

Nickel-Induced Systemic Contact Dermatitis and Intratubal Implants: The Baboon Syndrome Revisited

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Permanent sterilization using intratubal implants is becoming increasingly popular worldwide. We report the first case of a 40-year-old woman presenting a systemic contact dermatitis due to nickel-containing intratubal implants: the Essure system. The diagnosis was confirmed with positive patch test result for nickel and total clearance of dermatitis after removing the implants that contain a metallic spiral of nitinol (alloy of 55% nickel and 45% titanium). Systemic contact dermatitis to the intratubal implants could be explained by the corrosion of nitinol after implantation resulting in the release of nickel. In the literature, no similar case has been reported despite the introduction of intratubal implants since 2002. Dermatologists and gynecologists need to be aware of this type of complication. In practice, a thorough assessment for possible nickel contact dermatitis in a woman undergoing sterilization with Essure is recommended. Preoperative patch testing must be carried out if there is any doubt.

Permanent sterilization using intratubal implants is becoming popular worldwide.¹ We report the first case of systemic contact dermatitis due to nickel-containing intratubal implants.

OBSERVATION

A 40-year-old woman presented with severe anogenital pruritus appeared 3 weeks before. Clinical examination disclosed a generalized erythematous maculopapular eruption predominantly distributed in the genital and flexural areas (Fig. 1). Topical corticosteroids, oral antihistamines, and systemic corticosteroids provided no relief. Three months before the onset of skin lesions, she underwent a permanent intratubal sterilization with nitinol metallic implants Essure System (Conceptus, Inc, Mountain View, CA). Upon questioning, she described intolerance of jewelry metals since adolescence. The patch tests performed with the standard series were positive to nickel sulfate (1+).

A systemic contact dermatitis to nickel was suspected, and the implants were removed by salpingectomy. Whereas no treatment had been previously effective, 3 days after implants removal, skin



Figure 1. Generalized erythematous maculopapular rash predominantly distributed in the genital and flexural areas.

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One author has financial relationships with Abbott, Amgen, Astellas, Celgene, Janssen-Cilag, Novartis, Pfizer, and Pierre Fabre.

DOI: 10.1097/DER.0b013e31827cd32e

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Figure 2. Essure system: Spread microimplant 4 cm long, alloy of nickel (55%) and titanium (45%) combined with a polyethylene central shank.

lesions were improving with complete resolution in 3 months. We declared this case to the French Agency for Medical Device Safety.

DISCUSSION

Systemic contact dermatitis represents a delayed hypersensitivity reaction to systemic administration of an antigen in a subject who is already sensitized to the same antigen. Initially described as the “baboon syndrome,” it manifests as an acute erythematous eruption electively distributed in the folds and genital regions.²

The Essure system, a new permanent sterilization method, consists in insertion of metallic expansible microimplants by hysteroscopy through the tubal ostia. These microimplants contain a metallic spiral of nitinol (alloy of 55% nickel and 45% titanium) combined with a polyethylene central shank (Fig. 2).

Systemic contact dermatitis to the implants could be explained by the corrosion of nitinol after implantation resulting in the release of nickel into blood.³ Corrosion and even clinical reaction may occur quickly, within days after introduction of the material.^{4–6} No similar case of systemic contact dermatitis to the nickel content of nitinol from Essure has been published despite the introduction of intratubal implants since 2002. However, to our knowledge, the French Agency for Medical Device Safety registered until now 4 cases of allergic manifestations to Essure: 2 reactions attributable to nickel, and 2, no documented. Recently Al-Safi et al⁷ described a case of generalized pruritus without eczema that appeared 3 days after Essure implantation: skin patch testing were positive to nickel, the microinserts were removed, and then the symptoms recovered. On the other hand, a generalized eczematous eruption due to the nickel content of nitinol endovascular prosthesis has already been described 3 weeks after implantation.⁸

Considering the wide use of intratubal implants (>450,000 procedures performed since 2002)¹ and also the high prevalence of female allergic contact dermatitis to nickel,⁹ underreporting may have occurred.

The Food and Drug Administration and the Haute Autorité de Santé have issued recommendations: intratubal implants are contraindicated in case of known nickel hypersensitivity reactions. According to the Food and Drug Administration, patch tests with nickel have to be performed in patients with a history of allergic contact dermatitis to nickel before using implants. According to Haute Autorité de Santé, a thorough questioning is enough.

CONCLUSIONS

We report the first case of nickel-induced systemic contact dermatitis to Essure System intratubal implants. Dermatologists and gynecologists need to be aware of this type of complication. In practice, a thorough assessment for possible nickel contact dermatitis in a woman undergoing sterilization with Essure is recommended. Pre-operative patch testing must be carried out if contact sensitization to nickel is suspected. If nickel contact dermatitis is proven, the use of another sterilization method seems to be advisable.

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