

## An Unusual Presentation of Psoriatic Arthritis in a Young Medical Student.

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### Case Report

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#### ABSTRACT

Psoriasis is a common, chronic inflammatory disease, predominantly affecting the skin and joints. Psoriatic arthritis (PsA), an arthropathy associated with psoriasis, is typically seen years after the onset of skin manifestations and presents as early morning stiffness, swelling, pain, tenderness of joints involved, dactylitis and enthesitis. Here, we report a case of psoriatic arthritis in a young male with plaque psoriasis, presenting as a suspected adverse drug reaction to 3% liquor picis carbonis (LPC), a topical coal tar preparation. Considering the complexity of treatment involved in treating psoriasis and the consequent adverse events, it is worth emphasizing the importance of causality assessment and attributing an adverse event to a particular drug. The dermatologist is often the first interface wherein the signs and symptoms of PsA can be detected, leading to initiation of early treatment and prevention of complications.

#### INTRODUCTION

Psoriasis is a chronic, inflammatory, multisystem disease with predominantly skin and joint manifestations. It has been estimated to affect 1-3% of the general population worldwide [1,2]. Psoriatic arthritis (PsA), an inflammatory seronegative spondyloarthropathy associated with psoriasis, is seen in 6-42% patients with psoriasis. The peak incidence of PsA has been reported between the ages 30 and 50 years, equally affecting men and women, however; it can develop anytime including childhood. According to current knowledge, activated T-cells seem to play a pivotal role in the pathogenesis of both psoriasis and PsA. It is characterized by stiffness, pain, swelling, and tenderness of joints and surrounding ligaments and tendons (dactylitis and enthesitis). Onset of psoriasis typically precedes development of PsA, positioning the dermatologist in an ideal position for early detection. Appropriate treatment of PsA includes physical therapy, patient education and medication ranging from nonsteroidal anti-inflammatory drugs (NSAIDs) for mild cases to disease-modifying antirheumatic drugs (DMARDs) and biologics for moderate to severe cases [1]. The treatment can be quite complex and requires thorough consideration of clinical classification, adverse drug reactions and individual response therapy. In this report, we describe a case of unusual presentation of PsA in a young male patient.

#### Case Report

A 21-year-old medical student, with history of plaque psoriasis from 2003, reported with, numbness, itching, localized hypothermia and swelling of the right wrist. He was on treatment with betamethasone valerate ointment (BVO) 1:4 + 2% Salicylic acid ointment (SAO) and polytar shampoo, OD application for scalp lesions, BVO 1:4 BD for the body/ limb lesions, and topical clobetasone butyrate 0.05% for the face lesions from the past 4 months. He was also on loratidine 10mg and chlorpheniramine maleate 4mg SOS. Further medication history revealed that present symptoms had developed within 24hrs of local application of 3% Liquor Picis Carbonis (LPC), for the lesions on the back. There was no history of similar complaints in the past. On examination, the wrist joint was swollen and hypothermic without any cutaneous eruptions or lesions. The body surface area (BSA) affected was 30%. The patient was advised to discontinue the use of 3% LPC and was advised to continue the antihistaminics, following which the symptoms of hypothermia, itching and numbness were completely relieved, indicating a positive de-challenge. He was advised to continue all other topical therapies. The causality assessment done by Naranjo's algorithm [3] had a score of '3' indicating a 'possible' adverse drug reaction (ADR) with 3% LPC.

However, the following week, the patient returned with complains of pain and swelling at the same site i.e. right wrist joint. Examination revealed that he was unable to clasp the hand well, right wrist arthralgia, diminished sensations over C<sub>6</sub>-C<sub>7</sub> dermatomes and nail pitting. There was no history of trauma or past history of arthritis. On screening, the patient was negative for rheumatoid factor, radiological examination of Rt. Shoulder and wrist was normal and the CIASSification criteria for Psoriatic ARthritis (CASPAR) score was 4. The patient was diagnosed to have psoriatic arthropathy - asymmetric oligoarthritis variety of mild grade.

Acute onset of symptoms, hypothermia of the joint involved, absence of early morning stiffness, no personal or family history of similar complaints in the past, points towards an unusual presentation of psoriatic arthritis.

The observations, of what initially appeared as a hypersensitivity reaction to 3% LPC, mainly due to the temporal association with application of LPC and a positive de-challenge, were perhaps, an atypical presentation of psoriatic arthritis.

## DISCUSSION

Coal tar has been employed for psoriasis both as monotherapy and in combination with other topical agents, systemic medicines, and phototherapy. The utilization of coal tar in combination with ultraviolet B (UVB) phototherapy, first as part of the original Goeckerman regimen and later in modified regimens, has popularized its use. Although the mechanism of action of coal tar is not very clear, it is known to suppress DNA synthesis by decreasing the mitotic labeling index of keratinocytes. Currently, the use of coal tar (lotions, ointments, foams and shampoos) is reserved mainly for patients with chronic plaque psoriasis, scalp psoriasis, atopic dermatitis, seborrheic dermatitis, and neurodermatitis [4]. These products have been poorly tolerated by patients due to cosmetic concerns like staining of the clothing as well as a malodorous tar smell. Medical side effects also occur, such as irritant contact dermatitis, folliculitis, and UVA photosensitivity [5]. Allergic contact sensitivity is common with crude tar preparations; however the same is not true with 3% LPC. Limited literature is available on the adverse effects of LPC in patients with psoriasis.

The Moll and Wright Criteria for psoriatic arthritis classifies PsA into five types as polyarticular or symmetric, oligoarticular (<5 joints) or asymmetric, distal interphalangeal (DIP) joint predominant, spondylitis predominant and arthritis mutilans. CASPAR criteria classify PsA into 2 major patterns viz. peripheral joint disease (pauci or polyarticular) and skeletal/ axial disease [4]. The clinical presentation and prevalence of PsA varies across regions and patient populations. A recent study from India on PsA, [6] reported a prevalence of 8.7% in which symmetrical polyarthrits (58%) was the most common type. Isolated spondyloarthropathy was seen in only 5% of the patients. Another study by Reich K et al [7] have described that psoriatic patients with PsA had more severe symptoms (increase in Psoriasis Area and Severity Index, PASI score) and a lower Dermatology Life Quality Index (DLQI). Treatment plan is based on the impact of quality of life, response to therapy and pharmaco-economic considerations.

PsA develops years after the first skin manifestation and many a times the first interface to diagnose psoriatic arthropathy is the dermatologist. We report this case to highlight the need for timely diagnosis of psoriatic arthropathy to minimize complications and to effectively plan treatment strategies that are equally effective in the control of skin and joint symptoms alike.

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