencing transient hypotension which resolved with 3 boluses of 10mg IV ephedrine.
- Good surgical anaesthesia was achieved in all patients, and all surgeries were completed within 105 minutes.
- All patients were discharged from the Post-Anaesthesia Care Unit (PACU), with none requiring a vasopressor, ventilatory support, or higher-level care.

Discussion

The sensory block of T3 – L3 achieved in all of the patients in this series is consistent with the TSA literature.² This provided adequate intraoperative analgesia for open diversionary colostomy without the need for supplemental analgesia.^{4,5} Laparoscopic cholecystectomy, gastrectomy and laparotomy for abdominal malignancies have been safely performed under TSA.² The successful discharge of all patients from the PACU without any requiring high level care is clinically significant especially in a resource-limited setting. It additionally saved patients the cost of ICU care which most cannot afford. With the advantage of maintaining cardiorespiratory stability and obviating the need for postoperative high-level care and support, TSA proves its utility as an alternative technique worth considering in potential.^{2,5}



Fig 3. Patient having diversion colostomy done

Conclusion

TSA may be a viable alternative to general anaesthesia (GA) in resource-limited settings, for open intestinal diversion surgery in frail patients with advanced colorectal cancer who are high-risk for GA.

References:

- Simon HL, Reif de Paula T, Profeta da Luz MM, Nemeth SK, Moug SJ, Keller DS. Frailty in older patients undergoing emergency colorectal surgery: USA National Surgical Quality Improvement Program analysis. British Journal of Surgery. 2020 Sep 1;107(10):1363–71.
- le Roux JJ, Wakabayashi K, Jooma Z. Defining the role of thoracic spinal anaesthesia in the 21st century: a narrative review. Vol. 130, British Journal of Anaesthesia. Elsevier Ltd; 2023. p. e56–65.
- Imbelloni LE, Sakamoto JW, Viana EP, Augusto De Araujo A, Pöttker D, De M, et al. Segmental Spinal Anesthesia: A Systematic Review. J Anesth Clin Res. 2020 Jun 12;11(6):1–6.
- Patel J, Ponnusamy K, Patel A. Thoracic spinal anaesthesia in upper abdominal surgeries. Indian Journal of Clinical Anaesthesia. 2023;10(1).
- Ellakany M. Thoracic spinal anesthesia is safe for patients undergoing abdominal cancer surgery. Anesth Essays Res. 2014;8(2).

Acknowledgements

The authors would like to acknowledge the patients who gave their consent for their information to be used in this case series, as well as Yaw Kusi-Mensah and Kelvin Asamoah-Agyepong for their help in designing this e-poster.