Clinical Integration of Osteopathic Manipulative Medicine

Surgery – Post-Operative Atelectasis

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Intro: Atelectasis is the partial or complete collapse of the lung(s). Atelectasis is one of the most common post-operative pulmonary complications, most often resulting from abdominal and thoraco-abdominal procedures. It usually results from decreased compliance of lung tissue, decreased ventilation, retained airway secretions and post-operative discomfort that prevents physiologic breathing and coughing. Retained airway secretions may be due to long-standing chronic obstructive pulmonary disease, intubation, or anesthetic agents.

Patient presentations:

• Asymptomatic
• Fever (MC cause of fever post-operatively within a 48 hour window)
• Increased work of breathing, resulting in tachypnea and tachycardia
• Hypoxemia
• Elevation of the diaphragm
• Scattered rales
• Decreased breath sounds

Differential Diagnoses

• Pneumonia
• Pulmonary embolism
• Mechanical small bowel obstruction
• Acute colonic pseudo-obstruction (Ogilvie’s syndrome)

Clinical Pearls/Caveats

• You can help to prevent postoperative atelectasis with early mobilization, frequent changes in position, encouragement to cough and the use of incentive spirometer

• Chest physiotherapy (i.e. postural drainage and percussion) and suctioning can help treat patients with secretions
For patients without secretions, continuous positive airway pressure (CPAP) may be beneficial.

**OMM Integration:** In a study done by Sleszynski and Kelso, patients receiving thoracic lymphatic pump was equally effective as incentive spirometry in preventing postoperative atelectasis (both groups only had 5% rate). Thoracic lymphatic pump also showed an earlier recovery and quicker return toward preoperative values for FVC and FEV1 compared to the spirometry group. Osteopathic treatment is aimed at improving thoracic cage excursion and decreasing lymphatic congestion.

**Osteopathic Structural Examination:**
- Cervical spine
- Thoracic spine
- Ribs
- Diaphragm
- Lumbar spine
- Sacrum
- Pelvis
- Thoracic duct

**Possible treatments options:**
- Rib raising
- Rib muscle energy
- First rib release
- Myofascial to the cervical, thoracic and lumbar region
- Sacral Rock
- Thoracic outlet release
- Lymphatic pumps (thoracic and pedal)
- Diaphragm doming
- Sternal release

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