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### An Unusual ED Case: Cardiac Tamponade Presenting as Hiccups

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# An Unusual ED Case: Cardiac Tamponade Presenting as Hiccups

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## Abstract:

Cardiac tamponade is an emergent life threatening condition that depending on cause can quickly progress to death. The rate of accumulation of a pericardial effusion often can determine the clinical severity. Typically shortness of breath and hypotension manifest, however in this unusual case, the initial presenting complaint was persistent hiccups.

## Introduction:

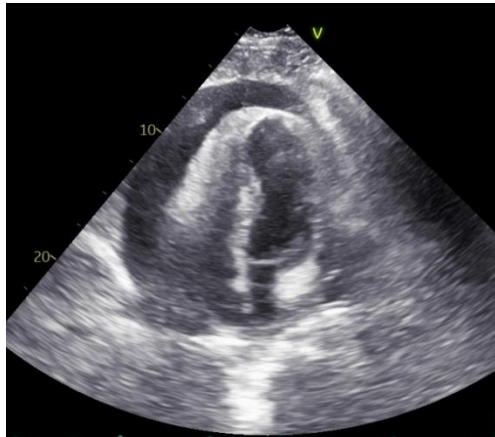
Cardiac Tamponade is a physiology defined by the progression of pericardial fluid to where it impedes on cardiac function. The pericardial fluid pressure provides an opposing force that limits right ventricular diastolic function effectively decreasing right ventricular preload. This results in the classic signs of Becks Triad (sinus tachycardia, elevated jugular venous pressure, and hypotension). This case is of a 62 year old male who presented specifically for the complaint of hiccups, and additional history increased our suspicion for a more insidious process.

## Case Presentation:

A 62 year old male presented to the emergency department with chief complaint of a 4 day history of persistent hiccups occurring every minute, making it difficult for him to sleep. He denied any inciting event and reported trying several home remedies. He additionally reported over the past day feeling mild gradual onset shortness of breath and felt lightheaded intermittently. He denied fever, chills, cough, congestion, chest pain, abdominal pain, nausea, vomiting, diarrhea, syncope, focal weakness or numbness, headache. Patient denied any medical history however chart review revealed "aortic root dilation" as a diagnoses. He had no pertinent surgical history, allergies, or medications. Exam of the patient revealed vital signs as follows: HR 104, BP 108/62, RR 18, Temp 97.4, SPO2 99% on RA. Physical exam revealed a non-toxic appearing white male in no apparent distress. Pertinent exam findings included no JVD, muffled heart sounds, clear lung fields, no edema. The patient was initially evaluated with and EKG which showed normal sinus rhythm without any concerning findings. He was then evaluated with a portable chest x-ray and bloodwork including CBC, CMP, PT-INR, Troponin. Portable chest XR revealed a widened mediastinum with mild pulmonary vascular congestion, small right pleural effusion, cardiomegaly and prominence of superior mediastinum. CXR findings are displayed in Figure 1.



**Figure 1:** Portable CXR revealing widened mediastinum, small pleural effusion, mild pulmonary vascular congestion



**Figure 2:** Echocardiography revealing pericardial effusion with tamponade physiology

## Case Presentation continued:

Labwork was found to have pertinent positives of an elevated BUN/Creatinine of 101/2.15 with normal prior values. Other pertinent values included Na 127 and High sensitivity Troponin I of 9.0. Decision was made to obtain a CT Angiogram dissection study with IV contrast given abnormal CXR findings and history. Patient was found to have large pericardial fluid and no evidence of dissection. Bedside ultrasound was performed by ER physician revealing pericardial effusion with tamponade physiology. A formal echo was ordered as seen in Figure 2. Repeat EKG was performed showing electrical alternans. Patient also progressed to having increased respiratory distress and hypotension which corrected with normal saline bolus. Consultation was obtained from cardiothoracic surgery, cardiology, and pulmonary critical care who accepted the patient to ICU and performed a pericardiocentesis. 600 ml of dark red blood was removed and 200 mL of additional serosanguinous fluid drained within the next day. Fluid cytology revealed keratinized squamous cell carcinoma, and patient underwent a malignancy evaluation that revealed a distant history of a GIST tumor that may be recurrent.

## Discussion:

Hiccups are generally believed to be a result of phrenic nerve irritation. Persistent singultus in the past has even had experimental treatments utilizing phrenic nerve stimulator. Unlike other patients during which hiccups may be a benign condition without apparent cause, in this case persistent hiccups was the presenting chief complaint. In the event that this patient had presented on day one or two of his singultus, his additional symptoms and clinical findings had not yet manifested and his developing pericardial effusion could have been missed on a routine workup. This patient potentially could have had relief with medications such as Chlorpromazine or Metaclopramide and potentially masked the serious underlying physiology presented in this case.

## Conclusions:

Singultus is often thought as a benign condition in the emergency department and in general is not considered a red-flag symptom. However adequate history and evaluation needs to be performed to evaluate for persistent symptoms as dangerous underlying etiologies including pericardial effusion and tamponade may result in phrenic nerve irritation.

## References:

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