**Surgical Indications Rib Fracture Fixation**

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**I.** INDICATIONS

Despite a growing amount of evidence strengthening surgical indications, rib fracture fixation is considered to be a relative indication. There are no absolute indications for surgical fixation of ribs.

**A.** Flail Chest (2-7, 9-15,25)

**i.** Most common indication for surgery, and considered to be a strong relative indication.

**ii.** Specific clinical factors associated with a flail chest strengthen the indication for surgery

**B.** Chest Wall Deformity (1,14,16,25)

**i.** Can cause significant loss of thoracic volume

**ii.** Can be a severe impediment to lung expansion

**C.** Concomitant Operative Thoracic Injuries (1,25)

**i.** Displaced ribs and thoracic trauma can cause injuries requiring operative intervention

**ii.** These patients are considered operative candidates for rib fracture fixation in conjunction with or after the pulmonary procedure under the same anesthetic

**D.** Symptomatic Nonunion or Malunion (1,17,25)

**i.** Upper extremity or chest wall motion in this setting may cause symptomatic complaints

 **ii.** Surgical stabilization can lead to symptom resolution

 **E.** Pain and Disability (1,2,8,9,12,18-21,25)

 **i.** Considered to be a relative indication if prevents:

**a.** Mobilization

**b.** Respiratory effort

**ii.** Yet to be definitively demonstrated as an indication in the literature

**II.**  CONTRAINDICATIONS

1. Pulmonary Contusion (3,4,22,25)
2. Originally considered a contraindication
3. More recent literature brings this assumption into question (3,24)
4. Severe Head injury (23)
5. Some authors operative protocols consider this to be a contraindication

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