

ANESTHETIC MANAGEMENT OF A PATIENT WITH ANKYLOSING SPONDYLITIS PRESENTING WITH FRACTURE FEMUR - A CASE REPORT

Saleem Ahmed, Khalid Zaeem Aslam, Syed Samee Uddin, Sanum Kashif

Military Hospital/National University of Medical Sciences (NUMS) Rawalpindi Pakistan

ABSTRACT

A patient with severe ankylosing spondylitis with fixed spine deformity was planned for hemi arthroplasty for fracture neck of femur. After failed attempts at regional anesthesia, patient was managed under general anesthesia with awake fiberoptic intubation technique and was successfully extubated at the end of surgical procedure.

Keywords: Ankylosing spondylitis, Awake fiber optic intubation, Failed intubation, Fixed spine deformity, Ultra sound guided.

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INTRODUCTION

Ankylosing spondylitis (AS) is a chronic inflammatory disease affecting axial skeleton which progresses to involve whole spine forming a rigid "bamboo spine"¹. Regional anesthesia (RA), is preferable for surgeries involving hip and lower limbs². As patient, who has contraindications to or failed attempt at RA, has to be managed under general anesthesia (GA). AS offers a challenge in administering RA and also in maintaining a definitive airway during GA. Optimum care of AS patient requires careful patient positioning to avoid any postoperative complications³.

CASE REPORT

A 60 years old man, an employee at paper factory, presented for right hemi arthroplasty for fracture neck of femur. He was referred from a district level hospital where attempts to administer RA and GA were unsuccessful. He had limited spine mobility for last 10-15 years. He could walk without dyspnea, felt no restriction while lifting his arms and could squat as well. He used 4-5 pillows molded to support his upper

back, neck and head. He had normal vital signs, respiratory and cardiovascular system (CVS). His mouth opening was adequate with no temporomandibular joint (TMJ) immobility. There was fixed kyphotic deformity of cervical spine (CS), thoracic and lumbar spine. He could neither look up nor down without moving all his trunk. His



Figure-1: Frontal and lateral projection of cervical spine.

base line investigations were normal except for a positive test for hepatitis C. His X rays CS and thoraco lumbar spines (fig-1 & 2), were obtained which revealed CS had fused into a solid bony structure with no identifiable vertebral bodies. Similarly thoraco lumbar spine showed fibrosed interspinous ligaments with limited intervertebral disc spaces.

Correspondence: Dr Syed Samee Uddin, Classified Anesthesiologist MH Rawalpindi Pakistan
 Email: samee_samee@hotmail.com
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Anaesthetic options were discussed with the patient and consensus to proceed as awake fiber optic intubation (FOI) and surgery under GA if RA remains unsuccessful. An ultra sono graphic (USG) guided approach for RA was attempted. USG identified two planes to approach spinal canal, which was successful to a limited depth beyond which dense bony resistance were encountered, which were not negotiable despite multiple attempts.

Patient was premedicated with Inj glycopyrolate 0.2 mg I/V. His oral cavity was sprayed with local anesthetic (LA) inj lidocaine 4%. Inj lidocaine 2%, 3 ml intra tracheal (IT) was given followed by a violent cough. After ensuring adequate LA of airway, awake FOI, using PANTEX fiber optic scope (FOS) with size 7 armored endotracheal tube (ETT) from front was successfully placed. After securing airway, GA with volatile anesthetics and muscle relaxation was maintained. Careful left lateral patient's positioning with appropriate support padding and surgery proceeded uneventfully. At the end of surgery patient was successfully extubated.

DISCUSSION

AS involves axial skeleton but peripheral joints including TMJ and arytenoid cartilages may also be affected making tracheal intubation impossible¹. The disease may deform heart valves². It can result in restrictive respiratory functions due to fused costo chondral joints and can even make cardiac resuscitation difficult. Our patient in his 6th decade of life, had good CVS, respiratory reserves and was functionally ambulant.

USG can often help in AS patients for RA⁴⁻⁶. We attempted RA using curvilinear probe, but were not successful in median as well as in para median planes.

Chaitowitz and colleagues demonstrated successful RA using fluoroscopy⁷. However this require C arm and experience.

Trivial trauma during laryngoscopy or positioning for surgery can cause CS fractures in

these patients^{8,9}. Thus avoiding laryngoscopy is very important to prevent fractures and neurological complications. Our patient demonstrated his comfortable position with support padding both in supine and lateral position. His posture was more like a person sitting on a beach chair (fig-3).

RA has been advocated for AS patients



Figure-3: Partly supported patient position while under GA, fixed kyphotic deformity beach chair position.



Figure-2: Frontal and lateral projections of dorso lumbar spines.

undergoing hip and lower limbs surgeries but the chance to encounter a scenario in which definitive airway might be required is still there¹⁰. In such circumstance not having a facility of FOS and use of laryngoscope can cause fractures, neurological complications and a fatal outcome in case of failed ventilation in patients with advance

disease as chin to chest, making it impossible even to perform a tracheostomy.

CONCLUSION

As patient with fracture femur can be successfully managed under GA using awake FOI. However, anesthetic management of these patients under RA without the presence of backup FOS should not be attempted.

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The case is submitted for publishing after obtaining written permission from patient.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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