

amination revealed, on sun-exposed areas of the left cheek, neck and nape, erythematous edematous itchy plaques that subsided with corticosteroid therapy.

Once cleared, a photopatch test was done using the GEF (Photodermatology Spanish Group) standard series of allergens, plus meloxicam 1% pet. and fepradinol 1% pet. After 2 days, 1 set of the duplicated patch tests, which were all negative, was irradiated with 10 J/cm² UVA. The unirradiated patch test with fepradinol remained negative at D4, while the irradiated patch test with fepradinol had become positive (+ +).

Discussion

Izu et al. (1) reported the 1st case of contact allergy to fepradinol. Since then, new cases have been described (2–5), without finding cross-reaction with other NSAIDs (1), although Gonzalo & Revenga (6) described multiple sensitization to non-steroidal anti-inflammatory drugs, among them fepradinol. Fepradinol is considered an adrenergic compound (7), due to its structural similarity with other α -adrenergic drugs, but Goday et al. (8) did not find cross-reaction with other phenylethanolamines.

Our patient shows photocontact allergic dermatitis from fepradinol, confirmed by photopatch test. The absence of reaction in the application areas and development of dermatitis on sun-exposed areas suggests transport of the allergen by contaminated hands. To the best

of our knowledge, this is the 1st reported case of photoallergic contact dermatitis from fepradinol.

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The nickel released from jewelry in Israel and its clinical relevance

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The main aim of this study was to measure the amount of nickel released from jewelry available in Israel. We also evaluated the relevance of the results and the relationship between nickel sensitivity, atopy and hand eczema.

Materials and Methods

500 female patients who had been referred to dermatology outpatients, Rabin Medical Center, for any reason, were selected at random and requested to submit all their jewelry for a dimethylglyoxime test (DMT) on site. The reagents used were fresh 1% dimethylglyoxime solution in alcohol and 10% ammonium hydroxide solution in water. Each item was cleaned with 70% alcohol to remove perspiration and dirt. After drying, the DMT was performed as described in the literature (1), a reaction being considered positive with a red or pink color on the swab. All doubtful reactions were excluded from

analysis. All tests were performed by the same investigator (SK). All patients who participated completed a questionnaire on basic information, dermatological disease and atopy. In addition, we evaluated another 32 female patients with known nickel-positive reactions. They were requested to participate in a study unaware of its nature. After medical examination, their jewelry was tested by the same method and they completed the questionnaire. As a control group, the jewelry of an additional 250 female contact dermatitis patients were tested with DM. These patients had positive patch tests to at least 1 allergen, but none had nickel dermatitis or positive nickel reaction on patch testing. Statistical evaluation was made by computerized SAS analysis.

Results

Table 1 summarizes the results for 1037 jewelry items collected from the 500 random patients. In Table 2, the

DMT findings regarding various metals in jewelry is shown, Table 3 shows the DMT results for 206 jewelry items collected from the 32 patients with nickel dermatitis and positive patch tests, and Table 4 correlates the test results with the metal type.

Earlobe dermatitis was the most common dermatitis in the known nickel-sensitive patients with a positive patch test to nickel (84.3%), followed by hand eczema (59.3%). Hand eczema was exhibited in only 15.4% of those with non-nickel contact dermatitis ($p < 0.0005$). We also found good correlation between earlobe and neckline contact dermatitis, and the presence of at least 1 nickel-releasing piece of jewelry in the same patients ($p = 0.06$ and $p = 0.002$, respectively). Atopy was noted in

49.8% of these without nickel dermatitis and in 81.2% of patients with nickel dermatitis, atopy being defined as the presence of at least 1 of the following: atopic dermatitis, allergic rhinitis, allergic conjunctivitis, bronchial asthma.

Discussion

Nickel is the commonest allergen in Europe and the USA (2, 3). 10% of all routine patch tests are positive for nickel (1, 4). In Israel, the most common allergens, on routine patch tests, are nickel and potassium dichromate (5).

Our most striking finding was that more than 90% of known nickel-sensitive patients with positive patch tests, who were clearly aware of their sensitivity, continued to wear at least 1 piece of nickel-releasing jewelry. This supports Fisher's theory that chronic nickel dermatitis is caused by continuing contact with nickel rather than systemic nickel ingestion (6).

We also found that nickel-sensitive patients with earlobe and neckline dermatitis had at least 1 piece of nickel-releasing jewelry. Here again, we were able to demonstrate the possible connection between continuing nickel contact and nickel dermatitis at typical sites. The relationship between nickel sensitivity and hand eczema is controversial (2, 10). This study clearly demonstrates a correlation. About 60% of nickel-sensitive patients had hand eczema. The presence of atopy in nickel-sensitive patients is well recognized (11, 12). We found this to be true in more than 80% of patients.

There is a need to raise public awareness of nickel release from certain types of jewelry, especially among nickel-sensitive individuals. Watches and earrings are the common nickel releasers, though not if yellow gold, silver or copper. The Israel Ministry of Health should initiate regulation to limit the use of nickel in jewelry.

Table 1. DMT for 1037 items from 500 patients

Item	Negative DMT	Positive DMT
watch	164	160
watchstrap	89	128
ring	155	1
earring	70	73
bracelet	122	10
necklace	54	7
glasses frames	1	3
total	655	382

Table 2. DMT for various metal types of jewelry from 500 patients

Metal	Negative DMT	Positive DMT
copper	16	0
titanium	1	0
silver	60	1
white gold	5	0
yellow gold	275	0
unidentified alloys	298	381
total	655	382

Table 3. DMT for 206 items in 32 nickel-sensitive patients (positive reaction to nickel on patch tests)

Item	Negative DMT	Positive DMT
watch	9	16
watchstrap	7	19
ring	25	0
earring	26	37
bracelet	12	4
necklace	29	13
glasses frames	2	3
key	1	3
total	111	95

Table 4. DMT in various metal types of jewelry (nickel-sensitive patients)

Metal	Negative DMT	Positive DMT
silver	14	2
yellow gold	65	0
unidentified alloys	32	93
total	111	95

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Inconsistent intracutaneous and patch test results in a patient allergic to mepivacaine and prilocaine

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Key words: mepivacaine; prilocaine; amide anesthetics; allergic contact dermatitis; intracutaneous test; cross-reactivity; medicaments. © Munksgaard, 1998.

Case Report

The right wrist of a 48-year-old woman was operated on for carpal tunnel syndrome, using infiltration analgesia with both Carbocain® (10 mg/ml mepivacaine; Suomen Astra, Kirkkonummi, Finland), and Lidocain® (10 mg/

ml lidocaine; Orion Corporation, Espoo, Finland). The skin was sterilized with Klorhexol® (chlorhexidine gluconate). That same evening, the wound area and fingerwebs of her right hand started to itch. The next day, the whole hand was swollen and a vesicular eczema developed on the right hand and the wound. Her surgeon

Table 1. The patient's patch test and delayed i.c. test reactions with local anesthetics

Substance tested	Generic name	Additives	Source	Concentration of anesthetic or allergen (%)	1st. patch test session	2nd. test session; patch tests	2nd. test session; intracutaneous tests
procaine	procaine hydrochloride	no*	C	1	–	NT	NT
aine-mix 3	benzocaine + dibucaine** + amethocaine***	no*	C	10	–	NT	NT
dibucaine	dibucaine hydrochloride	no*	C	1	–	NT	NT
dibucaine	dibucaine hydrochloride	no*	C	5	NT	–	NT
Lidocain®	lidocaine	MPHB	Orion	1	–	NT	NT
lidocaine	lidocaine	no*	C	5	NT	–	NT
lidocaine	lidocaine	no*	T	15	–	NT	NT
hydrochloride							
Xylocain®	lidocaine	MPHB	Astra	2	NT	–	–
EMLA cream®	lidocaine+prilocaine	no	Astra	2.5+2.5	–	NT	NT
prilocaine	prilocaine hydrochloride	no*	C	5	NT	–	NT
Citanest®	prilocaine hydrochloride	MPHB	Astra	1	NT	–	++
tetracaine	tetracaine hydrochloride	no*	C	5	NT	–	NT
amylocaine	amylocaine hydrochloride	no*	C	5	NT	–	NT
Carbocain®	mepivacaine	MPHB	Astra	1	++	–	++
Carbocain®	mepivacaine	MPHB	Astra	0.32; 0.1; 0.032, 0.01	–	NT	NT
Carbocain®	mepivacaine	MPHB	Astra	2; 1; 0.5, 0.25, 0.125, 0.1	NT	–	NT
Marcaïn®	bupivacaine hydrochloride	sodium chloride, sodium hydroxide	Astra	0.75	NT	–	–
Naropin®	ropivacaine hydrochloride		Astra	1	NT	–	–
Klorhexol®	chlorhexidine gluconate	no*	O	0.5	–	NT	NT
paraben mix	MPHB and other parabens	no*	C	12	–	NT	NT

Source: C=Chemotechnique; T=Trolab; O=prepared at the Finnish Institute of Occupational Health.

MPHB: methylparahydroxybenzoate. NT: not tested.

*in petrolatum. **dibucaine=cincaïne (cinchocaine). ***amethocaine=tetracaine.