

# An unusual presentation of Herpes zoster and associated differentials

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*This case study documents the case of a 27-year-old female who presented with a complaint of left anterolateral thigh numbness, initially diagnosed as meralgia paresthetica with a differential diagnosis of lumbar radiculopathy. Over a span of two weeks, the patient endured emotional trauma and subsequently developed lesions in the area of complaint. The patient was diagnosed at a medical clinic with herpes zoster and was prescribed anti-viral medication which resulted in complete resolution.*

*This case highlights the importance of considering herpes zoster as a differential diagnosis for nerve-related symptoms. Features of lumbar radiculopathy, meralgia paresthetica, varicella zoster and herpes zoster are discussed, as well as the defining characteristics and treatment options. Practitioners must remain vigilant in*

*Une présentation inhabituelle du zona et des différentiels associés*

*Cette étude de cas documente le cas d'une femme de 27 ans qui a présenté une plainte d'engourdissement antérolatéral gauche de la cuisse, initialement diagnostiquée comme une méralgie paresthésique avec un diagnostic différentiel de radiculopathie lombaire. En l'espace de deux semaines, le patient a subi un traumatisme émotionnel et a par la suite développé des lésions dans la zone de la plainte. Le zona a été diagnostiqué chez le patient dans une clinique médicale et un traitement antiviral lui a été prescrit, ce qui a permis une guérison complète.*

*Ce cas souligne l'importance de considérer le zona comme étant un diagnostic différentiel pour les symptômes liés aux nerfs. Les caractéristiques de la radiculopathie lombaire, de la méralgie paresthésique, du zona varicelleux et du zona font l'objet de discussions, ainsi que les caractéristiques et les options de traitement qui les définissent. Les praticiens doivent rester vigilants en cas de suspicion d'infections virales*

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*suspicion of viral infections such as herpes zoster even with lower incidence due to approved vaccines.*

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KEY WORDS: chiropractic, differential diagnosis, herpes zoster, lumbar radiculopathy, meralgia paresthetica, patient management, varicella zoster

*telles que le zona, même avec une incidence plus faible en raison de vaccins approuvés.*

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MOTS CLÉS : chiropratique, diagnostic différentiel, zona, radiculopathie lombaire, méralgie paresthésie, prise en charge des patients, varicelle-zona

## Introduction

Low back pain can radiate into the lower extremities, giving rise to symptoms such as numbness, tingling and pain.<sup>1</sup> Differentiating nerve related diagnoses such as meralgia paresthetica, herpes zoster, and lumbar radiculopathy is important in determining what can be treated by a chiropractor and which patients should be referred for further investigation. This paper presents a case of a patient who presented to a chiropractic clinic with nerve related symptoms, later revealed to be a case of herpes zoster, after originally being diagnosed as meralgia paresthetica.

Meralgia paresthetica is a mononeuropathy of the lateral femoral cutaneous nerve, a sensory nerve that innervates the anterolateral part of the thigh.<sup>2</sup> Meralgia paresthetica is an elusive diagnosis to make because it can often mimic a lumbar radiculopathy presenting with decreased sensation to pinprick, pain, or burning within its distribution.<sup>2</sup> The entrapment site for this nerve is under the inguinal ligament just beneath the anterior iliac spine.<sup>2</sup>

Herpes zoster, also known as "shingles," is an acute, localized infection of the central nervous system involving the dorsal root ganglion.<sup>3</sup> It is caused by the varicella zoster virus which is a member of the Herpesvirus family.<sup>4</sup> Following a primary varicella infection, the virus remains dormant in the dorsal root ganglia, often for many years.<sup>4</sup> When the virus re-activates, pain within the dermatome results followed by an outbreak of vesicles.<sup>5</sup>

This case study highlights an instance where a nerve complaint presenting as meralgia paresthetica was later revealed to be a latent herpes zoster infection. Herpes zoster should remain as a differential for the clinician when diagnosing nerve-related complaints.

## Case presentation

A 27-year-old female presented with a primary complaint of numbness of the left anterolateral thigh, and low back

pain. The pain and numbness began insidiously four months prior while on a trip to Australia where she was hiking through rugged terrain, often sleeping on non-ideal surfaces and had no opportunity to have her symptoms investigated. There was no progression or resolution after returning from her trip, and the numbness still woke her up at night. The numbness was localized to the anterolateral aspect of her thigh, from her greater trochanter down to above her knee, never extending beyond the knee. The numbness occurred when lying supine or sitting for a prolonged period. Standing and walking provided some relief. She was not taking any medication for the current condition, and her family doctor recommended seeking chiropractic treatment, and strengthening her core. The pain was rated as a 2-3/10 and did not prevent her from engaging in her daily activities. Also, there was a slight burning sensation noted centrally in her L4/5 region, which originated when the numbness arose.

The patient was quite active and maintained a healthy lifestyle. Family history was unremarkable as was any personal history of back pain. The patient was concurrently being treated for a minor right knee injury at the clinic, and her health history was otherwise unremarkable.

Physical examination revealed full and pain-free lumbar ranges of motion, with large ranges of flexion and extension demonstrated. Orthopedic testing for the low back was within normal limits with Yeoman's, straight leg raise, Braggards, Bowstrings and sacroiliac joint compression not eliciting any abnormal response. Valsalva's was pain-free and did not increase the symptoms, with Kemp's revealing mild discomfort at L4/5 bilaterally. Motion palpation of the low back revealed a large range of motion throughout the lumbar spine with no restrictions or pain on joint challenge.

A lower extremity neurological exam was performed. Sensory testing for the lower limb revealed an area of de-

creased sensation located on the anterolateral aspect of the thigh, from the greater trochanter to three inches (~7.5 cm) superior to the lateral condyle of the knee. Testing was performed with soft touch and sharp and dull, with a decreased awareness within the area of diminished sensation. Strength testing for the lower limb was rated 5/5 bilaterally with reflexes for patellar and Achilles rated as 2+ bilaterally.

The patient was referred to her family doctor for radiographic examination of her low back including flexion/extension views to help rule out hypermobility as a cause for her neurological complaints. She continued treatment for an unrelated knee complaint, and the area of paresthesia on her left thigh was monitored.

Two weeks after the initial evaluation, the patient presented to her family doctor with 3-4 red scab-like lesions within the area. Her family doctor diagnosed them as "spider bites" and no medication was prescribed. Two days later, when more scab-like lesions appeared within the area she went to a walk-in clinic where a preliminary diagnosis of herpes zoster was made through visual inspection, and she was provided a prescription for anti-viral medication. No further testing was arranged by the physician, but a follow-up was encouraged to the patient if it did not resolve with the prescribed medication. The lesions disappeared within four to five days, and patient reported that she had complete resolution of her paresthesia within two weeks. Although no follow-up neurological or physical examination was performed, the patient relayed 3 months later that her resolution was maintained. It is worth noting that at the time of outbreak of her lesions, the patient reported to be under considerable emotional stress, as she was experiencing problems at work and had to relocate after a fire in her apartment.

## Discussion

### *Varicella zoster*

Varicella zoster (VZ) is a childhood disease commonly referred to as chickenpox, which presents with an itchy, blistered rash and is often associated with a fever and or respiratory symptoms.<sup>5</sup> VZ symptoms can present 10 to 20 days post infection and last up to two weeks.<sup>5</sup> Symptoms are typically mild for most children however can be severe in the immune compromised population. Prior to wide-spread availability of a vaccine, VZ infected 50% of children by age five, and 90% by age 12 in Canada.<sup>6</sup>

Pre vaccine statistics in Canada show that there were approximately 350,000 cases each year and 1500-2000 related hospitalizations.<sup>6</sup> Once infected with VZ the virus remains latent in the sensory nerve ganglion and can be reactivated later in life as the herpes zoster virus. Although rarely performed because the diagnosis is usually made on inspection of the rash, cultures from a lab can confirm the diagnosis of VZ.<sup>5</sup>

The live attenuated VZ vaccine became licensed in Canada in 1998 and available in Ontario in 2004.<sup>6</sup> The vaccine in children is estimated to be 94.4% effective following a single dose and 98.3% effective following a second dose.<sup>6</sup> The recommended doses of the vaccine should be given at 15 months old and at 4-6 years of age.<sup>6</sup> The vaccines are included in the publicly funded schedule and are offered free to all children in Ontario. A child born after 2010 is required to have the chickenpox vaccine unless they have a valid exemption. Adverse reactions to the VZ vaccine are uncommon and few have been reported. The most common reactions include pain, swelling, redness at the injection site, and a low-grade fever. Although this vaccine is most effective in children it should be highly prioritized in high-risk populations.<sup>6</sup> The risk of contracting the herpes zoster virus is 4-fold to 12-fold lower in those who have had the VZ vaccine in comparison to those unvaccinated.<sup>6</sup> There are documented cases where individuals who have been vaccinated against chickenpox may still get HZ years later.<sup>6</sup>

### *Herpes zoster*

Herpes zoster (HZ) virus also known as shingles, is the reactivation of the varicella zoster virus. HZ presents with symptoms commonly of the trunk such as pain and tingling in a unilateral dermatomal pattern, often with associated fluid filled blisters.<sup>7</sup> This typically occurs in those above 50 years of age, due to weakening of the immune system or when triggered by emotional stress.<sup>7</sup> Someone with HZ can transmit the virus to someone who has never had chickenpox or who is unvaccinated. The transmission of HZ occurs with contact of fluid from the rash of one person or via respiratory droplets.<sup>7</sup> A common complication of HZ is post herpetic neuralgia which often presents with debilitating neurogenic pain in a dermatomal pattern.<sup>7</sup> The incidence of postherpetic neuralgia reported in patients with HZ is 9-34%.<sup>8</sup> Canadian statistics show that each year there are 130,000 new cases of HZ, 17,000



Figure 1.  
Example of Herpes Zoster lesions. Diepgen TL, Yihune G et al. *Dermatology Online Atlas*. <https://dermis.net/shop/49/11410.jpg>

of which progress to post herpetic neuralgia.<sup>7</sup> The most useful and definitive laboratory test to diagnose HZ is a Polymerase Chain Reaction Test which involves swabbing open lesions during the acute phase of the virus.<sup>9</sup> Acyclovir is the usual first line antiviral in treatment of herpes zoster.<sup>9</sup> Psychological stress has been associated with triggering latent infections such as herpes zoster. This is a modifiable risk factor and should be incorporated into the patient's plan of management.<sup>10</sup> Although the most common location for HZ is the trunk, other dermatomal distributions should always be considered. Differ-

entials for HZ and postherpetic neuralgia should include discogenic irritation resulting in radiculopathy and other peripheral neuropathies.

Currently in Canada there are two different herpes zoster vaccines authorized for use: A live zoster vaccine Zostavax II and a recombinant zoster vaccine Shingrix.<sup>7</sup> These vaccines were developed to treat people who have previously been infected with VZ and are hosting a latent virus that could reactivate and cause HZ. Even those who have previously had the chickenpox vaccine are recommended to get the Shingrix vaccine, because it is still pos-



Figure 2.  
Example of Herpes Zoster lesions. Diepgen TL, Yihune G et al. *Dermatology Online Atlas*. <https://dermis.net/shop/49/11438.jpg>



sible to get herpes zoster after being vaccinated against chickenpox.<sup>6</sup> This vaccine is recommended for anyone above 50 years of age and is safe, cost effective and highly recommended for preventing HZ infection and associated symptoms such as postherpetic neuralgia.<sup>7</sup>

### Meralgia Paresthetica

Meralgia Paresthetica (MP) is a neurological condition caused by entrapment of the lateral femoral cutaneous nerve. MP presents with unilateral symptoms such as numbness, paresthesia, and pain in the anterolateral thigh, the associated sensory distribution of the nerve.<sup>11</sup> The most common location of lateral femoral cutaneous nerve entrapment occurs as it passes under or above the inguinal ligament.<sup>12</sup> Patients most affected by MP include females around 40-50 years of age and those with increased intra-abdominal pressure, including pregnant women and obese individuals.<sup>12</sup> The incidence of MP is approximately 3-4% per 10,000 person years.<sup>2</sup> MP can be classified as spontaneous, mechanical, or iatrogenic. Spontaneous MP results in those with conditions such as diabetes mellitus or hypothyroidism which predispose them to this condition.<sup>12</sup> Mechanical causes result from external forces compressing the nerve such as seat belts or restrictive clothing.<sup>12</sup> Lastly, iatrogenic MP occurs after surgical intervention such as a hip replacement surgery or an inguinal repair, where there has been direct nerve injury.<sup>12</sup>

Physical exam findings for a patient with suspected MP include sensory deficits within the associated dermatome, no change in symptoms between sitting and standing, potentially aggravated symptoms with extension, and symptom exacerbation with Valsalva maneuver or other testing causing an increase in intra-abdominal pressure.<sup>13</sup> Treatment for MP includes passive and active care, patient education and reassurance, discussion of weight loss if this is a contributing factor, ice and NSAIDs.<sup>13</sup> If symptoms persist beyond 1-2 months with conservative treatment, a referral should be considered.<sup>13</sup> The prognosis is good with conservative treatment, 85% of patients report spontaneous recovery.<sup>13</sup>

### Lumbar radiculopathy

Lumbar radiculopathy refers to the irritation of nerves within the spinal canal or as they exit the spine, resulting in symptoms that radiate down the lower extremities within the associated dermatome or myotome. Patients

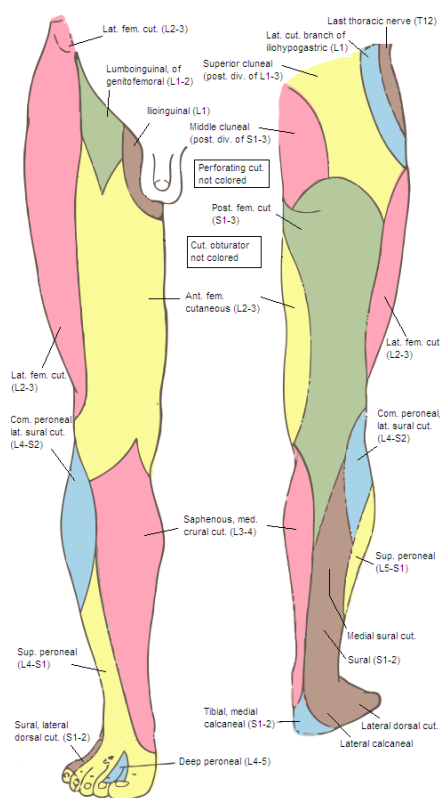


Figure 3.

*Lateral Femoral Cutaneous Nerve Distribution.*  
Henry Vandyke Carter, Public domain, via Wikimedia Commons. <https://upload.wikimedia.org/wikipedia/commons/b/bf/Gray826and831.PNG>

suffering from lumbar radiculopathy typically present with symptoms distinct from mechanical low back pain including sensations such as burning, stinging, weakness, and sensory alterations into the lower extremities.<sup>14</sup> Disc lesions and degeneration are the most common causes of lumbar radiculopathy, with other potential causes including spinal stenosis and space occupying lesions such as tumors or infection. Among patients with low back pain, radicular symptoms are present in 12-40% of cases.<sup>15</sup>

Physical exam findings for a patient with radiculopathy can include pain, weakness, and sensory disturbances within the affected myotome and dermatomal distribution.<sup>15</sup> Symptoms are often exacerbated with ranges of motion as well as with orthopaedic testing including Valsalva maneuver, slump test, and straight leg raise. Conservative

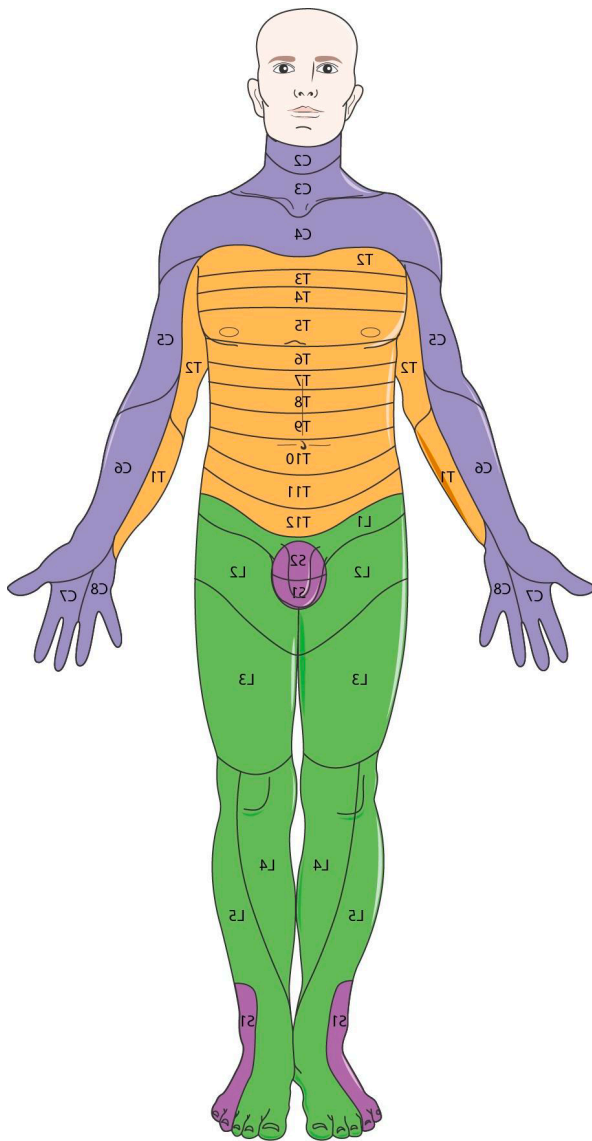


Figure 4.

*Dermatome Chart Anterior View. Servier Medical Art. Dermatomes, Servier Medical Art licensed under CC by 4.0. [https://smart.servier.com/smart\\_image/dermatomes/](https://smart.servier.com/smart_image/dermatomes/)*

management is typically the first line of treatment for radiculopathies. Pharmacological agents can be effective in reducing symptoms as well as nonpharmacological interventions such as acupuncture, spinal manipulation, and traction mobilizations.<sup>15</sup> If conservative management fails to alleviate the patient's symptoms, surgical intervention is considered.

### *Differentiation*

There are documented instances where nerve related complaints are caused by herpes zoster, but rarely in the upper leg. One report documented a 43-year-old who experienced subjective paresthesia and radiating pain down her leg after a work-related injury. A decrease in light touch sensation and pinprick in the left L5 dermatome was present, along with a clear MRI. Three weeks after presentation she developed "scabbed" vesicles and was diagnosed with herpes zoster.<sup>3</sup> Another case is of a 31-year-old who described a "sunburn on the inside" of the leg, with fluctuating intensity over the past year. No hard orthopedic signs were present, but crusted pustules were discovered over the left iliac crest, and the diagnosis of herpes zoster was made.<sup>3</sup> A final case report documented a 58-year-old woman with dull left leg pain of one-year duration. Sensory testing revealed hyperesthesia over the mid anterior thigh, to both pin prick and light touch. A provisional diagnosis of L2/3-disc lesion was made, but three days later a vesicular type of rash over the region of the left mid anterior thigh was discovered. Subsequently the diagnosis of herpes zoster was made.<sup>4</sup>

A common theme to the articles retrieved on herpes zoster is the retrospective nature of the diagnosis. Often the patient was being treated under a different diagnosis or the patient did not present until lesions were present, with these patients often suffering for weeks or months with pain and paresthesia. This is consistent with the clinical course of our patient, and the rapid resolution of her symptoms with the appropriate diagnosis and intervention. The contributing effect of emotional stress triggering the symptoms is also a commonality that clinicians should be aware of in herpes zoster patients.<sup>17</sup>

This case highlights the importance of including herpes zoster in the list of differentials when addressing nerve-related complaints. For conditions such as meralgia paresthetica or lumbar radiculopathy, clinicians should retain herpes zoster as a differential diagnosis.

Clinicians must be vigilant in conducting regular visual inspections of the affected area and carefully examining the skin for any presenting lesions. It is also important to ask these patients whether they have a history chickenpox or if they have received the varicella zoster or herpes zoster vaccine. Prompt referral for medical treatment is

crucial and can help prevent long-term sequelae such as post-herpetic neuralgia.

### Summary

Neurological conditions pose a diagnostic challenge to the clinician managing musculoskeletal complaints. While conditions like lumbar radiculopathy are more prevalent, it is also important to consider rare neurological syndromes such as both meralgia paresthetica and herpes zoster.

Herpes zoster is a difficult diagnosis to make and is often made retrospectively only after lesions appear. It is the author's hope that this case study will heighten awareness of herpes zoster as a viable differential for nerve-related complaints within the lower extremity.

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