

Dactylitis and psychic stress

Two young women with psoriasis and with psoriatic arthritis who shared a common genetic background presented with dactylitis during stressful life events: we discuss the role of psychic stress versus that of physical trauma in the development of psoriasis and psoriatic arthritis.

Keywords: dactylitis • psoriasis • psychic stress

The role of physical trauma in the development of psoriatic arthritis (PsA) is relatively well established [1–3] as well as that of psychological stress in the development of psoriasis [4–7]. Less known is that psychological stress might have a role in the onset of dactylitis in genetically predisposed subjects with psoriasis or PsA. Herein we describe two young females from the same geographical area with a similar HLA background who developed ‘sausage digits’ toward the end of two stressful life periods.

Case 1

A 23 year-old girl presented with dactylitis of the second and third toe of her right foot with swelling and tenderness of one week duration. Her Leeds Dactylitis score (LDS) was 179 (8). She had been diagnosed with PsA two years earlier involving mainly left knee and ankle without clinical or imaging evidence of axial disease. Psoriasis was present in her mother and brother. Her full HLA typing revealed A2,26, B27,41, Bw4,6, Cw1,7, DR3,8, DQ2,4, DRW52,-. She was commenced on methotrexate titrated up to 17.5 mg weekly. She had planned her wedding six months in advance to allow the sale of her partner’s shop in order to purchase their new home. Unfortunately prospective buyers pulled out several times before the shop was finally sold 2 months after the planned wedding date that was postponed by four months. The dactylitis developed at 7 month since

first failed sale, was treated with oral diclofenac (50 mg three-times 2 weeks), improved after three weeks and fully resolved after 6 weeks but for minimal thickening of the flexor tendons of the two affected toes. On this occasion her LDS was 36.

Case 2

A 23 year-old girl presented with dactylitis in the second and third toe of the left foot. Her LDS was 238. She had been diagnosed with scalp and elbow psoriasis seven years earlier but had never suffered arthritis. Dactylitis developed 5 months after the first re-sit of her last exam for a degree in economics and two months after her planned wedding date. Most of her previous exams had been passed with honours. Being a perfectionist she re-sat this last exam three-times despite gaining a pass (this is possible in Italy) because she wanted a pass with honours. Hence dactylitis was preceded by a considerable stressful period due to the delay of her graduation and her wedding. The patient denied any treatment. HLA typing revealed HLA-B 27. After 3 months her LDS had gone down spontaneously to 85.

Discussion

We have described two women from the same geographical area of Southern Italy who developed dactylitis toward the end of stressful life periods due to slightly different reasons for which their wedding dates

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were postponed. The importance of stress in psoriatic patients is well established [4]: stressful events can induce acute episodes, though often the events as experienced by the patient are more important than their intensity [5] and women seem more psychologically reactive to their disease and its influence on everyday life [6]. Likewise psychological stress may influence severity and symptoms of PsA [8,9]. The role of psychological stress is not completely understood in this setting though neuropeptides released by the nervous system seem implicated [7,10].

Better known is the effect of physical injury that may precipitate the appearance of arthritis in spondylarthropathies, particularly in subjects who are *HLA B27* positive in keeping with the hypothesis of a ‘deep Koebner phenomenon’ [11]. A study from 1992 underscored the interplay between environmental factors, *HLA B27* status and articular involvement in PsA. Of the 138 PsA patients, 12 (9%) had had an acute disorder immediately preceding the onset of arthritis, mostly peripheral, though the authors did not state whether immediate meant hours or days [1]. The traumas that occurred before the onset of the arthritis were all of a physical nature, including surgical procedures, articular trauma, abortion, myocardial infarction, thrombophlebitis and phosphoric ester intoxication whereas psychological “trauma” was never recorded [1]. In this series no patient developed dactylitis that remains an anecdotal occurrence after physical trauma [12]. It therefore seems that onset or flare of disease after trauma is immediate [1,2] whereas stressful life events are more likely to affect severity and symptoms [5,8] and less commonly inducing immediate flares as in our two patients. A more recent survey exploring environmental factors leading to the development of inflammatory arthritis in PsA confirmed physical trauma and moving home as significant stressors [3]. A similar scenario occurs in the aging male DBA/1 mice, a spontaneous

mouse model of spondyloarthritis, whose disease score increases when shifted from larger to smaller cages [13]. A case of stress-induced SAPHO (synovitis, acne, pustulosis, hyperostosis, osteitis) syndrome was described few years ago, adding to the family of spondyloarthritic disorders that may develop after exposure to stress factors like [14].

Conclusion

We have described two cases that, in keeping with other reports [14,15,16] highlight the intriguing link between the *HLA B-27* genetic background, psychological response and environmental factors, in particular stressful life events, in the development of a hallmark feature of PsA such as dactylitis.

Future perspective

Further studies should better address the role of physical and psychological stress in the development of dactylitis, with more attention to the psychological background of affected individuals, to extent of the exposure, and to the interval between exposure and onset of symptoms.

Informed consent disclosure

The authors state that they have obtained verbal and written informed consent from the patient/patients for the inclusion of their medical and treatment history within this case report.

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Executive summary

- In spondylarthropathic subjects who are *HLA B27* positive physical trauma may induce arthritis within hour or days.
- In psoriatic patients who are *HLA B27* positive dactylitis may develop after a prolonged period (months) of psychological stress.
- Questioning about psychological and traumatic events should be integral part of the history taking in subjects with psoriasis and/or spondyloarthropathies.

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