

Peritopericardial herniation months following subxiphoid pericardial window placement



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Introduction:

Pericardial window placement is a surgical technique commonly used for treatment of recurrent pericardial effusions or tamponade. (1) The surgical approach has two main techniques, subxiphoid vs thoracostomy approach with neither determined to be superior. (1). However, with the placement of a hole in the diaphragm with the subxiphoid technique, herniation into the pericardium has been reported but rare. (2-6). In this case the patient had a subxiphoid pericardial window that resulted in herniation of the small bowel into the pericardial cavity.

Case Report:

70-year-old female with history of metastatic breast cancer, presented in March of 2020 with a large pericardial effusion leading to impending cardiac tamponade. She was urgently taken to the operating room with subxiphoid pericardial window performed. Many months later she re-presented to outside emergency room after five days of nausea, vomiting, abdomen pain, and inability to keep food down. CT scan at outside facility showed that the small bowel had herniated through her window and into her pericardium. She was then transferred to medical center Bowling Green for thoracic surgery evaluation. When patient arrived at our facility, she was hemodynamically stable with just signs of dehydration and acute kidney injury. After fluid administration she was taken by the general and cardiothoracic surgeons for successful repair of her peritopericardial herniation. Intraoperatively the diaphragmatic deficit was measured to be 3.5x3cm in size with no small bowel found to be ischemic or compromised. The diaphragmatic deficit was successfully repaired with no bowel needing resection. Following this the patient was quickly able to leave the hospital with no complications.



Figure 1 showing the small bowel entering the pericardial cavity



Figure 2 showing the small bowel adjacent to the heart in the pericardium



Figure 3 showing the small bowel nearly encasing the heart within the pericardium

Discussion:

Peritopericardial herniation is a rare occurrence that has been reported in the subxiphoid approach to pericardial effusion and tamponade repairs. (1) In literature review it was more common to see these herniations after traumatic injury to the diaphragm or in congenital abnormalities, neither of which our patient had. (2) When our patient was able to be taken to the operating room it was surprising that over half of the small intestine was in the pericardial cavity. Even more surprising was that no bowel was strangulated or necrotic at time of surgery. Our surgical team felt all bowel looked healthy and none needed to be removed. Typical presenting symptoms are abdominal symptoms and complaints of shortness of breath. Our patient only presented with abdominal symptoms and no complaints of shortness of breath. This prompted the abdomen CT scan which was ultimately able to diagnose this defect. These defects are typically able to be seen on either chest CT, chest X ray if lateral view is obtained, or upper GI series. (1) In repair of these deficits two approaches are possible. A thoracic or abdominal approach. The abdominal approach was taken by our surgeons because of the size of the deficit. Due to the size of the diaphragmatic deficit that allowed such a large amount of small bowel into the chest, patching of the diaphragm was performed. Ultimately the patient had no significant complications and was able to return home in roughly 7 days following surgery.

Conclusion:

Peritopericardial herniation is a complication that rarely happens in humans (1). It is more commonly seen due to congenital abnormalities or trauma to the diaphragm. (1) However, in our case following a subxiphoid pericardial window half of small bowel was able to herniate into the pericardial cavity. This was successfully repaired with no bowel resection required and the patient was able to return home after successful patching of the diaphragm.

References:

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