Diagnosing Leishmaniasis in the Chronic Pain Management Setting: A Case Study

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ABSTRACT Patients with chronic pain on long-term opioid therapy usually follow-up every 30 days as part of their routine evaluations prior to receiving their prescriptions. Since pain physicians often act as a substitute for the patient's primary care provider, they must be vigilant about unexpected medical problems that can arise in these patients. We present the case of a 66-year-old female with multiple areas of pain that had previously been managed with long-term opioid therapy. Although she hadn't traveled internationally in years, the patient was able to travel to Peru with accommodations. When she returned, she experienced an acute exacerbation of knee pain from the intensive hiking regimen. The patient underwent an extensive work up led by pain management, which acted as a surrogate for primary care. After further evaluation of the patient's history and wounds, she was diagnosed with leishmaniasis, a parasitic infection that she likely acquired while in Peru. When treating chronic pain in patients on long-term therapy, the focus is often on opioid management. Pain physicians treating patients with new and unusual symptoms should be on the lookout for acute medical problems. Pain physicians should have parasitic infections, along with the acute bacterial or viral infections, on their radar, especially for patients returning from international travel.

KEYWORDS Leishmaniasis, Mucocutaneous Leishmaniasis

Introduction

Leishmaniasis is a parasitic disease transmitted to humans by the bite of infected female sand flies. It is endemic to countries in the tropics, subtropics, and southern Europe and has an annual incidence of approximately 2.5 million cases.[1] There are three primary forms of this disease: cutaneous, mucocutaneous and visceral. Skin lesions – primarily skin ulcers characterize cutaneous leishmaniasis. Mucocutaneous leishmaniasis involves lesions that result in the partial or destruction of the mucous membranes of the nose, mouth, and throat. Visceral leishmaniasis is characterized by enlargement of the spleen and liver, anaemia, fever and weight loss. [1] Cutaneous leishmaniasis is the most common clinical form of Leishmaniasis and primarily occurs in seven countries: Peru, Brazil, Algeria, Syria, Afghanistan, Saudi Arabia, and Iran.[1] Risk factors for developing cutaneous Leishmaniasis include travelling or mass migration to Leishmaniasis-endemic areas, working in professions involving farming or mining in these areas, and general risk factors such as immunosuppression due to HIV or organ transplant.[1,2,3] For Americans travelling to endemic areas, additional risk factors for the development of Leishmaniasis, in general, include outdoor activities, travel to rural sites, inadequate bed nets, and exposure to pets or cattle.[1]

Cutaneous lesions typically develop several weeks or months following exposure and progress from papules to nodular plaques to ulcerative lesions. The lesions can be painful, especially when near a joint, and are characterized by raised borders and a central crater. The development of satellite lesions, spreading from the primary lesion to surrounding skin, is common. Residual scarring is common once the lesions heal.[4,5] There are a few high-quality studies on the diagnosis and treatment of leishmaniasis. The diagnosis is often made from the history

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and physical exam. Wound cultures and serologic testing can be obtained. In some cases, molecular testing is involved.

Patients with chronic pain on long-term opioid therapy usually come to the office every 30 days as part of their routine evaluations before receiving controlled substance prescriptions. These patients are generally stable. Often, the pain physician acts as a substitute for the patient's primary care provider. Therefore, pain physicians must be vigilant about unexpected medical problems that can arise in these patients.

Patients with chronic pain may be at increased risk depending on their medical condition. However, our review of the literature reveals no direct relationship between Leishmaniasis and chronic pain. Our case report would be the first report of a link between chronic pain and cutaneous Leishmaniasis.

Our purpose in writing this review is to alert providers to stay vigilant about looking for acute, and even rare, medical issues in patients with chronic pain who report increased pain. Often, these patients' reports of pain are dismissed and attributed to their chronic pain syndrome.

We present the case of a patient who developed Leishmaniasis from recent travel. Her initial presentation was to an outpatient academically-affiliated private pain management office. To our knowledge, this is the first case of Leishmaniasis initially addressed in this setting.

Case report

This is a case of a 66-year-old female with multiple areas of pain that had been managed with long-term opioid therapy. The patient's neck pain radiated outward bilaterally to the shoulders and then distally down the arms to the hands. Her low back pain radiated through the buttocks posteriorly down the legs into the feet. These spinal symptoms were consistent with degenerative disc disease, spondylosis, radiculopathy, and myofascial pain. She also experienced pain in both groins, both knees, both feet, both shoulders and both hands consistent with osteoarthritis in these areas.

Diagnostically, the patient had an MRI of the C-spine that showed multilevel degenerative disc changes, a disc herniation at C4-5, and facet joint arthrosis most prominent at C6-7. An EMG/ NCS of both upper extremities showed evidence of C4, C5, and C6 nerve root pathology. She had open shoulder surgery for a rotator cuff tear in which degenerative changes including a large subacromial bone spur were visualized. The patient had an MRI of the right hip that showed a small short segment tear of the superior acetabular labrum. She had also had foot and ankle x-rays at the podiatrist's office revealing osteoarthritic changes.

Therapeutically, the patient had tried non-invasive interventions such as meditation and biofeedback for her chronic pain. She has had multiple courses of physical therapy, aqua therapy, massage therapy, and another therapeutic exercise. She had tried neuropathic agents such as pregabalin without relief. The patient is not a candidate for NSAIDs because of significant heartburn and hypertension. She had used various opioids including fentanyl patches, morphine and oxycodone. She had also had cortisone injections throughout the body and viscosupplementation in the knees. The patient had had multiple surgeries, including a right rotator cuff repair with the removal of a large bone spur. She has also had three arthroscopic surgeries on her left knee.

On physical exam, the patient was a well-appearing well-nourished female in no apparent distress. There were no rashes or lesions on her skin. The mucous membranes were moist. Sensory exam was normal. Motor strength was 5/5 in the elbow flexors (C5), wrist extensors (C6), elbow extensors (C7), finger flexors (C8), finger abductors (T1), hip flexors (L2), knee extensors (L3), ankle dorsiflexors (L4), first toe dorsiflexors (L5), and ankle plantar flexors (S1). Range of motion was relatively preserved except at the hips bilaterally.

The patient initially presented on a regimen of MS Contin 60 mg po q8 and Oxycodone IR 20 mg po q8, which provided effective analgesia. She was able to walk her dog around the city, use the subway stairs without difficulty, go for outings with her partner, engage in community activities, and enjoy retirement. She had constipation that was well-controlled with a combination of medication and diet. She had no nausea, itching, urinary retention, sedation, or confusion. Her heartburn remained unchanged.

Given that the patient had chronic pain and was stable and compliant on a regimen of long-term opioid therapy, she was accepted into the practice. Over the course of 6 months, we were able to lower her total opioid dose by approximately 20% using other multidisciplinary interventions such as physical therapy, cortisone injections, psychologic support for improved coping skills, and consultations with other providers. At the same time, the patient's functional status and quality of life improved.

Although she had not travelled internationally in years, she felt energized from the improvements in her chronic pain. With some accommodations, the patient was able to travel to Peru with her partner and climb Machu Picchu. When she returned, her chronic pain remained relatively well-controlled. She had experienced an acute exacerbation of knee pain from the intensive walking and climbing regimen. Nevertheless, we were able to taper her opioid regimen further.

At the next follow-up visit, we discussed using either a cortisone injection or viscosupplementation to manage her acute knee pain. The patient elected to proceed with a cortisone injection.

She incidentally mentioned discomfort on the buttock over the ischial bursa, which was examined before the knee injection. The patient had developed a maculopapular quarter-sized rash with an open dessicated centre. She reported it was painless and had been present for a few weeks. Her partner was the first one to notice it and said it initially looked like a pimple before it burst. She did not have any pain or itching over the rash. There was no streaking. There was no pus or bloody discharge from the wound. The mass was not fluctuant and could not be drained with ultrasound. The patient was not experiencing any fevers or chills.

Nevertheless, despite her disappointment, the cortisone injection was put on hold. The wound was delineated with a black marker. The patient was advised to set an appointment with her primary care physician for the treatment of possible cellulitis. The patient's primary care provider's office did not have availability for the next two months. We advised her to go to Urgent Care that same day.

The patient was evaluated in Urgent Care, where she has prescribed a course of Bactrim and given hot compresses to apply. Two days after the visit, she reported the rash had spread past the original demarcation we had drawn in the office.

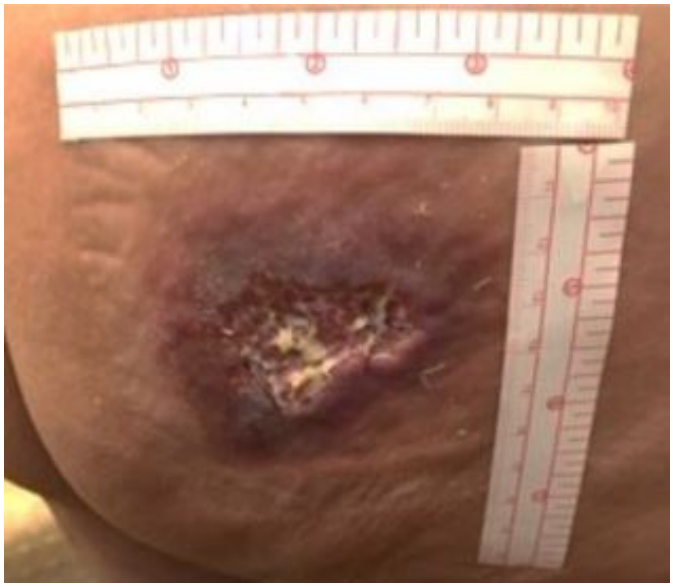
The patient was advised to return to Urgent Care. At this second visit, the patient has prescribed a course of Cefadroxil in conjunction with Mupirocin ointment. We recommended that the patient also set up outpatient appointments with Infectious Disease and Dermatology.

Seven days later, the patient emailed that the wound continued to grow and that it had opened up to form an ulcer. She returned to Urgent Care, where she has prescribed a course of Clindamycin and discharged. A nasal swab was obtained that was negative for MRSA.

Given the persistent redness, swelling, and pain, we advised the patient to bypass Urgent Care and to go directly to the Emergency Department setting. There, she was evaluated and started on IV Vancomycin. Oedema and erythema in the surrounding area decreased. The patient was discharged within 24 hours on a course of Doxycycline. Wound Care home visits were arranged. The multiple wound cultures that had previously been obtained came back negative for any bacteria.

Throughout the following week, the area continued to ooze white gelatinous discharge. It remained red, hot, swollen, and painful. The patient reported severe pain, particularly with the three dressing changes daily. We titrated her opioid medications to manage her acute pain. We advised the patient to return to the Emergency Department and to set up appointments with Dermatology, Infectious Disease, and Plastic Surgery.

After further evaluation of the patient's history and wounds, she was diagnosed with Leishmaniasis, a parasitic infection that she likely acquired while in Peru. The CDC was consulted for management recommendations.



Discussion

Treatment options for cutaneous leishmaniasis depend on the geographic region, Leishmania species, and the age and immune system health of the patient. Therapy is aimed at healing skin lesions and decreasing the risk of relapse.

Pentavalent antimonials considered the most prominent drugs of choice for clinical forms of leishmaniasis, are available in the United States through the Centers for Disease Control (CDC) Drug Service. They can be administered intravenously, intramuscularly, and as intralesional injections. Although they are usually effective at eradicating the disease, use of these antimonials can lead to treatment-resistant strains of leishmaniasis.[5]

Miltefosine, an oral agent, was approved by the Food and Drug Administration for the treatment of cutaneous leishmaniasis in patients at least one year of age. The regimen is taken over a series of 28 consecutive days.[5] The combination of oral

miltefosine (2.5 mg/ kg/ day for 21 days) plus thermotherapy (1 application of 500 degrees Celsius for 30 minutes) appears to be the most effective regimen for treating cutaneous Leishmaniasis.[6] However, because of limited access to miltefosine,[7] patients are often treated with pentavalent antimonials[8], and cryotherapy.[1] Antimony treatments and cryotherapy appear to be more effective when used in combination than when used as monotherapies.[1]

Many other treatment options have been explored for cutaneous leishmaniasis. These include alkaloids, quinones and steroids.[9] Amphotericin[10] and itraconazole have been used.[11] More recently, the combination of low dose pentavalent antimonials and immunotherapy composed of the dead promastigotes of L. amazonensis vaccine has been considered as a treatment option.[12]

Often, as in this patient's case, providers consult with the CDC for management.

Conclusion

When treating chronic pain in patients on long-term therapy, the focus is often on opioid management. Nevertheless, these patients can develop serious medical illnesses. Because they often visit the pain physician every 30 days, the pain physician may be the first point of contact for their other medical issues. Pain physicians treating patients with new and unusual symptoms should be on the lookout for acute medical problems. Pain physicians should have parasitic infections, along with acute bacterial or viral infections, on their radars, especially for patients returning from international travel.

Competing Interests

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