

# A Bad Surprise: Developing Pericardial Effusion Due to Nickel Allergy: A Case Report

Muammer Karakayalı<sup>1</sup>, Hamdi Pusuroglu<sup>2</sup>, MEHMET ERTURK<sup>2</sup>, Ali Demir<sup>2</sup>, and Emre Yılmaz<sup>3</sup>

<sup>1</sup>Kars Harakani State Hospital

<sup>2</sup>Mehmet Akif Ersoy Thoracic and Cardiovascular Research and Education Hospital

<sup>3</sup>Gorele Op. Dr. Ergun Ozdemir State Hospital

November 13, 2020

## Abstract

Nickel allergy was detected in approximately 15% of the population. Despite this rate, very few patients developed symptoms related to nickel allergy after cardiac device insertion. In this case report, pericardial effusion due to nickel allergy that develops after the insertion of Atrial Septal Defect (ASD) device is described. The patient was discharged with ibuprofen. In some cases, dramatic conditions up to the tampon after effusion may develop. These patients responded to high-dose steroid; however, devastating side effects developed. However, more detailed and comprehensive advanced research is needed on this subject.

## TITLE PAGE

### A bad surprise: developing pericardial effusion due to nickel allergy

Muammer Karakayalı<sup>1</sup>, Hamdi Pusuroglu<sup>2</sup>, Mehmet Erturk<sup>2</sup>, Ali Riza Demir<sup>2</sup>, Emre Yılmaz<sup>3</sup>

<sup>1</sup> M.D. Kars Harakani State Hospital, Department of Cardiology, Kars-Turkey.

<sup>2</sup> M.D. Mehmet Akif Ersoy Thoracic and Cardiovascular Research and Education Hospital, Cardiology, Istanbul, Istanbul, TR

<sup>3</sup> M.D. Gorele Op. Dr. Ergun Ozdemir State Hospital, Cardiology, Giresun, Merkez, TR

Corresponding Author:

Dr. Muammer Karakayalı

Kars Harakani State Hospital, Department of Cardiology, Kars-Turkey

Email: muammer-28@hotmail.com

Phone: +905356567912

Declaration of Conflicting Interests: The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article. Funding: The authors received no financial support for the research, authorship, and/or publication of this article.

Acknowledgements:

None.

## ABSTRACT

Nickel allergy was detected in approximately 15% of the population. Despite this rate, very few patients developed symptoms related to nickel allergy after cardiac device insertion. In this case report, pericardial effusion due to nickel allergy that develops after the insertion of Atrial Septal Defect (ASD) device is described. The patient was discharged with ibuprofen. In some cases, dramatic conditions up to the tampon after effusion may develop. These patients responded to high-dose steroid; however, devastating side effects developed. However, more detailed and comprehensive advanced research is needed on this subject.

**1-INTRODUCTION** Nickel allergy was detected in approximately 15% of the population. Despite this rate, very few patients developed symptoms related to nickel allergy after cardiac device insertion. This phenomenon is not clearly understood. However, most authors report that these devices can still be used safely. Most patients present with nonspecific symptoms such as chest pain and palpitations. Amplatzer septal occluder, usually containing nickel from cardiac devices in patients. It responds to anti-inflammatory therapy. In this case presentation, nickel allergy developed after attachment of Atrial Septal Defect (ASD) device; we will describe the diagnosis, follow-up and treatment of the patient with pericardial effusion.

**2-CASE PRESENTATION** A 43-year-old female patient has no known chronic diseases. She has had shortness of breath and fatigue for a long time. The patient who applied to the cardiology outpatient clinic; physical examination FINDINGS: systolic murmur, fixed s2 mating ECG: right bundle branch, laboratory parameters were in the normal range. Echocardiography (ECHO): Ef: 65%, secundum asd (25 mm diameter defect), dilation in the right heart cavities (pasp: 45). Transesophageal echocardiogram (TEE) findings: secundum asd (24 mm defect) (figure 1,2,3). Asd was decided to be closed percutaneously with the device. Device was found to be properly placed. (figure 4,5 ) No pathological transition was observed with TEE. There was no complication. The patient came for control 1 month later. The physical examination findings of the patient were normal. In the control echo there was no transition in the closing device in ias. Pericardial effusion was observed in the posterior wall of 0.4 cm and in the right ventricle, 0.7 cm. In the tee, the effusion was observed next to the right atrium. It was observed that the device did not erode the atrium wall. (figure 6,7). In the control echoes of the patient, it was determined that effusion regressed and there was no deterioration in his clinic. The patient was discharged with ibuprofen 800 mg 1 \* 1.

**3-DISCUSSION AND CONCLUSION** In some cases, dramatic conditions up to the tampon after effusion may develop. These patients responded to high-dose steroid; however, devastating side effects developed (in one case, high-dose steroid-related sepsis and death have been reported). As the current clinical condition of our patient is stable, we did not consider high dose steroid treatment considering the existing side effects. However, more detailed and comprehensive advanced research is needed on this subject.

**Keywords:** Nickel allergy, Atrial septal defect closure device, Amplatzer device

## Hosted file

images 1.pdf available at <https://authorea.com/users/375639/articles/492797-a-bad-suprise-developing-pericardial-effusion-due-to-nickel-allergy-a-case-report>