

- Pigmented contact dermatitis due to Naphthol AS in a pil-low case. *Contact Dermatitis* 1997; 37: 37–38.
4. Hayakawa R, Matsunaga K, Kojima S, Kaniwa M, Nakamura A. Naphthol AS as a cause of pigmented contact dermatitis. *Contact Dermatitis* 1985; 13: 20–25.
 5. Roed-Petersen J, Batsberg W, Larsen E. Contact dermatitis from Naphthol AS. *Contact Dermatitis* 1990; 22: 161–163.
 6. Berger C, Muslamani M, Menezes Brandão F, Fossereau

- J. Thin-layer chromatography search for Disperse Yellow 3 and Disperse Orange 3 in 52 stockings and pantyhose. *Contact Dermatitis* 1984; 10: 154–157.
7. Fossereau J. Clothing. In: Rycroft R J G, Menné T, Frosch P J (eds): *Textbook of contact dermatitis*, 2nd edition. Berlin: Springer-Verlag, 1995: 505–514.
8. Osmundsen P E, Larsen E. Pigmenteret kontaktdermatitis. *Ugeskrift for Læger* 1987; 149: 2856–2857.

Dermatitis induced by a spinal cord stimulator implant

K. E. McKENNA AND G. McCLEANE¹

Departments of Dermatology and ¹Anaesthetics, Craigavon Area Hospital Group Trust, Craigavon, BT63 5QQ, Northern Ireland, UK

Key words: spinal cord stimulator implant; ischaemic heart disease; contact dermatitis; nickel allergy. © Munksgaard, 1999.

Case Report

A spinal cord stimulator, implanted in a 53-year-old man with severe ischaemic heart disease, was successfully controlling recurrent chest pain, when, 1 month after insertion, eczema developed on his left lateral chest over the site of the subcutaneous receiver (X-TREL 3470, Medtronic). The receiver (5.3×4.7×1 cm) circuitry is encased in epoxy resin, with a polyurethane connector block where an insulated stimulating electrode is attached by 4 titanium setscrews in silicone rubber grommets. A transmitter is clipped to the patient's belt, with a lead from this terminating in a rubber electrode pad held over the receiver by an adhesive pad.

The patient's only previous history of skin disease was of rashes from contact with cheap metal. Patch testing to the European standard series (Trolab) at D3 revealed a + reaction to nickel. Rubber, and glues and plastics series, rubber electrode pad and adhesive pad were all negative. Titanium was not tested. The patient required continued use of a moderate topical corticosteroid to control the eczema.

Discussion

The gate theory of pain inspired the clinical use of spinal cord stimulation (SCS) (1). Complications include leakage of cerebrospinal fluid, haematoma, electrode failures, infection, pain, radicular stimulation, seroma, and hypersensitivity or rejection (2–4). Apart from silicone (2), other allergens have not been identified (3, 4).

In contrast to a pacemaker, the implanted SCS device has no battery. Pacemaker dermatitis is well recognized, either over the site or widespread. Epoxy resin (5), mercury (6), titanium (7), chromate (8) and nickel (9) have

all been implicated. A woman with nickel allergy developed acute pompholyx of the hands 2 days after implantation of a pacemaker encased in nickel-containing stainless steel (9). In our case, it is considered unlikely that the patient's nickel allergy played a significant rôle in the dermatitis. In many cases of dermatitis overlying a pacemaker, allergy to components has not been demonstrated (10), and an isomorphic response to expansion of the underlying tissues by the hard device has been proposed instead (10, 11).

References

1. Simpson B A. Spinal cord stimulation. *Pain Reviews* 1994; 1: 199–230.
2. Burton C V. Session on spinal cord stimulation: safety and efficacy. *Neurosurgery* 1977; 1: 214–215.
3. Meglio M, Cioni B. Personal experience with spinal cord stimulation in chronic pain management. *Appl Neurophysiol* 1982; 45: 195–200.
4. Long D N, Erickson D E. Stimulation of the posterior columns of the spinal cord for relief of intractable pain. *Surg Neurol* 1975; 4: 134–141.
5. Romaguera C, Grimalt F. Pacemaker dermatitis. *Contact Dermatitis* 1981; 7: 333.
6. Brun R, Hunziker N. Pacemaker dermatitis. *Contact Dermatitis* 1980; 6: 212–213.
7. Peters M S, Schroeter A L, Van Hale H M et al. Pacemaker contact sensitivity. *Contact Dermatitis* 1984; 11: 214–218.
8. Rietschel R L, Fowler J F. *Fisher's contact dermatitis*, 4th edition. Baltimore, PA: Williams & Wilkins, 1995: 432.
9. Landwehr A J, Van Ketel W G. Pompholyx after implantation of a nickel-containing pacemaker in a nickel-allergic patient. *Contact Dermatitis* 1983; 9: 147.
10. Wilkerson P G, Jordan W P. Pressure dermatitis from an implanted pacemaker. *Dermatol Clin* 1990; 8: 189–192.