



ANTICIPATED DIFFICULT AIRWAY MANAGEMENT IN A KNOWN CASE OF ANKYLOSING SPONDYLITIS WITH KYPHOTIC DEFORMITY

Anaesthesiology

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ABSTRACT

Ankylosing Spondylitis is chronic inflammatory disease involving mainly sacroiliac joint progressing centrally to vertebrae leading to fibrosis and fusion. Due to fibrosis of cervical spine and temporomandibular joint, patient has decrease cervical spine mobility and limited mouth opening. The rigid spine makes positioning very difficult adding difficulty to airway process. We report a 32-year-old male, a case of ankylosing spondylitis for 4 years which was progressive in nature with involvement of all the facet joints of spine resulting in thoracolumbar kyphosis, posted for deformity correction and posterior instrumentation. Due to kyphotic deformity and cervical spine fibrosis, patient had inability to lie down supine, restricted neck movements of flexion, extension and lateral rotation with mouth opening of <1 cm. Plan of anaesthetic management was to secure the airway by awake nasal intubation using Ambu aScope bronchoscope followed by general anaesthesia. The ultimate challenge was to secure the airway in this patient with cervical flexion deformity. We successfully managed this case by giving RAMP position and nasotracheal intubation with flexometallic tube in awake state using Ambu aScope bronchoscope with necessity to apply external laryngeal pressure for optimized glottis exposure following topical anaesthesia and sedation with dexmedetomidine. Awake fibreoptic intubation is the safest option in these patients with potentially difficult airway as it allows continuous monitoring and preserves spontaneous respiration until a definitive airway is established.

KEYWORDS

Difficult airway, kyphoscoliosis, anaesthesia, Ambu aScope

INTRODUCTION

Ankylosing Spondylitis is chronic inflammatory disease involving mainly sacroiliac joint progressing centrally to vertebrae leading to fibrosis and fusion.

Due to fibrosis of cervical spine and temporomandibular joint, patient has decrease cervical spine mobility and limited mouth opening.

The rigid spine makes positioning very difficult adding difficulty to airway process.

CASE REPORT

A 32 years old, 72 kg male patient diagnosed with ankylosing spondylitis had been having gradual onset of deformity which was painful since 4 years and progressive, with involvement of all the facet joints of spine resulting in thoracolumbar kyphosis.

Patient was unable to look up and unable to straighten himself while walking.

Due to the exaggerated curvature of spine and fixed rigidity of the neck, patient could not lie down supine.

Patient was scheduled for deformity correction and posterior instrumentation in prone position.

Patient Had No Other Comorbidities.

On general examination, the patient was afebrile with pulse rate of 78/min, blood pressure of 120/80 mmHg and respiratory rate of 16-18/min. On airway examination, it was found that the patient had mouth opening of <1 cm and MPC class III with restricted neck movements of flexion, extension and lateral rotation. Laboratory studies including Haemoglobin, liver function tests and renal function tests, serum electrolyte profiles were normal.

MRI Dorsal spine +WSS- Anterolisthesis of D11 vertebra over D12 vertebra. Cortex of D12 vertebra causing effacement of anterior SA space, abutting spinal cord. Loss of lumbar lordosis. Ankylosis of B/L sacroiliac joints. Ankylosis of cervical, lumbar, dorsal levels.

Pulmonary function test-Mod restriction with small airway obstruction with good bronchodilator reversibility.

Anaesthetic Management

Plan of anaesthetic management was to secure the airway by awake nasal intubation using Ambu aScope bronchoscope followed by general anaesthesia. After thoroughly explaining the procedure to the patient, informed written consent was obtained. Difficult airway equipments with emergency drugs cart were kept ready. Patient taken

to preoperative room. Airway prepared by nebulisation with 4% lignocaine and gargles by using viscous lignocaine and otrivin nasal drops in both nostrils. Intramuscular injection of glycopyrrolate 0.2 mg was given as antisialagogue. Patient shifted to Operating room. ASA standard monitors were attached. As patient could not lie supine, RAMP position given using 2 pillows and head ring. Preoxygenation started with 100% O₂ by nasal prongs. Sedation given with inj fentanyl 1 µg/kg and dexmedetomidine infusion was started at 0.5 µg/kg/hr. Lignocaine 10% oropharyngeal spray 3-4 puffs given. Under AAP transtracheal and superior laryngeal nerve block was given. Nasal patency checked by adding lignocaine jelly in both nostrils and by inserting nasopharyngeal airway. Flexometallic tube no. 7 mounted to the insertion cord of Ambu aScope. Ambu aScope introduced through more patent nostril maintaining midline position of head and scope, negotiated with upper airway emerging to pharynx above epiglottis and vocal cord. Once the adequacy of topical anaesthesia verified scope was advanced further under epiglottis and through vocal cords, until carina was viewed. Scope was maintained in this position until flexometallic tube was advanced. We found difficulty in advancing tube but we overcame this problem by external laryngeal manipulation. Tip of tube and carina was watched carefully while removing the scope. Black line at level of cord confirmed. Ambu aScope removed, cuff inflated. Air entry checked and tube position confirmed with capnography. Anaesthesia induced with inj propofol 2 mg/kg and inj cisatracurium 0.15 mg/kg. Throat packing done. Rules tube inserted. Prone position given with padding. Anaesthesia maintained on oxygen, nitrous oxide, isoflurane and intermittent cisatracurium.

DISCUSSION

AS leads to fibrosis, ossification and ankylosis along the spinal column and sacroiliac articulations. Cervical column and atlantooccipital articulation mobility are reduced and cervical vertebrae become fixed in flexed position. These patients are also prone to fractures. All these factors causes difficulty to airway management. The ultimate challenge was to secure the airway in this patient with cervical flexion deformity.

Successful difficult airway management needs early recognition, adequate preparation, planned and vigilant approach.

CONCLUSION

Awake fibreoptic intubation is the safest option in these patients with potentially difficult airway as it allows continuous monitoring and preserves spontaneous respiration until a definitive airway is established.

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