

## Introduction

While Influenza is a disease mainly associated with the respiratory system, it can also cause a variety of severe extra-pulmonary complications. Of these complications, cardiac manifestations are known to increase morbidity and mortality. This case describes the occurrence of a pericardial effusion and cardiac tamponade due to Influenza A.

## Case Description

46-year-old female with diabetes mellitus type 2, hypothyroidism, renal failure with new onset hemodialysis and recent hospitalization for drug induced liver injury presented febrile, hypoxic and altered. Labs were significant for a total bilirubin of 15, alkaline phosphatase of 1016, AST of 39, ALT of 16, ammonia level of 81, and leukocytosis of 13. EKG demonstrated sinus tachycardia and low voltage. Patient was intubated due to altered mentation and subsequently suffered PEA arrest twice. Bedside ultrasound showed a large pericardial effusion and pericardiocentesis removed 500 cc of blood tinged serosanguinous fluid. Physical exam did not demonstrate findings concerning for cardiac tamponade. Hemodynamic stability was achieved post drainage.

## Workup and Management

- Positive ANA with a titer of 1:160
- Labs not concerning for uremia or hypothyroidism
- No malignancy or trauma prior to PEA arrest
- Influenza A positive
- Pericardial fluid analysis: 40% lymphocytes, 48% neutrophils, 12% monocytes with no malignant cells
- Management: five-day course of Oseltamivir
- Post Oseltamivir and pericardial drain removal 2D echo demonstrated no recurrent effusion
- Patient was successfully discharged

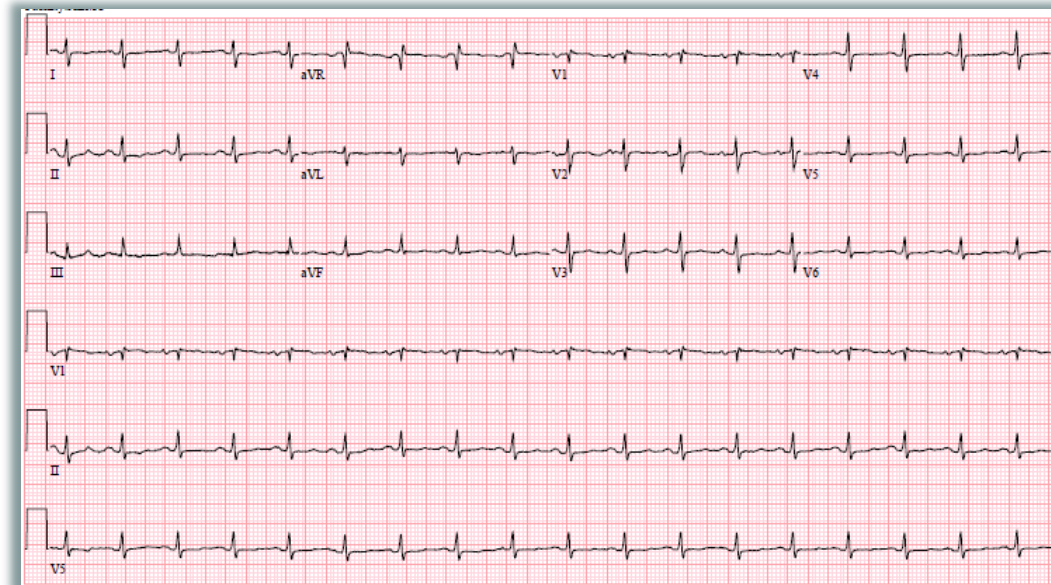


Figure 1: EKG showing low voltage and sinus tachycardia

## Discussion

Myocarditis and pericarditis are considered rare complications of Influenza with only 44 reported cases in recent literature. Pericardial involvement can present in various forms, including pericarditis, pericardial effusion and as in our case, tamponade. In literature review, 30% of these 44 patients had pericardial effusions with only 4 cases reporting tamponade. The mortality rate among these patients was approximately 23% with some requiring advanced cardiac support.

## Conclusion

This pericardial effusion was likely due to Influenza given lymphocytic significance and negative workup. This case highlights the severity of pericardial effusions caused by Influenza and the importance of recognizing this rare complication early. It also emphasizes the importance of bedside ultrasound use in the prompt diagnosis and management of cardiac tamponade.

## References

- Sellers, Subhashini A et al. "The hidden burden of influenza: A review of the extra-pulmonary complications of influenza infection." *Influenza and other respiratory viruses* vol. 11,5 (2017): 372-393. doi:10.1111/irv.12470'
- Pandey, Yadav et al. "Acute Influenza Infection Presenting with Cardiac Tamponade: A Case Report and Review of Literature." *The Permanente journal* vol. 23 (2019): 18-104. doi:10.7812/TPP/18-104