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CASE REPORT

# Opioid-Free Anesthesia Management in Anterior Cervical Decompression for Cervical Spondylotic Myelopathy

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## ABSTRACT

Background: Cervical spondylotic myelopathy is degenerative pathology that occurred at spine and can caused neurologic and autonomic dysfunction. It is quite challenging in anesthesia management and to achieve the good outcome especially in maintain hemodynamic.
Case: A Case-Report about 54-year-old woman with history of anterior cervical decompression, Hypertension and diabetic. She was complaining about progressive tetraplegia and hypoesthesia at level thoracal 4. The patient underwent an anterior cervical fussion due to posterior longitudinal Ligament ossification. The vital sign and hemodynamic was stable. At Induction she was given Propofol 120 mg, Dexmeditomidine 1 mcg/kgbb, Rocuronium 50 mg, paracetamol 1000 mg and ketorolac 30 mg. superfivial cervical block was done using 5 ml of Bupivacaine 0,25%. Dexmeditomidine was given at second hour prior surgery with range dose 0,7-1 mcg/kg/hour with gradual reduction of 0,2 mcg per hours. Rocuronium was given until 5th hour of surgery.
Discussion: The operation lasted 6 hours with stable hemodynamics. Preoperative regulation of blood pressure and blood glucose contributed in maintaining stable haemodynamic intraoperative. In this case dexmedetomidine decreased opioid consumption intraoperative and post operative, but it might cause slight hypertension. in this case post operative outcome was good.
Conclusion: Cervical spondylosis myelopathy was a degenerative condition that can cause ototnom dysfunction and neurologic disorder. Anesthesia and analgesia management plays an important role in this case. Dexmeditomidine contributed in maintaining haemodynamic patient remain stable. Careful airway management and appropriate anesthetic strategy are crucial for the successful management of patients with phlegmon and morbid obesity. This case highlights the importance of multidisciplinary approach and preparedness for complications in complex clinical situations. So the complication that can caused by from instability of haemodynamic can be avoided.

**Keywords**: cervical spondylosis myelopathy, anesthesia, analgesia, airway management, haemodynamic disorder

## INTRODUCTION

Cervical spondylotic myelopathy is a pathological condition of the spine resulting from degenerative changes in the cervical vertebral column. These changes may be associated with compression of the spinal cord or its vascular supply through a stenotic process, leading to ischemia and demyelination, which may further result in motor, sensory, and sphincter dysfunction.[1–5] Patients with cervical myelopathy often require spinal cord decompression with or without spinal fusion via either an anterior or posterior approach. Maintaining adequate spinal cord perfusion during surgery is a critical consideration in decompressive procedures to prevent postoperative neurological deficits.[2]

Safe surgical management of patients with cervical spondylotic myelopathy requires a multidisciplinary approach that incorporates specific anesthetic considerations. This patient population is more vulnerable to perioperative complications. Advanced age, prolonged periods of immobility, multiple medical comorbidities, and the risk of worsening neurological injury necessitate particular attention by anesthesiologists during the preoperative, induction, intraoperative, and recovery phases.[6]

The risk of hemodynamic instability following induction of anesthesia may permit the development of autonomic dysfunction, ultimately resulting in persistent hypotension.[2,3,5] This is further influenced by chronic inflammatory changes of the spinal cord or disc herniation, which may involve damage to autonomic nerve fibers within the dura mater and posterior longitudinal ligament.[3] In addition, airway management in cervical spondylosis requires special consideration because it is closely related to post-induction hemodynamic status.[4,5,7] Adequate airway maneuvers are essential to avoid hypoxia and hypoperfusion associated with the patient's hemodynamic condition.[1]

The anesthetic management of patients with cervical spondylotic myelopathy undergoing anterior decompression (anterior cervical discectomy and fusion) is a major concern, particularly regarding airway management, potential neurological compromise, and hemodynamic stability. This case report discusses the management of such a case in a patient with comorbid well-controlled stage 2 hypertension and type 2 diabetes mellitus.

## CASE

A 54-year-old woman with a history of anterior cervical decompression (corpectomy and discectomy), hypertension, and type 2 diabetes mellitus presented to the Emergency Department with progressive weakness of all four extremities for one month prior to admission. Limb weakness had initially been noted five months before admission but was non-progressive and could be managed with medication. The weakness was accompanied by numbness and paresthesia radiating from the neck to the feet. The patient had been diagnosed with type 2 diabetes mellitus five years prior to admission but was non-adherent to routine follow-up and medication; the same applied to her hypertension. She had previously received treatment and was diagnosed with cervical myeloradiculopathy based on chest, thoracolumbar, and cervical radiographs, as well as cervical MRI.

The patient was referred for anterior cervical discectomy and fusion indicated for ossification of the posterior longitudinal ligament due to cervical spondylotic myelopathy. On presentation, her level of consciousness was Glasgow Coma Scale (GCS) E4V5M6. Blood pressure was 131/75 mmHg, heart rate 86 beats/min with regular rhythm and adequate equal pulse volume, respiratory rate 19 breaths/min, afebrile (37°C), and oxygen saturation 99% on room air. Physical examination revealed no abnormalities on general internal status, including cardiopulmonary findings. Neurological examination demonstrated sensory and motor deficits. The patient had decreased motor strength/paresis in all extremities with an average motor score of 3 (range 3-4) and hypoesthesia below the T5 level. No pathological reflexes were observed. Cervical localization examination revealed a positive Lhermitte sign, positive bilateral Spurling test, modified Japanese Orthopaedic Association (mJOA) score of 12, and Nurick grade 3.

During hospitalization, the patient's

blood pressure remained poorly controlled and required specialized management by an internist, leading to a diagnosis of stage 2 hypertension. Electrocardiographic evaluation showed no cardiomegaly or other abnormalities.

Laboratory investigations (Table 1) showed no abnormalities in routine hematology, blood chemistry, or renal function. However, blood glucose levels were above the normal range, and HbA1c was >7% (not achieving the 2022 PERKENI therapeutic target). Cervical radiography (Figure 1) showed no malalignment, a Pavlov ratio of 0.72, and a sagittal vertical axis (C2-C7) of 9.19 mm. Cervical MRI (Figure 2) demonstrated on T1-weighted imaging canal stenosis, a hypointense lesion at the C5-C6 posterior longitudinal ligament without contrast enhancement, and disc protrusions at C5-C6 and C6-C7. T2-weighted imaging showed canal stenosis, a hypointense lesion at the C5-C6 posterior longitudinal ligament without contrast enhancement, disc protrusions at C5-C6 and C6-C7, Modic type I changes, Pfirrmann grade 3 degeneration, and no Schmorl nodes. These radiological findings supported the diagnosis of myeloradiculopathy secondary to cervical spondylotic myelopathy due to ossification of the posterior longitudinal ligament with nucleus pulposus herniation.

A patient weighing 50 kg with a height of 155 cm underwent anterior cervical discectomy and fusion under general anesthesia.

**Table 1. Laboratory Result**

| Laboratory | Result | |
|---|---|---|
| | 29/3/23 | 19/4/23 |
| Hemoglobin | 11.6 | 12.0 |
| Hematocrit | 36.4 | 37.1 |
| leukocytes | 5.220 | 15.540 |
| platelets | 214.000 | 316.000 |
| Random Blood Glucose | 211 | 126 |
| Fasting Blood Glucose | 201 | - |
| HbA1c | 8,6 | - |
| Ur | 24,8 | |
| Cr | 0,82 | |
| Na | 140 | 138 |
| K | 3.6 | 38 |

Preoxygenation with 100% oxygen was performed, followed by induction using propofol 120 mg, dexmedetomidine 1 µg/kg body weight, rocuronium 50 mg, paracetamol 1000 mg, and ketorolac 30 mg. A regional anesthetic technique was performed after induction using a bilateral superficial cervical plexus block with 0.25% bupivacaine 5 mL on each side. Intubation was achieved using a size 7 endotracheal tube (ETT) positioned at a depth of 20 cm.

Premedication prescribed by the neurosurgery and internal medicine teams included gabapentin (100-0-100), diclofenac sodium 50 mg every 12 hours, omeprazole 40 mg every 12 hours, insulin analog therapy, and amlodipine 10 mg daily. During surgery, maintenance anesthesia consisted of dexmedetomidine infusion initiated at the second hour (0.7 µg/kg/h tapered by 0.2 µg/kg/h hourly to 0.1 µg/kg/h), rocuronium 20 mg/h until the fifth operative hour, and sevoflurane 2-3%. Total operative time was 6 hours. Intraoperative hemodynamics remained stable.

During drilling and cutting of the cervical spine, 1500 mL of lactated Ringer's solution was administered intraoperatively. At the second hour of surgery, tranexamic acid 1000 mg was given. Estimated blood loss was 100 mL. A spinal fixation device was placed. A size 16 Foley catheter was inserted, with a total urine output of 1300 mL during surgery. No significant intraoperative complications occurred; blood pressure remained relatively constant, with systolic values between 110-130 mmHg and diastolic values between 50-60 mmHg. No signs of intraoperative shock were observed.

Postoperatively, the patient was transferred to the intensive care unit under propofol sedation at 25 µg/kg/min, with analgesia consisting of paracetamol 1000 mg every 6 hours and ketorolac 30 mg every 8 hours. Gastrointestinal prophylaxis was provided with omeprazole 40 mg every 12 hours. Random blood glucose monitoring was continued routinely with maintenance insulin analog therapy adjusted by the internal medicine team. The patient's level of consciousness improved 15 hours after intensive care admission, after which she was managed in the general intensive care unit. On

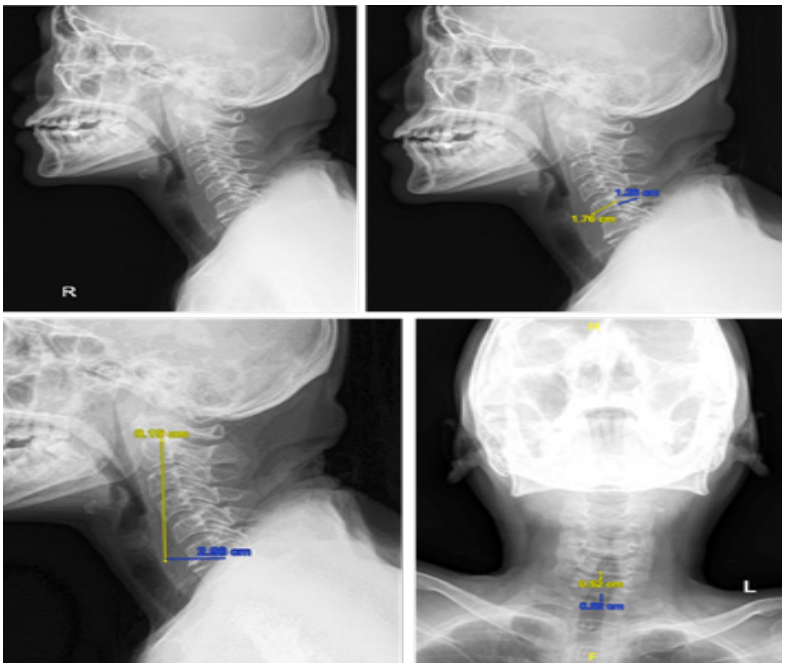


**Figure 1. Cervical spine X-ray**

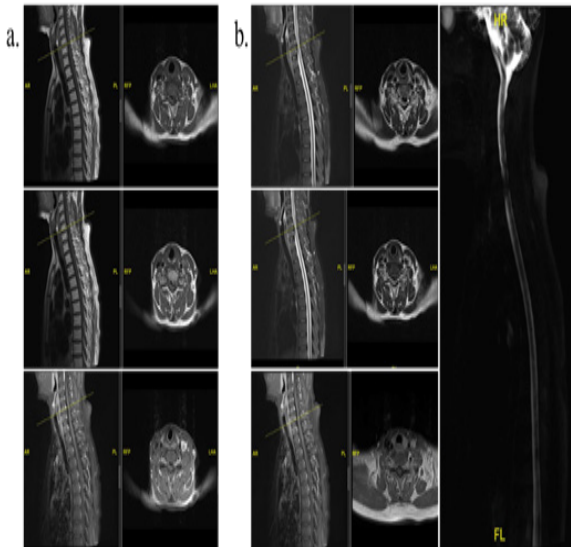


**Figure 2. Cervical spine MRI (a. T1W and b. T2W)**

postoperative day 2, the patient was transferred to a regular ward.

## DISCUSSION

Preoperative

A key component in preventing complications is thorough preoperative patient assessment. At this stage, the anesthesiologist performs comprehensive history taking, physical examination, and supporting investigations, and formulates an anesthetic and perioperative management strategy. A detailed discussion of the patient's medical history is essential given the high incidence of cardiopulmonary disorders in this population. The primary focus of the anesthesiologist is to prevent exacerbation of pre-existing spinal cord injury in order to avoid additional neurological impairment or deficits.[1]

The anesthesiologist must also assess the patient's ability to flex and extend the neck while awake in preparation for intubation.[6] In some cases of cervical spondylosis, airway management is highly challenging due to inadequate mouth opening, limited cervical mobility, neck rigidity, and Mallampati class IV airway. Inappropriate airway management may exacerbate the underlying disease.[1,5,7] In certain cases, anesthesiologists encounter difficulty with intubation because of poor glottic visualization resulting from cervical spine instability, often requiring greater physical effort to obtain an adequate laryngeal view.[5] The most severe complication of inadequate airway management in patients with cervical spondylosis is death.[7]

C2C6AR (the ratio of the angle formed by a line along the inferior border of the second

cervical vertebra and a line along the inferior border of the sixth cervical vertebra in extension compared with the neutral position) measured from preoperative cervical radiographs may be the most accurate predictor of cervical mobility and difficult laryngoscopy in patients with cervical spondylosis.[7] Nevertheless, no single assessment has proven fully reliable in detecting difficult airways in cervical spondylosis.

Although video laryngoscopy improves glottic visualization, it has not consistently demonstrated higher success rates compared with direct Macintosh laryngoscopy.[7] In this case, intubation was successfully performed despite ossification of the posterior longitudinal ligament. Oropharyngeal assessment showed Mallampati class II, suggesting a high likelihood of successful intubation despite cervical rigidity. Comorbid hypertension may adversely affect cervical spinal cord injury, leading to further damage and worsening clinical symptoms. Patients with elevated blood pressure are more susceptible to hemodynamic disturbances following laryngoscopy and intubation. Sudden increases in cerebral blood pressure may impair cerebral blood flow and compromise cervical spinal perfusion, potentially aggravating the disease. In hypertensive patients undergoing surgery for cervical spondylotic myelopathy, blood pressure regulation with oral diazepam 10 mg as premedication has been reported to be effective.[1] Diazepam may serve as both an anxiolytic and antihypertensive agent.[8] In this case, blood pressure was effectively controlled using a calcium channel blocker, amlodipine 10 mg.

Autonomic nervous system (ANS) dysfunction is frequently observed in patients with acute spinal disorders. Cervical spondylotic myelopathy is associated with autonomic dysfunction in up to 50% of cases. The ANS regulates visceral organ function, including the cardiovascular system, and plays a major role in heart rate and blood pressure control. Autonomic dysfunction in cervical spondylotic myelopathy is linked to post-induction hemodynamic instability.[2,3,5] Several methods can assess ANS function, including the Valsalva maneuver, isometric handgrip test, cold pressor test, and active standing test.1 However, most of these tests are time-consuming and impractical in the perioperative setting. Another analytical method affecting cardiovascular regulation is heart rate variability (HRV) analysis.[2]

Hemodynamic stability under anesthesia largely depends on the integrity of autonomic pathways that provide feedback to cardiovascular control centers regulating heart rate, myocardial contractility, and vascular tone. As an indicator of autonomic function, HRV may help predict hemodynamic instability. Studies suggest HRV can serve as a predictor of anesthetic-related hemodynamic fluctuations. HRV can be analyzed in either the time domain or the frequency domain. Time-domain analysis involves calculating the standard deviation of normal RR intervals during electrocardiographic monitoring; NN intervals represent the time between consecutive normal heartbeats. Frequency-domain analysis using Fourier transformation evaluates oscillations within specific frequency bands. The low-frequency (LF) band (0.04-0.15 Hz) reflects both sympathetic and parasympathetic modulation, whereas the high-frequency (HF) band (0.15-0.4 Hz) primarily represents parasympathetic activity. The LF/HF ratio is used to estimate sympathovagal balance.

A prospective observational study demonstrated that a higher LF/HF ratio (cutoff: 2.5) was associated with post-induction hypotension in patients with cervical spondylotic myelopathy compared with those who remained hemodynamically stable.[2] A history of diabetes mellitus is another important consideration in patients with cervical spondylotic myelopathy undergoing surgery. Studies report poorer recovery outcomes, particularly in sensory function, among diabetic patients. Diabetes is strongly associated with disruption of microvascular structures, which may negatively affect surgical outcomes.[9] Diabetes can damage the cervical spinal cord, nerve roots, and peripheral nerves through mechanisms of microangiopathy and microvasculitis.[10] Careful perioperative management of diabetes is therefore essential to prevent postoperative complications.[9,10]

Intraoperative

Induction of general anesthesia represents the most critical phase of anesthetic management. During this stage the spinal cord has not yet been mechanically decompressed, the neck muscles cannot provide stabilization, hemodynamic fluctuations may occur, and neurological assessment cannot be performed. Neck movement during this phase may be substantial and can produce dynamic spinal cord compression, creating a risk of cervical cord injury when the neck is not adequately immobilized during intubation. Cervical extension in patients with cervical spondylotic myelopathy can further narrow the spinal canal diameter. Ideally, intubation in these patients involves a three person technique: one person stabilizes the patient's head with both hands to maintain a neutral position, a second person administers sedatives and muscle relaxants while applying cricoid pressure, and a third person provides ventilation during induction before intubation. Depolarizing neuromuscular blockers such as succinylcholine should be avoided because they may trigger fatal hyperkalemia in patients with neurological deficits.[6] In this case, rocuronium was used for neuromuscular relaxation, and no cardiovascular disturbances were observed intraoperatively or during intensive care.

Total IV anesthesia induction with propofol and inhalation anesthesia induction with sevoflurane are safe and appropriate techniques for anesthesia induction in cases of cervical spondylosis myelopathy.[11] However, propofol based anesthesia is associated with higher fentanyl requirements compared with sevoflurane based techniques.[12] In this case, anesthetic maintenance relied primarily on sevoflurane at a concentration of 2 to 3 percent rather than propofol. The low blood to gas partition coefficient of sevoflurane facilitates rapid emergence from anesthesia, making it a commonly used inhalational hypnotic agent during surgery for cervical spondylotic myelopathy.[12]

Intubation in cervical spondylotic myelopathy is often performed under light sedation with topical anesthesia applied to the nasal passages, pharynx, larynx, and proximal

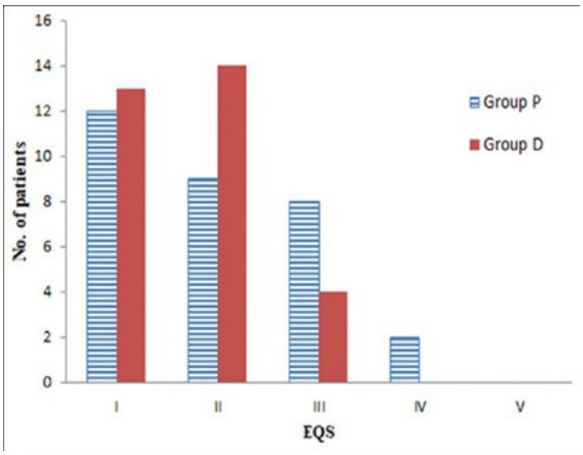


**Figure 3. Extubation quality score following dexmedetomidine administration**

**Extubation quality score (EQS): I = no coughing, easy breathing; II = mild coughing (once or twice), easy breathing; III = moderate coughing (three or four times); IV = severe coughing, dyspnea; and V = laryngospasm, severe coughing and dyspnea. Group D represents the cases (dexmedetomidine administered) and P represents the control group (placebo administered).[13]**

trachea. Two routes are available for intubation, nasal and oral. The nasal route may be considered when immediate extubation is planned after surgery. Its advantage is relative technical ease compared with the oral route, although prolonged nasal intubation increases the risk of sinusitis. Oral intubation is technically more challenging but is preferable in patients who require continued postoperative intubation.[6] The oral route was selected in this case because postoperative mechanical ventilation was required during intensive care.

Optimal recovery from anesthesia after cervical decompression and fusion requires the patient to be awake, cooperative, hemodynamically stable, pain free, with preserved airway reflexes and adequate spontaneous ventilation without straining or coughing. This is important to avoid the need for reintubation, which may compromise the reconstructed cervical structures. Dexmedetomidine, a selective alpha two receptor agonist with sedative, analgesic, and anxiolytic properties and minimal respiratory depression, supports smoother postoperative

recovery.[13] Dexmedetomidine administration provides additional advantages, including a significant reduction in postoperative opioid (fentanyl) requirements and lower pain scores upon awakening and on admission to the PACU. In addition, the effectiveness of the first analgesic dose is increased and prolonged with dexmedetomidine administration. In adults, a plasma dexmedetomidine concentration of 0.7 ng/mL has been shown to reduce sevoflurane requirements by up to 28% when entropy is targeted at 40 to 60.

However, dexmedetomidine administration may increase systolic blood pressure through direct peripheral vasoconstriction caused by the bolus dose, accompanied by a smaller propofol dose during induction. Therefore, blood pressure monitoring is required during dexmedetomidine administration. Optimal intraoperative dexmedetomidine effects are achieved with a maintenance dose of 0.2 mcg/kg/hour following a loading dose of 1 mcg/kg.[13] This case applied current clinical knowledge by administering dexmedetomidine at an induction dose of 1 mcg with maintenance dosing ranging from 0.7 to 0.1 mcg/kg body weight.

Management of chronic nonmalignant pain is an important aspect of treating pain in cervical spondylotic myelopathy, although therapeutic dilemmas often arise in situations of inadequate analgesia.[14] Effective postoperative pain control is a key factor influencing early rehabilitation, morbidity, and mortality, including in cervical spondylotic myelopathy. Opioids have traditionally been the mainstay of postoperative pain management, but multimodal analgesic regimens are commonly used to reduce opioid related adverse effects, including respiratory depression and ileus.[15] Long term opioid use may lead to dependence and physiological disturbances such as endocrine dysfunction, hyperalgesia, and opioid induced neurotoxicity.[14]

The primary indication for opioid use in chronic nonmalignant pain is functional improvement. Unrealistic expectations in nonmalignant pain treatment should be discussed with patients to reach agreement that the goal of pharmacologic therapy is pain reduction, improvement of function and work capacity, enhancement of quality of life or satisfaction, and reduction of suffering. Analgesic therapy is not intended to eliminate pain in a short period of time.[14,15] In this case, fentanyl, an opioid, was not administered and was replaced with multimodal analgesia consisting of paracetamol and ketorolac.

The use of paracetamol and ketorolac in this case was based on their effectiveness as multimodal analgesics in reducing postoperative pain with efficacy comparable to single agent opioid therapy, with fewer adverse effects and no evidence of inferiority. The combination of paracetamol and ketorolac has also been shown to be more effective in suppressing pain than

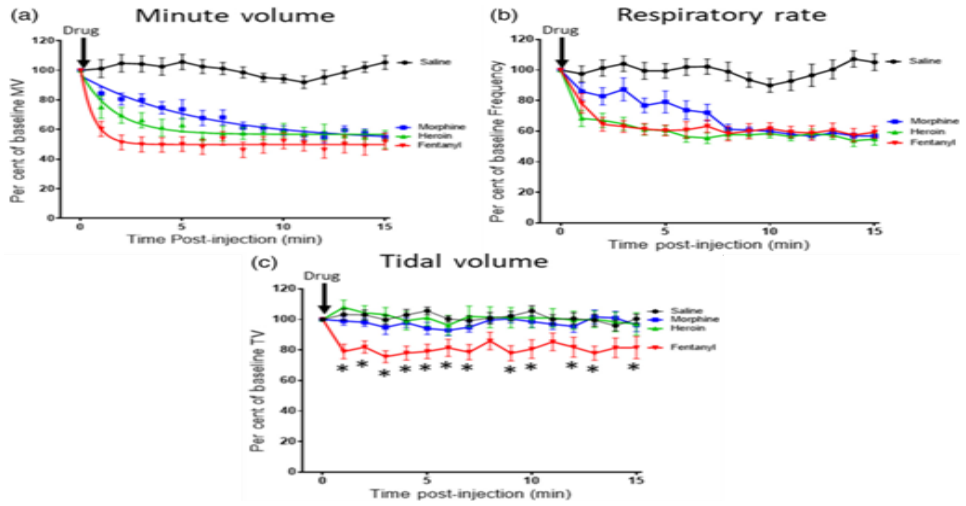


**Figure 4. Effects of Fentanyl on Breathing/Respiration[16]**

fentanyl alone at two hours postoperatively.[15] Studies explain that fentanyl rapidly suppresses respiration, potentially causing respiratory depression characterized by reduced respiratory rate and decreased tidal volume (Figure 3).

Quantitatively, fentanyl is approximately seventy times more potent than heroin or morphine in depressing respiratory rate. This reflects its much higher potency compared with other opioids, but also results in a faster onset of respiratory depression. Studies also observe that fentanyl induced respiratory depression requires higher doses of the opioid antagonist naloxone for reversal.[15,16]

The dorsal approach to the spine requires special consideration and planning because the patient is positioned prone. Changing the patient's position from supine to prone requires precise coordination and adequate personnel. The head is usually secured in a Mayfield skull clamp; rotation of the head and neck must be performed without excessive neck movement, especially if muscle relaxants have been administered, because postoperative neurological deficits may occur. The neck is generally placed in a slightly flexed or neutral position. If fusion is required, the neck may be repositioned after decompression.[6,17,18]

Cervical spondylotic myelopathy is associated with impaired neural perfusion that may lead to intermittent and progressive microinfarctions of the spinal cord. Special attention must be given to blood pressure monitoring using an arterial line. Blood pressure should be maintained at or slightly above the patient's baseline values. Administration of anesthetic agents must be closely supervised, particularly those with hypotensive effects such as propofol, because they may result in persistent hypotension that is harmful to the patient. This condition may threaten spinal cord function and worsen bleeding.[6]

Hypotension can be prevented with appropriate volume resuscitation, and in some cases vasopressor support with dopamine or phenylephrine is required.[6] Patients with cervical spondylotic myelopathy undergoing surgery require additional attention because they are more likely to develop persistent hypotension.[3,6] A case report described that the development of hypertension in cervical spondylotic myelopathy may be related to neurogenic hypertension caused by brainstem invagination from the upper cervical spine. In that case, the progression of clinical hypertension was attributed to autonomic neuropathy resulting from long term compression of the upper spinal cord. Intraoperative hypoperfusion or new cervical injury may produce autonomic dysfunction that leads to hypotension, although the exact mechanism remains unclear.[3]

This case report did not document failed intubation or intraoperative blood pressure complications, and no signs of shock were observed. Before surgery, the patient's blood pressure had been adequately controlled with medical therapy using amlodipine 10 mg. After regulation, the patient's baseline systolic blood pressure ranged from 110 to 120 mmHg. The threshold defining severe intraoperative hypotension is an absolute systolic arterial pressure below 80 mmHg, at which point vasopressor therapy is required.[3] Hypotension can also be assessed using systolic pressure values; systolic pressure above 100 mmHg with a mean arterial pressure of 80 to 85 mmHg is categorized as normotensive.[5]

Postoperative

After surgical intervention, the anesthesiologist must determine whether it is safe to awaken and extubate the patient. Although it may appear straightforward, the complexity of the surgery and the patient's general medical condition can make extubation hazardous. Postoperative airway edema, pulmonary aspiration, obstructive neck hematoma, and poor early respiratory function all contribute to a high incidence of early postoperative complications.[6]

Postoperative quadriparesis is a very rare surgical complication in cervical spondylotic myelopathy. It may result from external mechanical trauma, including inadequate neck positioning during intubation, excessive neck extension during surgical positioning, and hypoperfusion related to relative hypotension. During cervical movement, perfusion of the

radicular vessels is believed to be compromised. Changes in spinal curvature may increase cerebrospinal fluid pressure and reduce spinal cord perfusion by approximately 20 mmHg.[4] In addition, spinal extension may induce folding of the ligamentum flavum, compressing the spinal cord and posterior longitudinal vessels, thereby disturbing autonomic neural physiology and causing hemodynamic instability.[19]

Postoperative extubation in cervical spondylotic myelopathy should only be performed once adequate ventilation is confirmed. Extubation is not recommended before adequate respiration is established, even if the patient demonstrates spontaneous breathing and eye opening, because cervical spondylotic myelopathy may lead to respiratory insufficiency.[19]

The success of discectomy and decompression surgery in cervical spondylotic myelopathy is influenced by several factors, including premorbid condition, extent of surgery, duration of surgery, intraoperative complications, intraoperative blood loss, and postoperative clinical evaluation. Average blood loss during cervical laminectomy ranges from 32 to 75 mL.[1] In this case, blood loss was greater at 100 mL. However, no hemodynamic disturbances or signs of intraoperative shock were observed. In some cases, abnormal positioning may cause neck venous congestion and increase blood loss.[1] Postoperative neurological assessment is usually performed immediately after surgery to evaluate the success of the intervention. This evaluation compares baseline preoperative neurological findings with postoperative results. Observed improvement indicates successful anesthetic and surgical management.[1] In this case, postoperative neurological scores improved from a preoperative range of 3 to 4 to a postoperative range of 4 to 5.

Postoperative recovery in cervical spondylotic myelopathy with comorbid type 2 diabetes mellitus varies depending on glycemic control during the preoperative and postoperative periods. Poor glycemic control may impair functional recovery after surgery.[9] In this case, diabetes mellitus was well managed by the internal medicine team using insulin analog therapy, resulting in stable glycemic control from the preoperative through postoperative period. A meta analysis concluded that cervical spondylotic myelopathy patients with diabetes mellitus have a significantly increased risk of surgical wound complications, epidural hematoma or wound hematoma, chronic pulmonary disease, and cardiac complications.[20]

In this case, wound healing was satisfactory and no wound related complications occurred. Furthermore, from the intraoperative period through postoperative intensive care transfer, no cardiopulmonary abnormalities were reported or observed.

## CONCLUSION

Cervical spondylotic myelopathy is a pathological condition of the cervical spine resulting from degenerative processes. It is associated with spinal cord compression, autonomic dysfunction, and neurological impairment. Anesthetic management before decompression and fusion presents challenges, particularly in airway management, analgesic administration, sedation, and surgical positioning. Intubation and positioning influence intraoperative hemodynamic stability and postoperative neurological outcomes. Analgesic management focuses on reducing pain intensity, improving function, and avoiding dependence. Dexmedetomidine is beneficial for physiological stabilization and smoother recovery. Glycemic regulation is essential in patients with comorbid diabetes mellitus.

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