

Allergic contact dermatitis to acid blue 158 in suture material

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Usually, skin reactions to suture materials are seen as non-specific inflammatory or foreign body reactions. Only a few case reports of contact allergies to suture materials are described (1, 2).

Case Report

A 38-year-old woman presented with three episodes of inflammatory reactions, including healing difficulties, after skin suturing. The first occurrence was in childhood after an operation on her left forearm. A second episode occurred in 2005, 7 days after suturing required after the insertion of an intramedullary nail due to a lower leg fracture. Two years later, the intramedullary nail was removed. Again, 6 days after suturing, healing problems occurred with inflammation around the stitches.

Seralon® blue thread (Serag Wiessner, Naila, Germany) was the suture material used in 2005 and 2007. Patch

testing with Seralon blue thread (Serag Wiessner) that was cut into small pieces and applied to the upper back under occlusion for 2 days produced a ++ reaction after 3 and 4 days (not shown). There were no reactions to Vicryl®, Vicryl plus®, Monocryl unstained®, Monocryl purple®, Mersilene®, Prolene® blue thread [which is coloured with phthalocyanine blue, colour index (C.I.) 74160] (all Johnson & Johnson™ Medical GmbH, Norderstedt, Germany), or the baseline series, medicaments, leather and textile colours (including *p*-phenylenediamine), resins, and adhesives of the German Contact Dermatitis Research Group. The allergens (Johnson & Johnson; Serag Wiessner; and Hermal, Reinbeck, Germany and Chemotechnique Diagnostics, Malmö, Sweden) were applied in Finn Chambers® on Fixomull® stretch (Bayersdorf Medical GmbH, Hamburg, Germany) to the upper back for 2 days. Readings were made on D2, D3, and D4.

Further testing of Seralon® thread components produced a ++ positive reaction to the azo dye C.I. acid blue 158 in a dilution of 1% in pet. after 2 days, a +++ positive reaction on D3 (Fig. 1), and a +++ positive reaction on D4. Patch testing with phthalocyanine blue C.I. 74160 (1% pet.), epsilon-caprolactam, and Seralon® unstained thread produced no positive reactions. To help exclude non-specific, cutaneous hyper-reactivity, we also included patch testing with sodium lauryl sulfate (0.25% in aqua), which was negative.

Discussion

This is the first case report of a contact allergy caused by acid blue 158



Fig. 1. Patch testing of acid blue 158 with a +++ positive reaction after 3 days (despite local application of mometasone furoate cream due to the strong, local reaction at D2).

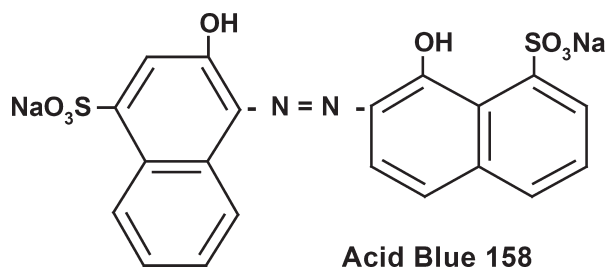


Fig. 2. Chemical structure of the azo dye acid blue 158 (molecular formula: $C_{20}H_{10}CrN_2O_8S_2Na$). CAS registry number 70942-15-3.

alone in a suture material. Previously, contact allergy to acid blue 158 together with epsilon-caprolactam was reported in a patient who worked as a hairdresser; a pre-existing contact allergy to *p*-toluenediamine was suggested as the possible pathway for the sensitization to acid blue 158 (2).

Seralon[®] thread consists of acid blue 158 as an azo metal colour com-

pound with chromate and polyamide-6 with epsilon-caprolactam polymer (Fig. 2). Sensitization to acid blue 158 probably occurred with the first operation in our patient because Seralon blue thread was used in both operations in 2005 and 2007. Contact allergy to suture materials, including the colouring agents, occurs very rarely but should be taken into

account if clinical symptoms such as poor wound healing are present.

References

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