

Patch testing for vulval symptoms: our experience with 282 patients

F. Al-Niaimi,¹ S. Felton² and J. Williams²

¹St. John's Institute of Dermatology, Guy's and St Thomas' Hospital, London, UK; and ²Department of Dermatology, Salford Royal Foundation Trust, Manchester, UK

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Summary

Background. Vulval allergic contact dermatitis (ACD) may be a primary disorder or may be associated with an underlying vulval dermatosis. Few studies have looked at the incidence of ACD and the allergens responsible for it.

Aims. We report the incidence of vulval ACD and the responsible allergens in 282 patients investigated over a 6-year period in a large teaching hospital.

Methods. We performed a retrospective case notes review of all patients investigated for vulval symptoms in our tertiary referral contact dermatitis investigation unit. A total of 282 patients underwent patch testing.

Results. The overall incidence of ACD was 54%. The age range of patients was 14–89 years. Pruritus was the most common presenting symptom. Nickel was the most commonly found allergen, but was usually not relevant. Fragrances and topical antibiotics/anaesthetics were less commonly detected, but were almost always relevant to the presentation. Positive reactions were more commonly found in patients who had long-standing symptoms and/or had used many products in the vulval area.

Conclusions. Vulval ACD affects women of a wide age range, and presents with nonspecific symptoms such as pruritus and/or vulval irritation. Patients may have experienced symptoms for many years before presenting to a dermatologist. The diagnosis of vulval ACD is more common in those who have been exposed to many potential sensitizers.

Introduction

The vulval skin is not uniform; rather, there are considerable structural and physiological differences between the skin covering the various anatomical constituents of the vulva.¹ Furthermore, there may even be differences within a single substructure. For instance, one study demonstrated the presence of stratum corneum on the lateral side of the labia minora in 100% of women, but this was present on the medial side in only two-thirds of these women.² In addition, the vulval skin is continually subjected to

occlusion, friction, sweating, and both vaginal and urethral secretions.¹ Such factors increase the susceptibility of the skin to vulval dermatoses, irritant dermatitis and allergic contact dermatitis (ACD).

Vulval symptoms can cause significant distress to patients, and thus may be a relatively common presentation to dermatologists. There is often a delay in presenting to secondary care, and so patients may have applied a long list of prescribed and over-the-counter topical preparations. Vulval ACD was first reported in 1966,³ and may occur as a primary disorder or may complicate an underlying vulval dermatosis, especially as the risk of ACD increases with the use of multiple topical treatments.^{4,5} The first retrospective review of vulval patch testing was performed in 1992,⁴ and studied 135 women in Oxford, UK, who had persistent vulval symptoms. Positive results were reported in 47% of cases, with 29% thought to

Correspondence: Dr Firas Al-Niaimi, Department of Dermatology, Cumberland Infirmary, Newtown Road, Carlisle, Cumbria, CA2 7HY, UK
E-mail: firas55@hotmail.com

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be relevant. Since then, several retrospective reviews have described a relatively similar set of allergens as being contributory to vulval ACD, particularly fragrances, topical anaesthetics and neomycin.^{6–9}

The aim of our study was to determine the prevalence of vulval ACD and the relevance of contact sensitization in women referred to our specialist contact dermatitis investigation unit over a 6-year period for the investigation of vulval symptoms.

Methods

We performed a retrospective case note review of all women who were patch tested in our tertiary referral contact dermatitis investigation unit. The review included 282 patients. All cases were referred to us either from a general dermatology or specialist vulval clinic. Women with vulval dermatitis or symptoms of pruritus were considered for patch testing. They included patients with vulval lichen sclerosus and lichen planus unresponsive to or refractory to treatment. In our review, we excluded cases of perineal dermatitis.

Data on patient age, presenting condition, duration of symptoms and patch testing results were collected. Patch testing to an extended battery of allergens was undertaken according to our departmental guidelines, and included the European standard series, preservatives, corticosteroids and a battery of common over-the-counter topical vulval treatments, in addition to the patients' own products. Patches were removed, and reactions assessed at 2 days and again at 4 days by fully trained members of staff within the department. Almost all women were patch tested to all allergens unless there were specific reasons not to do so.

Results

In total, 282 patients were patch tested, and vulval ACD was diagnosed in over half of them. The mean \pm SD age was $51 \pm$??? years (range 14–89). Pruritus was the most commonly reported symptom, followed by 'irritation'. Duration of symptoms prior to presentation ranged from 2 months to 39 years.

Following patch testing, vulval ACD was diagnosed in 54% of patients; 39% had reacted to between two and four allergens, and 8% to more than four allergens. Overall, 49% of the contact allergens detected were felt to be relevant to the presentation. Only 6% of patients had positive reactions to their own products. The positive patch test reactions are shown in Table 1, in decreasing order of incidence. Nickel provided the largest number of positive reactions, but overall these were

Table 1 Positive allergen results.

Allergen
Nickel*
Cobalt*
Neomycin
Fragrance mix
Balsam of Peru
Caine mix
Framycetin
Potassium dichromate*
Sodium metabisulfite
Cinchocaine

Results are given in order of decreasing frequency. *Generally considered not relevant to the patients' symptoms.

to be relevant in only 8% of patients. In terms of relevant allergens, the greatest culprit was neomycin, followed by balsam of Peru and fragrances.

Number of positive allergens in relations to duration of symptoms

Overall, 17% of patients had experienced symptoms for > 10 years. Of these, 74% had positive results: 64% to multiple allergens, with 4% showing positive reactions to more than four allergens.

A further 32% of patients had experienced symptoms for between 5 and 10 years, and 60% of these had positive reactions: 40% to multiple allergens and 7% reacting to more than four allergens.

Discussion

Vulval dermatitis is a common phenomenon, and investigators should have a high suspicion of underlying contact allergy. To our knowledge, this is the largest study to date of vulval ACD, and thus provides valuable insight into the incidence of ACD and the responsible allergens.

Vulval ACD can affect a wide age range, as our patient demographics show an incidence from puberty to old age, with a range of 14–89 years. In some cases, patients had a staggeringly long delay before presentation. Symptoms were generally nonspecific, with pruritus the most commonly reported, followed by irritation/soreness.

Overall, 54% of our 282 patients had one or more positive patch test reactions, generally in keeping with previous studies in the literature (Table 2). However, not all positive patch test reactions are clinically relevant, highlighting the importance of correlating results with information obtained from a thorough

Table 2 Summary of results from previous studies.

Reference	Patients, <i>n</i>	Positive allergens, %	Relevant allergens, %	Contact allergens
Marren <i>et al.</i> ⁴	135	47	29	Nickel, balsam of Peru, ethylenediamine, neomycin
Lewis <i>et al.</i> ⁶	121	59	49	Caines, fragrance, neomycin
Lucke <i>et al.</i> ⁷	55	65	73	Nickel, fragrance, medicaments, dyes
Nardelli <i>et al.</i> ⁸	92	38	43	Nickel, PPD, balsam of Peru, fragrance mix
Haverhoek <i>et al.</i> ⁹	43	81	44	Nickel, cobalt, Vagisil [®] , tea tree oil

PPD, *para*-phenylenediamene.

history and examination. Nevertheless, half of the positive allergen reactants were felt to be clinically relevant, and many patients had multiple reactants. In particular, the relevance of nickel in vulval ACD has been the subject of debate for many years.^{4,7} In line with previous studies,^{4,7-9} we also found nickel to be the commonest positive reactant, but even after re-questioning of patients, these reactions were mostly considered irrelevant. Relevance was considered when an identifiable allergen was thought to be responsible for the symptoms. In most of our cases, this was relevant to the patient's current condition.

Previous studies have reported topical medicaments such as local anaesthetics, antibiotics and corticosteroids, as well as the preservatives in such topical treatments, to be the most important sensitizers in the genital area.^{5,6,10,11} Similarly, we found that positive reactions to fragrances, topical anaesthetics, preservatives and patients' own products to be relevant, almost without exception. Disregarding nickel, we confirmed fragrances, topical antibacterials and topical anaesthetics to be the most common allergens.

Furthermore, our results show that ACD is more likely to be diagnosed and multiple positive allergens found in two groups of patients: those who use multiple products and those with symptom duration of > 5 years. We speculate that this is due to an increased risk of sensitization. Certainly, the prevalence of ACD was even higher in those who had had symptoms for over 10 years than for those with symptoms for 5–10 years.

Unlike previously reported studies, our cohort had surprisingly few cases of topical corticosteroid allergy (2%). We are unable to explain this. Furthermore, the relevance of fragrance allergy is often difficult to prove, and this may be a limitation of our study.

Finally, we observed the emergence of a new allergen that became increasingly relevant, namely, sodium metabisulfite. We hypothesize that this is

secondary to the increased prescribing of a particular corticosteroid, Trimovate[®] (Glaxo SmithKline, London, UK), of which sodium metabisulfite is a constituent.¹²

Conclusion

Vulval ACD affects women of a wide age range. As it is not easily recognized, by virtue of its nonspecific clinical features and nonspecific symptoms, patch testing should always be considered when evaluating a patient with vulval symptoms. A thorough history and examination is necessary to identify potentially relevant allergens. Our cohort of patients was a selected group, and may not necessarily represent all patients with vulval dermatitis; nevertheless, to our knowledge, this is the largest reported cohort of patch testing of patients with vulval conditions.

What's already known about this topic?

- Vulval ACD may be a primary disorder or may complicate an underlying vulval dermatosis.
- Fragrances, topical antibiotics and topical anaesthetics are the most commonly responsible allergens.

What does this study add?

- Patients with longer duration of symptoms, particularly > 10 years prior to investigation, are more likely to have vulval ACD.
- Over a 6-year period we found an increased incidence of sensitivity to sodium metabisulfite, a constituent of Trimovate[®].

References

- 1 Bauer A, Rödiger C, Greif C, Kaatz M, Elsner P. Vulvar dermatoses – irritant and allergic contact dermatitis of the vulva. *Dermatology* 2005; **210**: 143–9.
- 2 Jones IS. A histological assessment of normal vulvar skin. *Clin Exp Dermatol* 1983; **8**: 513–21.
- 3 Epstein E. Allergic dermatitis from chlordanoin vaginal cream. Report of 2 cases. *Obstet Gynecol* 1966; **27**: 369–70.
- 4 Marren P, Wojnarowska F, Powell S. Allergic contact dermatitis and vulvar dermatoses. *Br J Dermatol* 1992; **126**: 52–66.
- 5 Margesson LJ. Contact dermatitis of the vulva. *Dermatol Ther* 2004; **17**: 20–7.
- 6 Lewis FM, Harrington CI, Gawkrödger DJ. Contact sensitivity in pruritus vulvae: a common and manageable problem. *Contact Dermatitis* 1994; **31**: 264–5.
- 7 Lucke TW, Fleming CJ, McHenry P, Lever R. Patch testing in vulvar dermatoses: how relevant is nickel? *Contact Dermatitis* 1998; **38**: 111–12.
- 8 Nardelli A, Degreef H, Goossens A. Contact allergic reactions of the vulva: a 14 year review. *Dermatitis* 2004; **15**: 131–6.
- 9 Haverhoek E, Reid C, Gordon L *et al.* Prospective study of patch testing in patients with vulvar pruritus. *Australas J Dermatol* 2008; **49**: 80–5.
- 10 Brennan JA, Dennerstein GJ, Sflameni SF *et al.* Evaluation of patch testing in patients with chronic vulvar symptoms. *Australas J Dermatol* 1996; **37**: 40–3.
- 11 Warshaw EM, Furda LM, Maibach HI *et al.* Anogenital dermatitis in patients referred for patch testing. Retrospective analysis of cross-sectional data from the North American Contact Dermatitis Group, 1994–2004. *Arch Dermatol* 2008; **144**: 749–55.
- 12 Madan V, Walker SL, Beck MH. Sodium metabisulfite allergy is common but is it relevant? *Contact Dermatitis* 2007; **57**: 173–6.