

Too Late Allergic Reaction in a Patient with Permanent Pacemaker

Kalıcı Kalp Pili Olan Hastada Çok Geç Alerjik Reaksiyon

CASE REPORT OLGU SUNUMU

ABSTRACT

Contact allergy to cardiac implantable electronic devices is a rare problem in patients. Clinical evaluation and patch tests have an important place in its diagnosis. Also in this case, the diagnosis is supported by ultrasonography. It has been reported in the literature that allergic dermatitis developed after permanent pacemaker implantation in the first few days until the current year. In our case report, we showed that the allergic reaction in the patient was too late. In this article, we present a 94-year-old male patient with a permanent pacemaker who came to us with the complaint of redness and itching in the left chest area and was diagnosed with contact allergy.

Keywords: Allergic reaction, contact dermatitis, pacemaker

ÖZET

Kardiyak implante edilebilir elektronik cihazlara karşı gelişen kontakt alerjisi hastalarda nadir görülen bir problemdir. Klinik değerlendirme ve yama testleri tanıyı koymada önemli yere sahiptir. Ayrıca bu olguda tanı ultrasonografi ile desteklenmiştir. Literatürdeki vakalarda kalıcı kalp pili implantasyonu sonrası gelişen alerjik dermatitlerin sıklıkla ilk birkaç gün ile yıl içerisinde olduğu bildirilmiştir. Bizim olgumuzda ise yıllar sonra alerjik reaksiyon geliştiğini gösterdik. Bu yazımızda kalıcı kalp pili bulunan, sol göğüs bölgesinde kızarıklık ve kaşıntı şikayeti ile tarafımıza başvuran kontakt alerji tanısı konulan 94 yaşındaki erkek hastayı sunduk.

Anahtar Kelimeler: Alerjik reaksiyon, kontakt dermatit, kalıcı kalp pili

Contact allergy to cardiac implantable electronic devices (CIED) is a rare but important phenomenon. It can be seen in many different clinics, from simple itching symptoms to the removal of the device. Although clinical evaluation and patch tests have an important place in its diagnosis, laboratory (such as inflammation parameters and culture) and imaging Ultrasonography (USG) methods can also provide support. To date, cases of contact dermatitis to CIEDs have generally developed within the first 1 year after implantation.

In this article, we have presented a case of contact dermatitis that developed too late (3 years) against a cardiac pacemaker and a review of the literature.

Case Report

A 94-year-old male patient was admitted to our emergency department with complaints of redness and itching in the left chest location for 1 week. The patient had a history of permanent pacemaker implantation due to a complete atrioventricular block 15 years ago. There was a history of battery replacement 9 years after the first implantation, and then 3 times pacemaker infection secondary to senile itching. It was learned that the last procedure was performed 3 years ago as a pocket revision and new pacemaker implantation and the battery was taken under the pectoral muscle. Afterward, the patient, who had no problem in the follow-up, was evaluated in the emergency service with his present complaint, and then he was transferred to our cardiology clinic.

On physical examination of the patient, a large, sharply demarcated, erythematous, redness lesion was detected on the area where the permanent pacemaker was

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Figure 1. Late-term allergic reaction image in a patient with a permanent pacemaker.

implanted (Figure 1). There were no signs of abscess, discharge, or fluctuation in the area. The patient's patch test is negative. In a laboratory revealed the following: hemoglobin 13 g/dL (11.7-15.7 g/dL), hematocrit 41%, platelet count 178 000/mm³ (150 000-400 000/mm³), white blood cell 4800/mm³ and C-reactive protein <0.3 mg/dL (0-0.5 mg/dL), normal temperature and negative blood cultures. In the superficial ultrasonography of the patient, an appearance compatible with the foreign body reaction extending along the permanent pacemaker electrode was detected. There was no finding in favor of abscess. Infective pathology was not considered in the patient by the infectious diseases clinic.

Topical 0.1% mometasone furoate was started by the dermatology clinic considering allergic contact dermatitis. After 1 week of topical treatment, the patient's complaints and symptoms resolved (Figure 2) and after a 6-month follow-up, the patient is still asymptomatic (Figure 3).

Discussion

Allergic reactions after permanent pacemaker implantation were first reported by Raque and Goldschmidt in 1970.¹ It has been reported that dermatitis developing after permanent pacemaker implantation is associated with delayed-type hypersensitivity reactions.² These allergic reactions are known to be due to various elements in the permanent pacemaker structure (such as metals, rubber accelerators, and silicone).^{3,4}

The sensitivity of patch testing has been insufficient and a negative patch result has been obtained in half of the reported cases.^{5,6} The negative results will not exclude pacemaker

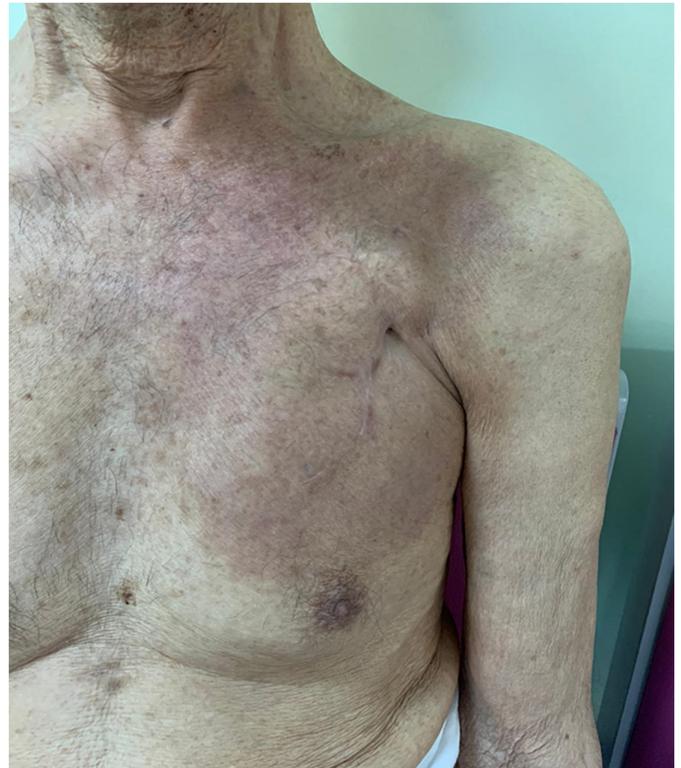


Figure 2. Image of the pacemaker area after topical treatment.



Figure 3. After six month of therapy.

ABBREVIATIONS

- CIED Cardiac implantable electronic devices
- USG Ultrasonography

contact dermatitis.⁷ However, in patients with a positive patch test, detection of the allergen and avoiding it in reimplantation increase the success of the procedure.

In this case, diagnosis is supported by ultrasonography. Ultrasonography has been useful in the evaluation of dermatitis in the literature.⁸

Treatment of contact dermatitis is the elimination of the cause of the allergy. Clinical and laboratory findings are important steps in the diagnosis. Systemic and topical corticosteroids are not used because of long-term adverse effects.⁹ Antihistaminic drugs may also be used for symptomatic relief.

In the cases in the literature, it has been reported that allergic dermatitis developing after permanent pacemaker implantation occurs in the first few days to the current year.^{10,11} In our case, we determined that contact dermatitis developed 3 years later. Contact dermatitis should be considered in the differential diagnosis when we detect itching and redness at the implantation area in patients with a cardiac implanted device, even at a very late period.

Informed Consent: Written informed consent was obtained from the patient for the publication of the case report and the accompanying images.

Peer-review: Externally peer-reviewed.

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