



SEVERE ANKYLOSING SPONDYLITIS POSTED FOR FUNCTIONAL ENDOSCOPIC SINUS SURGERY- A CASE REPORT

Dr. Jaya Hasita

Junior Resident

Dr. Bhagya Vardhan*

Assistant Professor *Corresponding Author

KEYWORDS :

INTRODUCTION

Ankylosing spondylitis is a disease characterized by inflammation and fusion of the sacro-iliac joint and lumbar vertebrae with involvement of the thoracic and cervical spine. It is commonest in males with a high proportion carrying tissue type antigen HLA B27. The manifestations include backache and stiffness with the possibilities of spinal cord compression, atlantoaxial subluxation or cervical fracture. Spinal and extradural anaesthesia are usually technically difficult. Tracheal intubation may be difficult due to a stiff or rigid neck or temporomandibular joint (TMJ) involvement. If thoracic or costovertebral joints are severely affected it results in restricted ventilation. This case report details the problems faced by the anaesthesiologist in positioning the patient and how difficult intubation was overcome without using the fiberoptic means for intubating, which had been kept as a last resort.

CASE REPORT

A 43 year-old male patient presented with history of recurrent upper respiratory tract infections, post nasal drip and nasal congestion intermittently for the past 1 year. The patient had a history of cervical and thoraco-lumbar spondylitis since 12 years, with inability to bend forwards or side ways since 5 years. Since 3 years he could get some pain relief with non-steroidal anti-inflammatory drugs. His mother and sister too gave history of ankylosing spondylitis. The patient had a cautious and antalgic gait (ambulation with crutches) with a fixed flexion deformity of 30 degrees of both hip joints. Movements of spine were restricted and painful. Neck movements were restricted and he was unable to extend, flex or rotate the neck, he had kyphosis of the thoracolumbar spine, he could barely sit on the edge of the bed with the support of both his upper limbs. He took the help of 4-5 pillows to support his neck and cervical spines, if he needed to get to the supine position. His airway assessment showed restricted mouth opening of 3 cms with ankylosis of temporomandibular joint and a Mallampatti grade 3 score. His pulse rate was 86 beats per minute and BP was 140/90 mm of Hg. X-ray showed cervical spondylitis, kyphosis of the thoracolumbar spine, total ankylosis of spine along with ankylosis of both hip joints. His pulmonary function tests showed mild restrictive airway disease. Other investigations like haemogram, blood sugars and ECG were within normal limits. Equipment to assist or maintain airway was immediately available. A difficult intubation cart which had a selection of oropharyngeal airway, nasopharyngeal airway, gum elastic bougie, laryngeal mask airway, fiberoptic laryngoscope, cricothyroidotomy needle and surgical set for tracheostomy, was kept ready.

The patient was shifted to O.T. on a trolley in supine position with 5 pillows under the back and head and two pillows under the knee joint. The patient was put back to supine position with all 5 pillows. To be able to perform laryngoscopy, the anaesthesiologist had to stand on a big foot stool so as to get the position directly above the patient's face. Pre oxygenation was done for 3 min with 100% O₂ after pre medication with fentanyl 30 mcg and glycopyrrolate 0.2 mg. Induction was done with Propofol 2mg.kg-1 and 1mg.kg-1 succinylcholine was given after confirming the possibility of adequate mask ventilation. One assistant stabilized the head so that undue manipulation of the head and neck was avoided. Fiberoptic guided oral intubation was done with 7.0 internal diameter endotracheal tube was successful, without the SpO₂ dropping below 96%. Bilateral air entry was equal and was confirmed by capnography. Patient was maintained on N₂O and O₂ with controlled ventilation and vecuronium, fentanyl 40 mcg and midazolam 1mg were administered. During the 90 minutes

procedure patient received 1000 ml of Ringer lactate. Blood loss was minimal. After reversal with neostigmine 2.5 mg and atropine 1.2 mg patient was extubated after suctioning the oral cavity under direct laryngoscopy and assuring that patient maintained 99% saturation on room air. The patient's post operative course was unremarkable.

DISCUSSION

Ankylosing spondylitis (AS) is a disease that may deform any portion of the spine and may be encountered in patients who present for corrective surgery of the hips or knees. The uniform development of widespread annular fibrous ossification and the formation of bony bridges (syndesmophytes) are largely responsible for the classic radiographic appearance of the "bamboo spine" of end-stage ankylosing spondylitis. The closely applied posterior longitudinal ligament and more remote interspinous ligaments may become converted to continuous bony bars, augmenting the spinal rigidity. These pathological changes can make airway management difficult. The aetiology of AS is unknown but numerous bacteria and viruses have been blamed for inducing disease in genetically susceptible individuals. A strong association has been found between a genetic marker HLAB27 and AS. The incidence of HLA-B27 is less than one percent in general population whereas it is present in more than 85% of patients with AS. The diagnosis of AS is made clinically according to accepted criteria. A small proportion of sufferers develop complete spinal ankylosis with or without extraarticular complications. There is restricted movement of the costovertebral joints, which reduces vital capacity and ventilation becomes progressively dependent on diaphragmatic function. This results in a death rate from respiratory causes 2.5 to 3 times higher than normal. Stiffness of the cervical spine, atlanto-occipital, temporomandibular and cricoarytenoid joints may cause problems with tracheal intubation. The identification of a patient at an increased risk of complications, because of problems in the maintenance of the airway, requires discussion with the patient regarding the options for airway management. A patient who is likely to have upper airway problems immediately after loss of consciousness requires an anaesthetic plan in which tracheal intubation is accomplished before anaesthetic induction or immediately after an expeditious induction. It is believed that the patency of airway is surprisingly well maintained despite the loss of bony mobility and most peripheral procedures, for example on the limbs, are carried out without tracheal intubation. The degree of difficulty in maintaining the airway, either by mask, laryngeal mask airway or by tracheal intubation under direct vision, can range from none to impossible. The difficulty for each technique may be independent, and may change with time. Difficulty in managing the airway is the single most important cause of major anaesthesia-related morbidity and mortality. Whatever technique is selected, the airway must be managed in such a way that it is continuously patent. Various techniques and algorithms for airway management have been published, but there will still be occasions where anaesthetists are faced with failure to secure the airway, for reasons such as those highlighted above. Patients with AS may have cardiac and pulmonary disease and therefore are at increased anaesthetic risk. Most anaesthesia-related problems occur because of difficult tracheal intubation. The management of difficult intubation has been simplified as more experience is gained with fiberoptic technique. A planned and unhurried fiberoptic intubation represents a safe, predictive alternative management strategy for patients with AS. Concern also exists that if the tracheal intubation has been difficult, the extubation may be hazardous.

Management of anaesthesia in patients with ankylosing spondylitis is influenced by the magnitude of upper airway involvement by the disease, the presence of restrictive patterns of breathing due to costochondral rigidity and flexion deformity of the thoracic spine, and the degree of cardiac involvement. Awake fiberoptic tracheal intubation is performed if the spinal column deformity is extensive. Excessive manipulation of the cervical spine could injure the spinal cord. Intra operatively, ventilation of the lungs should be supported, as the chest wall is stiff and breathing is diaphragmatic. Neurologic monitoring should be considered. In conclusion anesthetic considerations for the patient with ankylosing spondylitis include difficulty with positioning, difficult or impossible access to the airway, chronic central neuropathy.

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