Cardiovascular Collapse with Attempted Pericardial Drain Withdrawal
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Introduction
• Cardiac tamponade is an excess collection of fluid in the pericardial sac which leads to cardiac depression.
• Cardiac tamponade is a rare but serious emergency in the pediatric population.
• Children are less tolerant of the decreased stroke volume that results making the elimination of fluid even more urgent.

Case Presentation
• A 4 year-old female with a complicated medical history presented to an outside emergency department for seizure-like activity and fever.
• She was found to be in distress, tachycardic, tachypneic, and transferred to our facility. On arrival cardiomegaly was identified on CXR.
• A TTE showed a moderate circumferential pericardial effusion with diastolic right atrial collapse suggestive of tamponade physiology.
• The patient was taken to the catheterization laboratory and a pericardial drain was placed. 220 ml of serosanguineous fluid was drained
• After 2 days, the patient stabilized and the cardiologist attempted removal at the patient’s bedside.
• The patient had a sudden decrease in respirations and became bradyocardic. CPR was initiated.
• The patient began breathing spontaneously with a palpable pulse.
• The patient was transferred to the OR, intubated, and an additional IV and arterial line were inserted.
• After another attempt, the patient became hypotensive and bradyocardic.
• External cardiac compressions were initiated and the patient stabilized.
• Sternotomy was done and the catheter was found to course around the pulmonary artery.
• Traction on the catheter resulted in complete occlusion of main pulmonary artery and severe reduction in pulmonary blood flow.
• The drain was removed surgically.

Discussion
• Complications from pericardial drains are fortunately rare.
• Four cases of pericardial drain complications were identified in the literature.
• To prevent these complications, excess insertion of drainage catheter should be avoided.
• If any resistance is met with blind withdrawal, fluoroscopy may aid in removal.
• The decision to transfer to the OR for further management of the drain was the right one. A patient in the OR, intubated, and under general anesthesia is in a much more controlled setting.
• There was adequate IV access and monitors. Resuscitation equipment was readily available.
• Reviewing the case, it would have been wise to obtain more information before the second blind removal attempt.
• Since the TTE was inconclusive, evaluating the drain under fluoroscopy would be another option.
• As anesthesia providers, we anticipate problems and play an important role in communicating and working with the surgeon to direct the next step in care, particularly in critical situations.

References