

## ROLE OF SPINAL ANAESTHESIA IN PERIPHERAL HOSPITAL : CASE OF ANKYLOSING SPONDYLITIS FOR HERNIOPLASTY

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### ABSTRACT

Ankylosing Spondylitis is a chronic inflammatory disease affecting axial skeleton and peripheral joints. This case presents a unique challenge, as both central neuraxial blockade and airway management are expected to be complex, along with cardiac and other comorbidities. This becomes even more difficult in case of a peripheral institution where there are lack of resources viz. equipment and manpower. Here I present a geriatric patient with severe ankylosing spondylitis associated with cardiac disease, COPD and pleural effusion for Lichtenstein tension free hernioplasty. On his radiographs he had bamboo spine with severe kyphotic deformity with immobile cervico dorso and lumbar spine. Airway was difficult due to lack of extension of cervical spine and mouth opening was < 3cm. As there was non availability of video laryngoscope as well as fiberoptic bronchoscope, general anesthesia could not be given therefore spinal anaesthesia was performed and was successful. Neuraxial anaesthesia is mostly anaesthesia of choice in peripheral institutions due to lack of resources.

**KEYWORDS :** Ankylosing spondylitis, Spinal Anaesthesia

### INTRODUCTION

Ankylosing spondylitis (AS) is a chronic inflammatory disease affecting axial skeleton and peripheral joints.<sup>1</sup> It poses challenge due to potential difficult airway, difficult central neuraxial blockade, cardiovascular and respiratory complications and medications used to reduce pain and inflammation.<sup>1</sup>

Lichtenstein Repair of Inguinal Hernia is a tension free hernia repair surgery. Performed usually if there is history of chronic pain, increasing swelling, difficulty in bowel movements or any features of sepsis.

Fiberoptic bronchoscopy has been used to secure airway as central neuraxial block may be difficult to perform in such cases.<sup>2</sup> Ultrasound (US) guided central and peripheral nerve blocks is also a successful technique.<sup>3</sup> Both fiberoptic bronchoscope and ultrasound guided blockade techniques are unavailable at peripheral institutions making spinal anaesthesia as the procedure of choice in such setting.

Here is a case of a geriatric male who suffered from severe AS and history of CAD and COPD posted for hernia repair surgery. The role of spinal anaesthesia in peripheral setting along with decision whether such cases should be performed in peripheral setting.

Informed consent for publication was obtained from the patient. This particular case was in December 2023.

### Case Report

An eighty five year old male, known case of severe AS, was listed for Lichtenstein tension free hernioplasty. He had bamboo spine with severe kyphosis and immobility in cervical and thoracolumbar spine. He had history of CAD and presently was not on any medication for the same. On respiratory examination he had decreased air entry and chest X-Ray features (Fig.1, 2) suggested COPD along with right sided pleural effusion. He was advised nebulization for the same. His hematological and biochemical parameters were within normal range.

Airway was anticipated to be difficult as there was lack of extension of cervical spine (Fig.3) and mouth opening was about 2.5 cm. Ideally in such situation difficult airway cart along with flexible fiberoptic bronchoscope should be kept ready, but it was unavailable in our setting.

Written informed consent was obtained for regional anaesthesia including in case of inability to perform spinal anaesthesia the case may have to be abandoned due to unavailability of fiberoptic bronchoscope and ultrasound for the welfare of the patient.



Figure. 1 Lateral X-ray.



Figure. 2 Chest X-ray PA view



Figure. 3 Position of the patient

Lumbar puncture was attempted at L3-L4 level initially via median approach but it failed. Paramedian approach was attempted at same level and it was successful. After free flow of cerebrospinal fluid Inj. Bupivacaine 0.5% heavy 3cc was injected in subarachnoid space. Motor blockade was partial. Sensory blockade was upto T10 level. The patient remained haemodynamically stable intraoperatively. The surgery lasted for one hour. Paracetamol 1gm infusion was given intravenously and patient was stable in postoperative period.

### DISCUSSION

AS is a chronic inflammatory disease of axial skeleton along with costo-vertebra joints. There may be stiffness of axial skeleton with ossification of axial ligaments of sacroiliac joints along with decreased intervertebral spaces.<sup>1</sup> Formation of syndesmophytes between vertebrae result in bamboo spine appearance. These changes make regional as well as general anaesthesia administration difficult.

Regional anaesthesia has many advantages over general

anesthesia but can be difficult in these patients depending upon the severity of the disease. Schelew et al reviewed 80 patients over 10 year period in which they planned spinal for 16 patients in which 10 were successful.<sup>4</sup> Paramedian approach is easier than median due to ossification of interspinous ligament. In our patient median approach of spinal anaesthesia was attempted at L3-L4 level which failed. Then paramedian approach was attempted which was successful.

Spinal anesthesia is mostly the procedure done for patients in peripheral hospitals setting. This is due to unavailability of resources such as adequate manpower for assistance, ultrasound, video laryngoscope and fiberoptic bronchoscope in case of difficult airway.

Therefore, patients on airway assessment having easy intubation and having normal intervertebral spaces are mostly kept for surgery with ASA I or II status. But sometimes there are patients having anticipated difficult airway or difficult spinal but refuse to go to a higher centre. Hence judging the pros and cons of the procedure the patient can be taken after taking informed consent related to the procedure and also that the surgery can be cancelled in case of difficulty for the well being of the patient.

In case of anticipated difficult airway like our patient had AS, spinal anaesthesia becomes the procedure of choice. Spinal anesthesia is also procedure of choice where there is lack of basic manpower and resources.

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