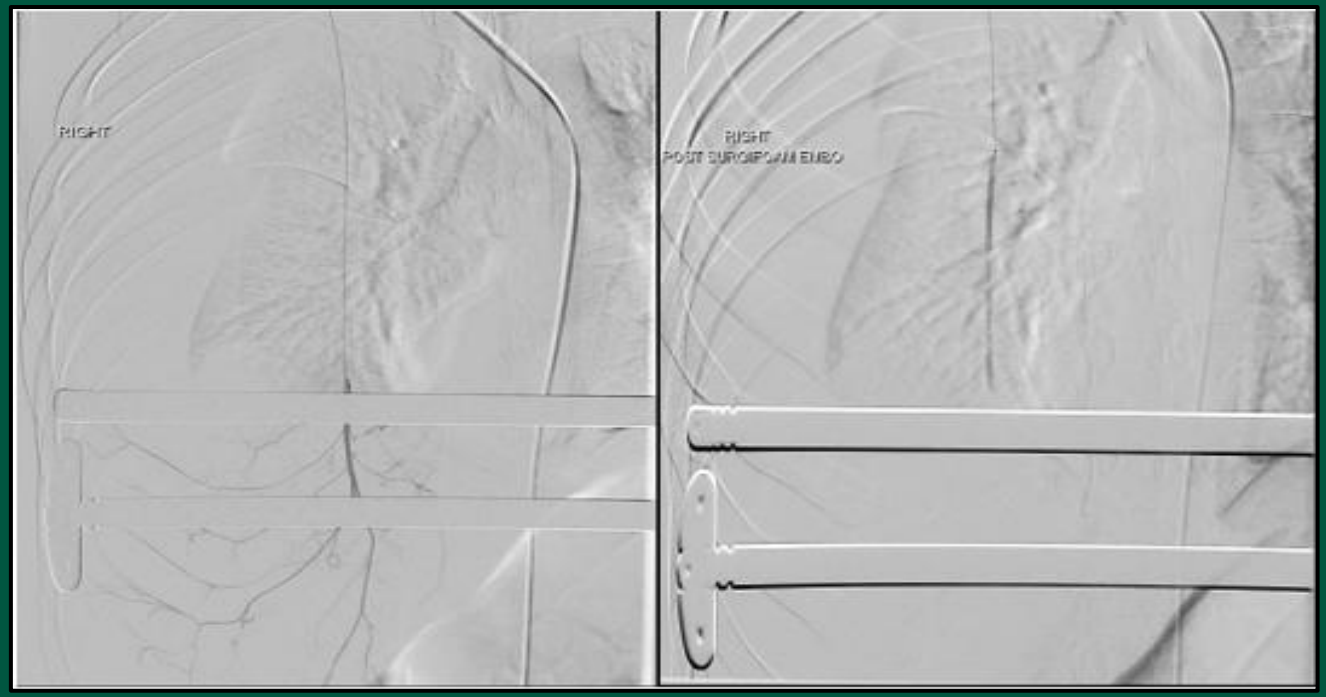
Management Of Internal Mammary Artery Injuries Associated with the Nuss Procedure

WE Briscoe MD[1], VP Miles MD[1] B Byers NPNP-AC[1], M Rippy BS[2], LA Smith MD[1]
[1]University of Tennessee College of Medicine, Department of Surgery
[2]University of Tennessee at Chattanooga

Background

- Pectus excavatum occurs in 1 in 400 live births
- Minimally invasive repair of pectus excavatum (MIRPE), or Nuss procedure, is the gold standard technique
- Overall complication rate of 2-27%
  - Severe complication rate of 0.1%
- Presented are 3 cases of internal mammary artery injury and management strategies



Outcomes

- All three patients underwent thoracostomy tube placement at the time of intervention
- All were discharged home after thoracostomy tube removal without complication.
- Nuss bars were removed on all patients at a 3–4-year interval without difficulty.

Patient 1

- 18-year-old male with large right hemothorax and decrease in hemoglobin on postoperative day 1
- Taken urgently to the OR for thoracoscopic re-exploration with ligation of right internal mammary artery (RIMA)

Patient 2

- 18-year-old male with tachycardia, drop in hemoglobin, and right hemothorax on postoperative day 3
- Taken urgently to the OR for re-exploration with no identifiable bleed
- Taken to interventional radiology (IR) suite with angioembolization of RIMA

Patient 3

- 14-year-old male underwent uneventful MIRPE
- Presented 2 years later after “pop” felt in chest during exercise
- Tachycardia and right hemothorax
- Taken to IR suite with angioembolization of RIMA (Figure)

Conclusions

- Despite the reported safety of MIRPE, complications arise which may require intervention
- Injury to the internal mammary artery should be included in the differential for any MIRPE patient presenting with a hemothorax