



ANESTHETIC MANAGEMENT OF A PATIENT WITH SEVERE KYPHOSCOLIOSIS POSTED FOR OPEN APPENDICECTOMY

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ABSTRACT

Kyphoscoliosis is due to disruption of balance between structural and dynamic components of neuromuscular elements of spine. Airway management and cardiopulmonary disturbances make general anesthesia complicated and regional anaesthesia is associated with technical difficulty due to abnormal curvature of spine. Here we present a case of 36 years young female (ASA grade 3) with abdominal pain since 3 days associated with vomiting, diagnosed with acute appendicitis successfully managed with spinal anesthesia.

KEYWORDS :

INTRODUCTION:

Kyphoscoliosis^[1] is forward and lateral bending of spine and rotation of vertebrae severity best determined by cobb angle^[2] with >90 degrees develop marked ventilatory abnormality. There will be disruption of balance between structural and dynamic components of neuromuscular elements. Airway management and cardiopulmonary disturbances make general anesthesia complicated and regional anesthesia is associated with technical difficulty due to abnormal curvature of spine. Here we present a case of severe thoracolumbar kyphoscoliosis successfully managed under spinal anesthesia.

Case Report:

A 36years young female (ASA grade 3) of 44kilograms weight presented with chief complaints of abdominal pain since 3 days associated with vomiting, diagnosed with acute appendicitis^[3]. It is a known case of kyphoscoliosis since childhood and has history of polio since 5yrs of age (involving Left upper and lower limbs). Investigations revealed hemoglobin- 12.2gm/dl, WBC -14000, platelets- 2.8lKhs/cumm, 2D ECHO- EF60%, good LV/RV function, X-ray erect abdomen showed gross kyphoscoliosis of thoracolumbar spine. Pulmonary function test^[4] depicted restrictive lung disease^[5] with FEV1 -40%.FVC-52% of the predicted value, FEV1/FVC = 0.904. Plan-regional anaesthesia in v/o restrictive lung disease. All essential monitors connected, large bore IV cannula secured, Preloaded with 300ml ringer lactate. Lumbar puncture with 23 guaze quincke needle tried first in lateral position which was difficult to achieve later changed to sitting position, spine traced from upwards to downwards L3- L4 space identified, after 3 attempts free flow of CSF seen 0.2ml buprenorphine + 10mg bupivacaine given. Level achieved till T6. Spinal anaesthesia related hypotension kept in mind. Adequate level of blockade is achieved by limiting total dose of drug & correct positioning. Hemodynamic parameters monitored and shifted later to postoperative intensive care unit uneventfully.

DISCUSSION:

Kyphoscoliosis produce restrictive type of lung disease, severity determined by cobb angle >60 degrees results in progressive cardiopulmonary failure. Preoperative assessment should focus on cardiovascular, respiratory, neurological impairment due to deformity. Regional anesthesia could be the option in these cases but can be a problem due to distortion of spinous process and rotation of vertebral column making identification of spaced difficult.

Severe kyphoscoliosis associated with decreased CSF volume with hypobaric/rapid an injection of drug causing higher levels of blockade. Whereas hyperbaric bupivacaine provide safe and consistent block.

CONCLUSION:

Use of regional anaesthesia in patients with severe kyphoscoliosis is dilemma and controversial as these patients are associated with functional and respiratory problems. Detailed pre anaesthetic evaluation is imperative. Proper planning of blockade and meticulous approach will result in successful outcome in severe kyphoscoliosis.

REFERENCES:

1. Zhao S, Xue X, Li K, Miao F. Pectus excavatum, kyphoscoliosis associated with thoracolumbar spinal stenosis: a rare case report and literature review. BMC Surg. 2022 Jul 11;22(1):266. doi: 10.1186/s12893-022-01716-7. PMID: 35820858; PMCID: PMC9277827.
2. Jin C, Wang S, Yang G, Li E, Liang Z. A Review of the Methods on Cobb Angle Measurements for Spinal Curvature. Sensors (Basel). 2022 Apr 24;22(9):3258. doi: 10.3390/s22093258. PMID: 35590951; PMCID: PMC9101880.
3. Di Saverio S, Podda M, De Simone B, Ceresoli M, Augustin G, Gori A, Boormeester M, Sartelli M, Coccolini F, Tarasconi A, De' Angelis N, Weber DG, Tolonen M, Birindelli A, Biffi W, Moore EE, Kelly M, Soreide K, Kashuk J, Ten Broek R, Gomes CA, Sugrue M, Davies RJ, Damaskos D, Leppaniemi A, Kirkpatrick A, Peitzman AB, Fraga GP, Maier RV, Coimbra R, Chiarugi M, Sganga G, Pisanu A, De' Angelis GL, Tan E, Van Goor H, Pata F, Di Carlo I, Chiara O, Litvin A, Campanile FC, Sakakushev B, Tomadze G, Demetashvili Z, Latifi R, Abu-Zidan F, Romeo O, Segovia-Lohse H, Baiocchi G, Costa D, Rizoli S, Balogh ZJ, Bendinelli C, Scalea T, Ivatury R, Velmahos G, Andersson R, Kluger Y, Ansaloni L, Catena F. Diagnosis and treatment of acute appendicitis: 2020 update of the WSES Jerusalem guidelines. World J Emerg Surg. 2020 Apr 15;15(1):27. doi: 10.1186/s13017-020-00306-3. PMID: 32295644; PMCID: PMC7386163.
4. Lao L, Weng X, Qiu G, Shen J. The role of preoperative pulmonary function tests in the surgical treatment of extremely severe scoliosis. J Orthop Surg Res. 2013 Sep 5;8:32. doi: 10.1186/1749-799X-8-32. PMID: 24007407; PMCID: PMC3844393.
5. Seif NE, Elbadawy AM. Comparative study of mid-thoracic spinal versus epidural anesthesia for open nephrectomy in patients with obstructive/restrictive lung disease: A randomized controlled study. Saudi J Anaesth. 2019 Jan-Mar;13(1):52-59. doi: 10.4103/sja.SJA_415_18. Retraction in: Saudi J Anaesth. 2019 Oct-Dec;13(4):402. PMID: 30692889; PMCID: PMC6329241.