Anaesthetic Management For Total Hip Replacement In A Case Of Ankylosing Spondylitis

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Citation

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Abstract

Purpose: Managing a case of severely affected ankylosing spondylitis with limited available facilities, is a great challenge for an anaesthesiologist, as it possess lots of problems inherited to it.

Clinical features: We report a case of total hip replacement in a patient of ankylosing spondylitis with past history of pulmonary koch's, managed in SSG Hospital Baroda which resulted in a successful surgery.

Conclusion: This report throws light on importance of pre-anaesthetic visit for proper counseling of patient, study of anatomical landmark, discussion of anesthetic complications to be faced, importance of indirect laryngoscopy, decision of anaesthetic technique as well as thorough discussion with surgeon to carry out this case successfully.

INTRODUCTION

Ankylosing spondylitis is autoimmune inflammatory arthritic condition of spine and sacroiliac joint. The patients present specific challenges to anaesthetist. Airway management, positioning, neuroxial monitoring as well as management of blood loss may prove to be difficult.

CASE REPORT

A 55 years old male with history of ankylosing spondylitis with past history of pulmonary koch's was posted for right side total hip replacement. He had complaint of inability to walk without any other cardio respiratory complaints. The aim of our preoperative visit was proper counseling of patient and relatives, thorough assessment of airways and back and spine. The physical examination revealed " STOOPED POSTURE" on standing and being comfortable with 3 pillows under head, neck and upper back while sleeping. His vital parameters and systemic examination were within normal limit. Examination of airways revealed mouth with full set of teeth, good mouth opening, restricted neck movement (side to side, flexion and extension – merely 5-10 degree) with normal temporomandibular joint. His Mallampatti grade was II. The thyromental and hyomental distances were within normal limit. Examination of back and spine revealed, loss of lumbar lordosis, bamboo spine, kyphoscoliosis in the cervical and thoracic region with apparently normal intervertebral space.

The investigation revealed

1. Normal haemogram and urine analysis
2. X-ray both hip - osteoarthritic changes, osteophytes with reduced joint space.
3. X-ray cervical spine - loss of cervical lordosis, syndesmophytes in upper 4 vertebrae with ankylosis of apophyseal joints.
4. X-ray lumbosacral spine - degenerative changes with osteophytes.
5. X-ray chest - fibrotic bands in upper lung fields bilaterally suggestive of old healed pulmonary koch's.
6. EKG and other biochemical parameters within normal limit.

Indirect laryngoscopy revealed bilateral mobile vocal cords.

After thorough discussion among ourselves and orthopaedic surgeon, about the potential risks and benefits of general

anaesthesia compared with regional anaesthesia in this case, it was decided to perform the operation under combined spinal epidural anaesthesia.

After proper assessment, we gave fitness for anaesthesia with advices like adequate nil by mouth, Tab Diazepam 5 mg and Tab Ranitidine 150 mg orally on the night before surgery and ENT surgeon stand by for emergency tracheostomy if required while anaesthetizing the patient.

In the morning, high risk informed written consent for anaesthesia was taken. Inj. Pentazocine 30 mg, inj. Promethazine 25 mg and inj. Glycopyrrolate 0.2 mg was given intramuscular one hour preinduction. All the possible gazettes for emergency and difficult intubation with tracheostomy tray, pulse oxymeter, and laryngeal mask airways were kept ready. With outmost gentle and caring hand we transferred the patient to operation theatre and secured two large bore intravenous canula through which patient was pre loaded with 500 ml of compound sodium lactate. Pulse oximeter, ECG electrodes and NIBP were connected. Inj. Ranitidine 50 mg, Inj. Dexamethasone 8 mg and Inj. Chlorphenaramine maleate were injected. Now with extra care, left lateral position was given with proper support of head and neck. Oxygen was delivered through face mask and oxygen saturation was monitored with pulse oximeter. Under all aseptic and antiseptic precaution epidural space was located at a distance of 4 cm in L3-4 intervertebral space with 18G Tuohy needle in two attempts, as we faced a problem of unfavourable positioning due to spondylitis itself. The epidural catheter was then threaded up till 9 cm of length. Through 25G spinal needle, 3cc of Inj. Bupivacaine heavy (0.5%) injected in subarachnoid space at L4-5 interspace. The T10 level of sensory blockade was achieved after turning the patient supine in 10 minutes. After 15 minutes the patient was turned to left lateral position with well supported head and neck. Throughout the surgery the hemodynamic parameters, pulse oximetry and blood loss were assessed. At the time of cementing, inj. Hydrocortisone 200 mg IV was given to prevent anaphylaxis. After 2 hours of spinal drug, a mixture of Inj. Bupivacaine (0.5%) 3 cc and inj. Xylocaine (2%) 3 cc was injected epiduraly in the 3 ½ hours surgery. Surgery was uneventful; the patient was shifted to the recovery room and observed for 4 hours. In the post operative follow up, analgesia was provided with Inj. Tramadol 50 mg 8 hourly through epidural catheter for two days and then after it was removed out. But unfortunately, the patient sat down over toilet chair even after repeated instruction on 3rd post operative day and dislocated hip joint which was replaced under sedation by the same anaesthetist team.

DISCUSSION

Ankylosing spondylitis is a progressive form of autoimmune inflammatory arthritis which leads to spontaneous fusion of vertebrae and sacroiliac joint. It often manifests as low back pain. Patients may develop many problems regarding their spine; like spine fracture even with minimal trauma, kyphotic deformity, poker spine, chest deformity and temporomandibular joint ankylosis. Keeping all these problems in our mind, we handled the patient very gently. As our patient had kyphotic deformity, we faced problem in combined spinal epiqural technique. We started oxygenation to prevent hypoxia due to chest deformity. A common anaesthetic problem in intubation is encountered due to temporomandibular joint ankylosis. A fibreoptic laryngoscope can be used to put the tube down the trachea or in extreme cases tracheostomy is required. As we don't have facilities for fibreoptic laryngoscopy, we kept tracheostomy tray and laryngeal mask airways ready.

We achieved our goal by simple combined spinal epidural technique in spite of all problems and no untoward complication was encountered. In the post operative period pain relief was provided through epidural route.

CONCLUSION

This case report highlights the importance of proper pre anaesthetic assessment, thorough counseling and management of patient and good anaesthetic surgeon co ordination. Keeping in mind the possible complications, we achieved our goal with simple combined spinal epidural technique and routine monitoring devices. The end result of managing such a high risk patient is a result of team work.

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References

1. Anaesthesia and spondylitis: khan & M. A.: spondylitis association of America; 2002
2. Anaesthesia for hip replacement in ankylosing spondylitis: whittman & Ring; Journal of royal society of medicine; 79(8);457-459; 1986.
3. Ankylosing spondylitis; kumar & Mehta ; Canadian journal of anaesthesia;
42; 73 -76; 1995.
4. Ankylosing spondylitis: Penn state orthopaedics 2004
5. Health problems: ankylosing spondylitis internet health diary, march 2001

6. Risk and recommendations in bechtrew disease paraparesis after epidural anaesthesia; Alllen D, Dahlgren, Nellgard; pubmed.
7. Spinal epidural hematoma and ankylosing spondylitis; Hissa E BAY J; pubmed

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