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Take a Stab at It! Percutaneous drainage via normal variant sternal foramen

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Background

Our patient was an 81 year-old female with a longstanding history of dysphagia requiring multiple dilations, GERD, Barrett's esophagus and a hiatal hernia who presented to an OSH with abdominal pain and nausea. She subsequently developed respiratory distress and hypotension requiring intubation, pressor support and placement of right-sided chest tube for hydropneumothorax. She was transferred to our facility for escalation of care. An EGD revealed a large distal esophageal perforation for which a fully covered metal stent was placed. CT Thorax showed a 10 x 7 x 5 cm right-sided mediastinal fluid collection.

Interventional Radiology was consulted for placement of a mediastinal drain.

Diagnostic CT

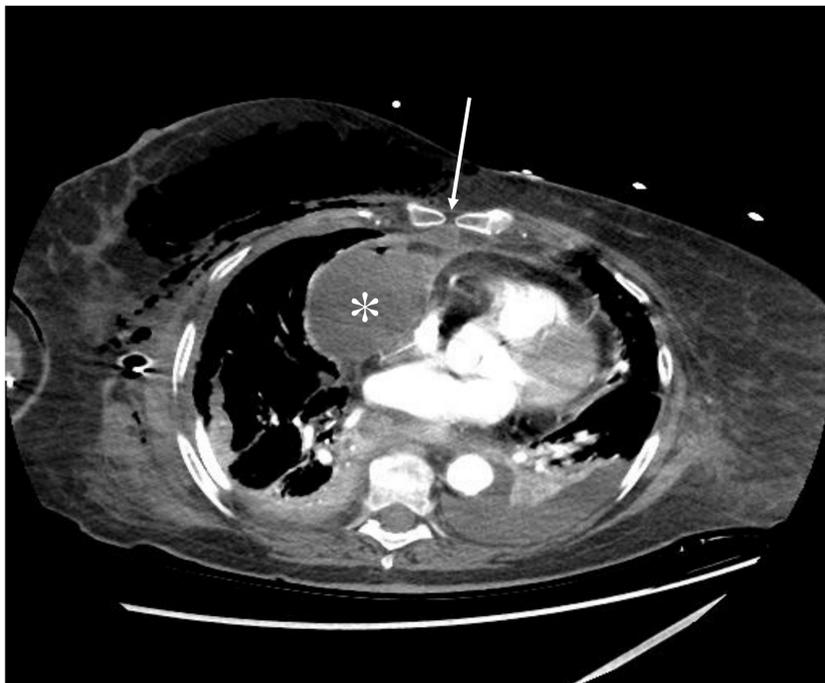


Figure 1. Diagnostic CT showing right-sided mediastinal fluid collection (*) and a sternal foramen (arrow)

Procedural images

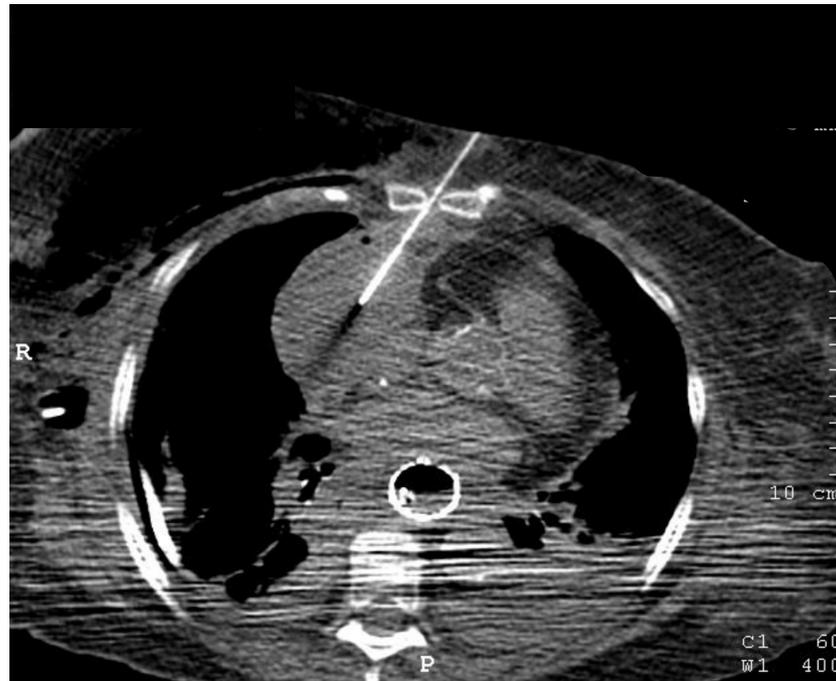


Figure 2. Introducer (5-FR) traversing the sternal foramen.

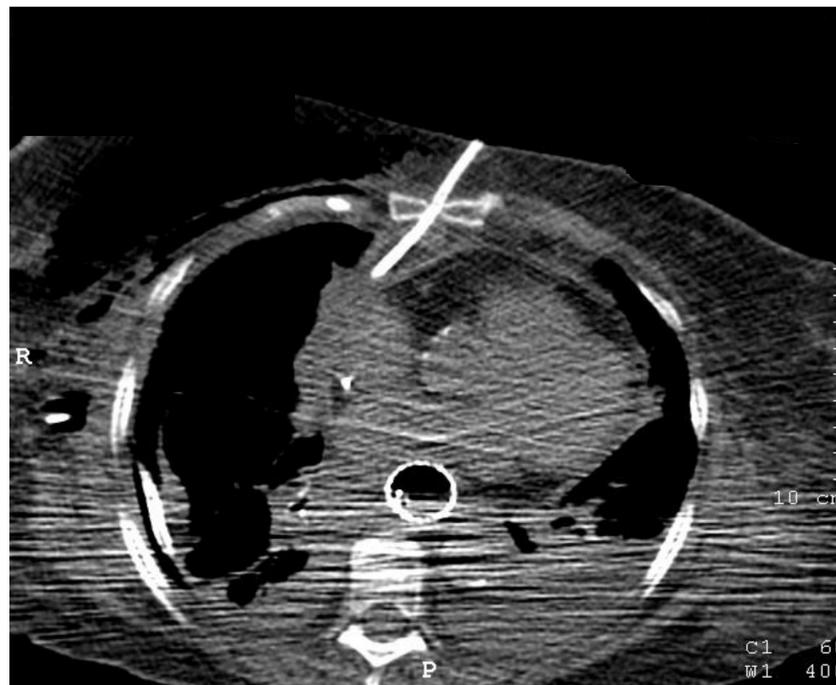


Figure 3. Catheter (10-FR) traversing the sternal foramen after aspiration of the collection. Distal portion of the catheter is out of the image plane.

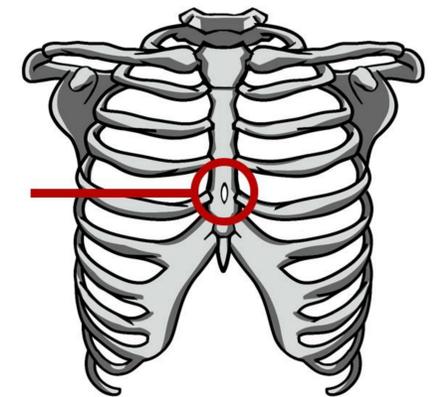
Technique

Utilizing Selindinger technique, a 10-Fr drainage catheter was successfully placed through the sternal foramen and into the mediastinal fluid collection, the fluid collection was aspirated with resolution of mass effect on the heart.

In this case, the sternal foramen allowed safe percutaneous drainage of the mediastinal fluid collection, avoiding risk of injury to the internal mammary vessels or intervening lung parenchyma which could have occurred with a parasternal approach.

Anatomy

A sternal foramen is a developmental variant of the sternum that is present in approximately 5% of the population and results from incomplete fusion of the sternal ossification centers. The sternal foramen when present is usually in the inferior aspect of the sternal body and its diameter can vary in size from 2 – 22mm with a mean of approximately 6mm.



References

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