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Anesthetic Considerations in a Patient with Ankylosing Spondylitis

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This is a case of a 69 year old male with past medication history of diabetes mellitus, cerebral vascular accident, anxiety, seizures, and hypertension who was transferred from an outside hospital for management of small bowel obstruction that required exploratory laparotomy. The patient denied any history of surgical manipulation near the head or neck, radiation to the head or neck, or any congenital syndrome.

Additionally, the patient had long-standing limited neck range of motion with inability to move his neck in any plane. When the patient drives, his wife must look for him during turns and backing up. He was also excused from full service duties in the Navy due to having a single neck bone. On exam he had a normal mouth opening, Mallampati II airway, 2 cm thyromental distance and minimal neck range of motion.

The patient was induced with 2 mg of midazolam, 75 mcg of fentanyl, 100 mg lidocaine, 90 mg of propofol in divided doses, 10 mg of etomidate, 120 mg of succinylcholine with a 5 mg defasiculating dose of rocuronium. The patient was easily ventilated. Video laryngoscopy gave only a Cormack and Lehane grade 4 view. Given that the patient was an easy ventilation, rocuronium 45 mg was given. A size 5 intubating LMA was placed with adequate tidal volumes and minimal manipulation of the neck. A bronchoscope was then passed through the intubating LMA. The carina was visualized and a size 5 endotracheal tube was passed over the bronchoscope. An endotracheal tube exchange catheter was then used to exchange for a size 7 endotracheal tube.

The patient successfully underwent a small bowel resection and umbilical hernia repair, recovering post operatively in the surgical intensive care unit. Cervical spine
anteroposterior and lateral films showed bridging anterior osteophytes with partial fusion of the vertebral bodies and facets consistent with ankylosing spondylitis with loss of cervical lordosis.

The anesthetic approach to the patient with ankylosing spondylitis from intubation to intraoperative management presents a host of considerations. It is a rare disorder with prevalence of 0.1%, affects males three times as often as women, and predominantly affects the hip, shoulder and knee thought 85-90% of patients also have axial involvement (1). Ankylosing spondylitis is associated with familial clustering with strong linkage to HLA-B27 tissue antigen (2,3,4). Cardiac manifestations including first degree atrioventricular block and more rarely aortic regurgitation. (5,6,7,8).

These patients can also develop restrictive lung function associated with flexion deformity of the thoracic spine and costochondral rigidity (9,10). Pertinent neurological findings can include spontaneous atlantoaxial subluxation, spinal cord compression, cauda equina syndrome, nerve root lesion, and vertebrobasilar insufficiency (1, 11, 12, 13). Finally in terms of the airway AS is associated with ankylosis of the cervical spine, temporomandibular joint, and cricoarytenoid arthritis (14,15). Additionally, decreased neck flexibility can increase risk of spine fracture especially the lower cervical spine at C5-C6 and C6 - C7 (ibid). Over time the cervical spine loses extension with eventual development of fixed cervical kyphosis (1).

We have demonstrated successful airway management of a patient with uncontrolled ankylosing spondylitis who was successfully intubated using an intubating laryngeal mask. Advantages of this approach include minimal neck movement in placing the intubating laryngeal mask, maintaining ability to ventilate whilst guiding the fiberoptic scope to glottis.

Sources:


