CASE REPORT

Spinal Anaesthesia for Posterior Spinal Decompression in a Patient with Intracoronary Stent: A Case Report

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ABSTRACT **Background:** Anaesthesia for posterior spinal decompression poses significant challenge for the anaesthetist because of awkward patient prone position, and this challenge becomes complex when the patient has a pre-existing cardiac dysfunction. This report shows the complexity of managing a middle aged man with intracoronary stent for posterior spinal decompression under spinal anaesthesia.

Case Presentation: A 52year old businessman with intracoronary stent who was managed for L5 region spinal canal mass with chronic cauda equina syndrome on the background of L3/L4 disc disease. Multidisciplinary Pre–operative assessment and preparation was done with a clear plan for the management of double anti-platelet therapy. He had posterior spinal decompression with uneventful intraoperative and postoperative period.

Conclusion: Multidisciplinary preoperative preparation, intraoperative precautions and monitoring as well as adequate postoperative management is needed to navigate the complexity of anaesthesia for intracoronary stent for posterior spinal decompression.

Keywords: Posterior Spinal decompression, Spinal Anaesthesia, Intracoronary stent, Middle aged, Decompression under spinal anaesthesia.

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INTRODUCTION

Spinal cord injury is a devastating condition, particularly when neurologically complete, affecting patients, families, and healthcare teams. It predominantly affects men aged 31–45 years, often from motor vehicle accidents or falls.[1] Lumbar spinal stenosis is the most common degenerative spinal disease.[2] The global incidence of spinal degenerative disease is estimated at 3.68%, with Europe recording the highest (5.7%) and Africa the lowest (2.4%). Low-income countries bear a disproportionately higher burden, up to four times that of high-income nations.[3] Posterior Spinal decompression through laminectomy remains the standard surgical treatment.[2]

Anaesthetic options for spinal surgery include general, regional, and local techniques.[4] However, in patients with significant cardiac co-morbidities, the prone position and anaesthetic stress increase perioperative risk.[4]as well as the challenge of providing optimal surgical condition, monitoring and adequate oxygenation of the brain and spinal cord.[5] We report a successful posterior decompression performed under spinal anaesthesia in a patient with an intracoronary stent.

CASE PRESENTATION

A 52-year-old businessman presented with recurrent low-back pain for 15 years and right lower-limb weakness for two years. He had undergone coronary angioplasty and intracoronary stent placement four years

earlier for ischaemic heart disease and was on aspirin, metoprolol, and atorvastatin.

Preoperative assessment involved a multidisciplinary team comprising the orthopaedic spine surgeon, cardiologist, and anaesthetist. Cardiac evaluation showed a left ventricular ejection fraction of 65% and old anterior/lateral wall infarct.

MRI revealed L3/L4 degeneration with foraminal stenosis and a circumscribed extradural mass posterior to L5 causing severe canal stenosis and cauda equina compression. He was diagnosed with L5 spinal canal mass with chronic cauda equina syndrome on a background of L3/L4 disc disease.

Aspirin was discontinued seven days before surgery to allow platelet regeneration and reduce the risk of epidural haematoma, as even minimal bleeding in the spinal canal can cause neural compression. Bridging with enoxaparin was used to attenuate the risk of stent thrombosis, and was discontinued more than 12 hours before surgery. Metoprolol, atorvastatin, pregabalin, and tizanidine were continued, however Metoprolol was skipped on the morning of surgery to prevent exacerbation spinal-induced hypotension. Laboratory results were within normal limits (PT 13.9 s, INR 1.22, platelets 223 × 10^9/L).

Spinal anaesthesia was selected to minimise myocardial stress and avoid the sympathetic surge associated with induction and intubation under general anaesthesia, which could trigger stent thrombosis. It also permits spontaneous ventilation and better haemodynamic stability.

After preloading with 10 mL/kg of normal saline, spinal anaesthesia was administered at L4/L5 with 15 mg heavy bupivacaine and 25 µg fentanyl. On achieving a block height T5, the patient was placed on prone position from a trolley on standard bolsters.

Intraoperative vitals were stable: blood pressure ranged from 90/52–128/79 mmHg, pulse 62–79 bpm, and SpO_2 93–99% on 2 L/min oxygen. Blood loss was 300 mL, urine output 500 mL, and 3 L of normal saline was infused. Intraoperative findings showed thickened ligamentum flavum (L4–S1) without definite mass. The procedure lasted 2 hours 50 minutes and was uneventful.

Recovery from anaesthesia was smooth. On postoperative day one, the patient was stable (BP 112/70 mmHg, pulse 78 bpm). Physiotherapy and ambulation with a Zimmer frame began on day three, and by day six, he was walking unaided with a lumbosacral corset. He was discharged on day 13 in good condition.

DISCUSSION

Spinal degenerative disease predominantly affects individuals aged 30–69 years, with a male-to-female ratio of 64.8%:35.2%,[6] consistent with our 52-year-old male patient.

A major anaesthetic challenge in patients with intracoronary stents is determining the optimal timing for non-cardiac surgery to minimize cardiac complications. Matteau et al [7] reported that surgeries performed within 45 days of stent implantation—whether bare-metal (BMS) or drug-eluting (DES)—carry a high risk of adverse cardiac events. Current recommendations suggest delaying non-cardiac surgery for at least six weeks after BMS and one year after DES implantation. Our patient underwent stent placement five years earlier, which likely contributed to his uneventful perioperative course.

Perioperative management of antiplatelet therapy presents another significant challenge, as interruption increases the risk of stent thrombosis, while continuation may cause excessive bleeding. Although dual antiplatelet therapy (DAPT) is usually maintained for 1–6 months after BMS and 12 months after DES, it can be extended in high-risk patients. For elective non-cardiac surgery, aspirin may be continued while reintroducing thienopyridine as soon as feasible postoperatively.[8,9]

Our patient was on aspirin 300 mg daily, with normal coagulation parameters (INR 1.22; platelets 223 × 10^9/L) and no high bleeding risk. Aspirin was withheld seven days preoperatively to allow platelet regeneration and minimise the risk of epidural haematoma. Bridging with low-molecular-weight heparin (LMWH) was implemented to mitigate the risk of stent thrombosis, and was discontinued 12 hours before surgery, then resumed 24 hours postoperatively before transitioning back to aspirin. Estimated intraoperative blood loss was 300 mL, aided by meticulous haemostasis with bipolar diathermy. Stable haemodynamics and absence of cardiovascular complications suggest that the perioperative anti-thrombotic strategy was effective. Although bridging therapy for DAPT remains controversial, LMWH is considered safer than unfractionated heparin (UFH) as it induces less platelet activation.[7,9]

Another concern was the potential risk of spinal epidural haematoma following central neuraxial blockade. Evidence indicates that this risk is higher with epidural than spinal anaesthesia.[10,11] The American Society of Regional Anaesthesia and Pain Medicine (ASRA) recommends confirming adequate platelet recovery before performing neuraxial blocks.[9,12] In this patient, spinal anaesthesia was chosen due to its lower risk profile, coupled with strict precautions: use of a 27G pencil-point needle, single-shot procedure by an experienced anaesthetist, and verified platelet adequacy. These measures likely minimized haematoma risk.

Although some studies suggest that neuraxial blockade is not associated with an increased incidence of spinal haematoma in patients with intracoronary stents on DAPT [13,14] however, careful patient selection and multidisciplinary coordination remain crucial.

CONCLUSION

This case demonstrates that, with judicious perioperative planning and adherence to evidence-based protocols, spinal anaesthesia can be safely and effectively administered in high-risk cardiac patients undergoing spine surgery.

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