

# *Herpes simplex following intra-articular sacroiliac corticosteroid injection*

A. Meydani, R. A. Schwartz, P. M. Foye, and A. D. Patel

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## SUMMARY

Localized herpes simplex (HSV) type II following intra-articular corticosteroid injection is remarkable. We describe a 51-year-old woman with sacroiliitis following a fall. She was treated with an intra-articular injection of 80 mg methylprednisolone into her sacroiliac joint, followed 2 days later by a cluster of herpetiform vesicles adjacent to the injection site. Swab of punctured vesicles demonstrated HSV type II by polymerase chain reaction. One plausible explanation is HSV reactivation secondary to localized immunosuppression from corticosteroid injection.

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## *Introduction*

A localized outbreak of cutaneous herpes simplex can be a result of primary infection at a site of exposure, or due to reactivation of a latent infection (“recrudescence”) (1–3). HSV type II manifests primarily as genital HSV disease. Risk factors for genital HSV infection include older age, female gender, black race, low socioeconomic status, and higher number of lifetime sexual partners (4–6). Stress, immunosuppression, systemic corticosteroid administration, local tissue trauma, and nerve damage are among some of the known triggers for reactivation (1). Additionally, a number of reports have implicated steroid injections in the local reactivation of herpes-family viruses. Herpes zoster has been associated with epidural and intra-articular

steroid injections and herpes simplex keratitis has been demonstrated after intravitreal steroid injections (3, 7–10). Our case implies that a cutaneous herpes simplex eruption may be precipitated by intra-articular corticosteroid injection.

## *Case report*

The patient was a 51-year-old African American woman with a history of hypothyroidism and mild asthma, who developed sacroiliitis after falling onto her hip and buttock region. When she failed to obtain adequate relief despite weeks of oral analgesics and physical therapy, she underwent treatment via injections. First, she received a diagnostic sacroiliac

## KEY WORDS

**herpes simplex, corticosteroids, injections, immunosuppression**

joint injection; specifically, an intra-articular injection of local anesthetic, with accurate placement confirmed using fluoroscopic guidance and contrast (Omnipaque). A favorable response to the diagnostic block confirmed the sacroiliac joint as her primary pain generator. She had no complications. Days later, she underwent a therapeutic intra-articular sacroiliac joint injection with corticosteroid using 80 mg of methylprednisolone, again using fluoroscopic guidance. She was evaluated 8 days after the injection, reporting that 2 days after the injection she had noticed a pruritic rash near the site of injection. The patient reported using acetaminophen with some symptomatic relief. She denied constitutional symptoms such as fever or chills. In addition, she noted that she had had chickenpox as a child, had tested HIV seronegative 2 months prior to presentation, and had no known history of oral or genital herpes simplex infection. On physical examination, the patient had a cluster of vesicles on her right medial buttock, located 1 cm inferior to a small dot that matched the injection site (Fig. 1). No regional lymphadenopathy was evident on examination. The affected region was mildly tender to palpation, but was without edema, warmth, or erythema. A vesicle roof was punctured and a swab of its contents and base was sent for viral analysis employing polymerase chain reaction analysis, which was positive for HSV type II and negative for HSV type I. Her eruption responded well to topical antiviral therapy with 5% acyclovir cream. Her sacroiliac joint pain also improved.

## Discussion

Reactivation of herpes-family viruses may result from steroid injections (3, 4, 7, 9). HSV type II is a common infection, particularly among sexually active adults. Known risk factors for HSV reactivation include psychological stress; exposure to heat, cold, or sunlight; menstruation; sexual intercourse; fever; immunosuppression; systemic corticosteroid administration; local tissue trauma; laser surgery; and nerve damage (1). Although prior case reports have implicated corticosteroid injection in the development of ocular HSV reactivation, causing HSV keratitis (3), localized cutaneous HSV reactivation related to corticosteroid injection has not been previously described.

The majority of HSV type II infections are subclinical and unrecognized by those infected. Classic primary infection is preceded by a prodrome of localized pain, tingling, or burning, with systemic

symptoms such as malaise, fever, and inguinal lymphadenopathy often present. After primary infection, herpes viruses ascend in a retrograde fashion through sensory nerves to the ganglia of the host nervous system. The sacral ganglia are the most common sites of latency for HSV type II infections. There, the virus replicates, sequestered from the host immune system, and persists in a dormant state. Once reactivated, the virus migrates along sensory neurons to innervated mucocutaneous sites, undergoes replications, and leads to the formation of a cluster of vesicles at a point near the initial site of exposure (1).

Steroid injections are employed for a number of disorders. Our patient had received a steroid injection for sacroiliitis and shortly after developed a herpes simplex eruption, without prodromal symptoms, in a cluster distal to the site of injection. Polymerase chain reaction testing from specimens obtained by viral swab identified the presence of HSV type II virus. Our case demonstrates a possible link between the use of intra-articular corticosteroids and reactivation of herpes simplex. Because corticosteroids are immunosuppressive, they may locally give the herpes simplex virus the opportunity to flourish and reactivate. Another possibility is that localized trauma to the skin may have precipitated the herpetic eruption, as has been reported in cases of herpes zoster (11–14), though this seems less plausible in this case because the eruption occurred in a site distinct from, albeit adjacent to, the actual injection site. Primary infection due to transmission at the time of injection is also a possibility, such as might occur by contact with someone having herpetic whitlow. However, lack of a prodrome as well as use of a sterile technique during the injection by someone without herpetic whitlow make this extremely unlikely. In any event,



**Fig. 1. Characteristic cluster of herpetic vesicles, buttocks.**

the occurrence of the eruption shortly following the injection and the location of the eruption adjacent to the site of injection imply a causal link between the intra-articular corticosteroid injection and the eruption, rather than just coincidental infection.

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**A U T H O R S' A D D R E S S E S** *Ahou Meydani, MD, Dermatology, New Jersey Medical School, 185 South Orange Avenue, Newark, NJ 07103, USA*

*Robert A. Schwartz, MD MPH, Professor & Head, same address, corresponding author, Tel.: (973) 972-6255, Fax: (973) 972-5877, E-mail: roschwar@cal.berkeley.edu*

*Patrick M. Foye, MD, Physical Medicine and Rehabilitation, New Jersey Medical School, 185 South Orange Avenue, Newark, NJ 07103, USA*

*Atul D. Patel, MD, same address*