Letter to Editor
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Difficult Airway Management in A Patient with Ankylosing Spondylitis and Cervical Myelopathy for Cervical Instrumentation Surgery

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Sir,

Ankylosing Spondylitis (AS) is a chronic, progressive autoimmune spondylo-arthopathy primarily afflicting the spinal column leading to ankylosis. Patients with cervical spine AS pose significant challenge to anesthesiologists. We report successful management of difficult airway in a patient with AS and cervical myelopathy for cervical fusion surgery.

A 28-year-old gentleman presented with one-year history of paresthesia of all limbs. His past history included obstructive sleep apnea and HLA-B27 positive AS managed with disease modifying anti-rheumatic drugs. On examination, there was 10% sensory loss below C5 level. His laboratory parameters were normal. Computed tomography of cervical spine showed Atlanto-Axial Dislocation (AAD) with fused C2-3, C4-5-6 vertebral bodies (Figure 1A). Magnetic resonance imaging demonstrated posterior compression at C6-7 with cord signal changes (Figure 1B). He was scheduled for C6-7 laminectomy and lateral mass fusion under general anesthesia. In view of anticipated difficult airway and aggravation of neurological symptoms during intubation, awake Fiberoptic Intubation (FOI) was planned. However, since patient did not consent, anesthetized FOI was considered. After anesthetic induction with thiopentone, fentanyl and rocuronium, oral fiberoptic intubation was attempted but failed. Intubation by a senior anesthesiologist using C-MAC videolaryngoscope was also unsuccessful. In view of difficulty with mask ventilation and desaturation, Laryngeal Mask Airway (LMA) was inserted for facilitating oxygenation and ventilation. As definitive airway was needed for this surgery, patient was awakened from anesthesia, LMA was removed and surgery was postponed. Following detailed discussion, patient consented for awake FOI and surgery the next day.

Airway was prepared with nebulized lidocaine, intramuscular glycopyrrolate, superior laryngeal nerve block, trans-tracheal lignocaine and nasal xylometazoline. To reduce patient apprehension/ discomfort and enhance cooperation, dexmedetomidine 0.4μg/kg was administered over 10 minutes. Trachea was intubated in first attempt through nasal route using 7.5 mm ID flexo-metallic tube. Anesthesia was induced and dexmedetomidine was continued to provide opioid-free analgesia. Trachea was extubated after surgery. Rest of the postoperative course was uneventful.

Airway management is challenging in patients with AS. Fused cervical vertebrae, AAD and symptomatic compressive myelopathy were reasons for selecting awake FOI in our patient. However, airway management was complicated initially from patient refusal and failure of asleep FOI and videolaryngoscope-guided intubation. The possible reasons for failure could be difficulty with anesthetized oral FOI and airway soiling with multiple intubation attempts. Effective communication with the patient about airway management, and use of nasal route, dexmedetomidine and airway anesthesia during awake FOI might have contributed to the success despite earlier failed intubation and could be an effective solution in such

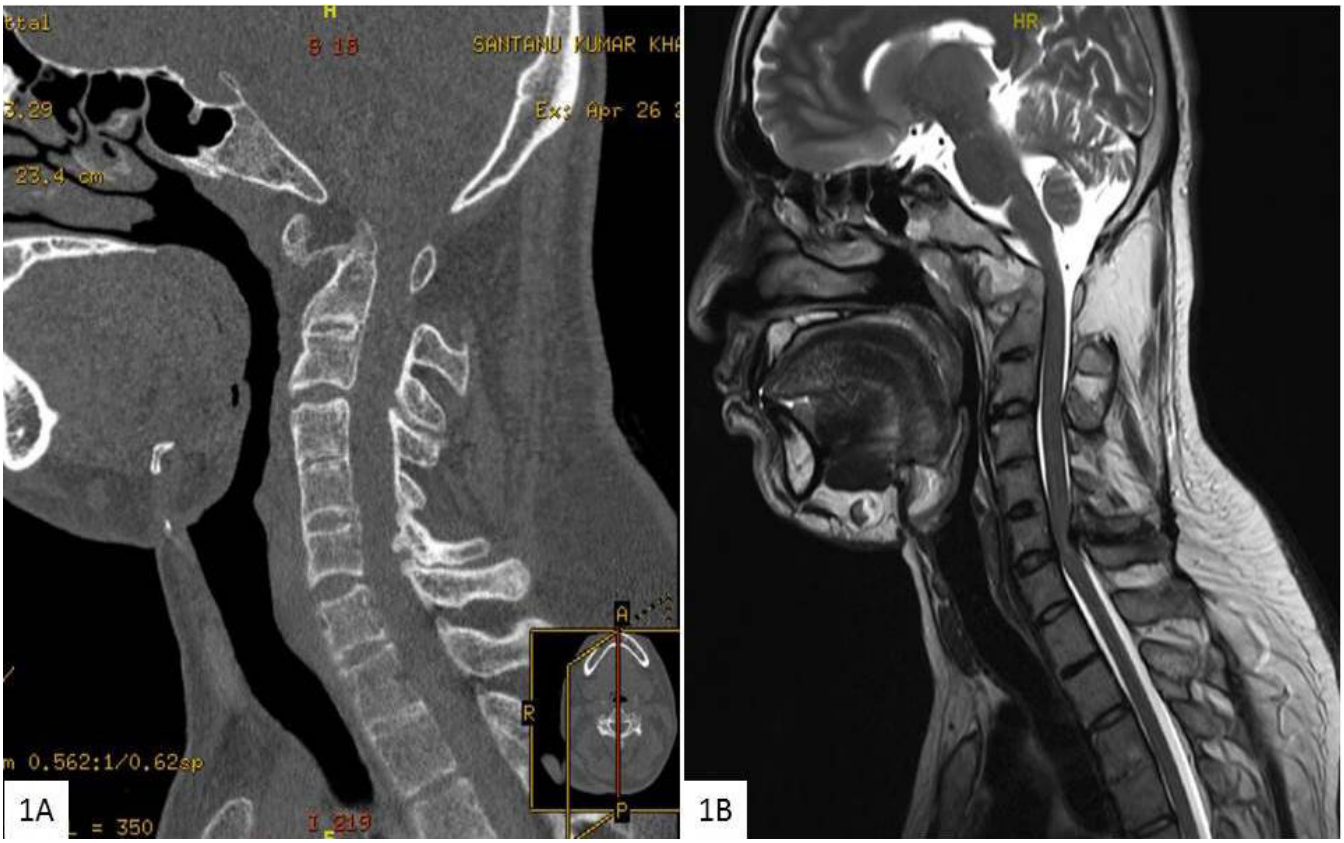

Figure 2. **(A)** Computed tomography imaging of the cervical spine showed atlanto-axial dislocation with fused C2-3, C4-5-6 vertebral bodies and bridging osteophytes below C1-2. **(B)** and posterior compression at C6-7 with cord signal changes on magnetic resonance imaging.

situations. Both successful and failed awake FOI has been described in patients with AS[1,2]. Dexmedetomidine and airway anesthesia technique succeeded when fentanyl-midazolam technique failed during awake FOI in a patient with AS[3]. Dexmedetomidine provides better conditions for awake intubation and self-positioning in patients with cervical pathologies[4]. Limited neck extension, reduced inter-incisor and sterno-mental distance and higher modified Mallampati score are predictors for difficult intubation in patients with AS and this should be borne in mind during preparation for airway management in these patients[5].

To conclude, adequate assessment, careful preparation and meticulous execution of airway management are needed in patients with AS. Dexmedetomidine with airway anesthesia appears to be an effective technique for awake FOI in patients with AS.

References

1. Gopalakrishna KN, Prajwal S, Sriganesh K, Reddy BS. Fixed cervical flexion deformity: Difficult airway. Saudi Journal of Anaesthesia. 2018; 12(2):362–3. https://doi.org/10.4103/sja.SJA_676_17. PMid:29628864. PMCid:PMC5875242
2. Ahmad N, Channa AB, Mansoor A, Hussain A. Management of difficult intubation in a patient with ankylosing spondylitis--a case report. Middle East Journal of Anesthesiology. 2005; 18(2):379–84
3. Kumar N, Bindra A, Mahajan C, Yadav N. Airway management in a patient of ankylosing spondylitis with traumatic cervical spine injury. Saudi Journal of Anaesthesia. 2015; 9(3):327–9. https://doi.org/10.4103/1658-354X.154741. PMid:26240557. PMCid:PMC4478831

4. Sriganesh K, Ramesh VJ, Veena S, Chandramouli BA. Dexmedetomidine for awake fibreoptic intubation and awake self-positioning in a patient with a critically located cervical lesion for surgical removal of infra-tentorial tumour. Anaesthesia. 2010; 65(9):949–51. https://doi.org/10.1111/j.1365-2044.2010.06411.x. PMid:20569247

5. Ustun N, Tok F, Davarci I, et al. Predictors of difficult intubation in patients with ankylosing spondylitis: Do disease activity and spinal mobility indices matter? Archives of Rheumatology. 2014; 29(3):155–9. https://doi.org/10.5606/tjr.2014.4585