INTRODUCTION

Although Complex Regional Pain Syndrome (CRPS) is typically confined to one limb, its course is unpredictable. CRPS may eventually spread proximally or even affect other limbs. According to the study conducted by Maleki and et al (2000), three different patterns of spread have been identified: contiguous spread in which the spread affects already impacted areas, independent spread in which spread occurs in remote and non-adjacent locations, and mirror-image spread where the contralateral distribution is similar in location and dimension. In studies conducted by Van Rijn and et al. (2011), each pattern of spread has been associated with a different mechanism of action. Cortical mechanisms may be related to the development of ipsilateral spread; systemic mechanisms may correspond to an indiscriminate pattern; spinal mechanisms may correspond to contralateral spread. This report presents a case of CRPS contralateral/mirror-image spread without evidence of associated trauma.

CASE PRESENTATION

A 54 year old female presented to the interventional pain management clinic, status-post crush injury to her right foot, when a television fell onto it. Despite being treated with pain medications, including darvocet, and physical therapy, her pain did not subside. Her pain was described as constant, sharp, achy, and exacerbated by walking and standing. She was unaware of any palliative factors. Pain was rated a 4-5 /10 in severity. Associated symptoms included pins-and-needles like sensation in her right foot, increased redness, swelling, temperature changes, nail discoloration, decreased hair, and dry skin. Her past medical history included MVP, dyslipidemia, and syncopal episodes. Her surgical history included a C-section, cholecystectomy, hysterectomy, left oophorectomy, and left breast cystectomy. Her family history included heart disease and type 2 DM on both paternal and maternal sides. The PE showed a decreased sensory pinprick sensation of the right dorsal foot in a pattern with evidence of ipsilateral spread; systemic mechanisms may correspond to an indiscriminate pattern; spinal mechanisms may correspond to contralateral spread. This patient exhibited the mirror image type of CRPS spread. There was no known associated trauma to her contralateral foot, although the patient may have experienced spinal cord trauma with displacement of her spinal cord stimulator during a syncopal episode. This would support the theory of a spinal mechanism of CRPS in mirror-image spread and may possibly apply to other types of CRPS spread or even the initial disease onset.

DISCUSSION

This patient exhibited the mirror image type of CRPS spread. There was no known associated trauma to her contralateral foot, although the patient may have experienced spinal cord trauma with displacement of her spinal cord stimulator during a syncopal episode. This would support the theory of a spinal mechanism of CRPS in mirror-image spread and may possibly apply to other types of CRPS spread or even the initial disease onset.

In retrospective studies, Maleki and et al (2000) found that in CRPS patients with spread of symptoms the least frequent type of spread was mirror-image. Additionally, out of the four patients with mirror-image spread, only one patient presented with symptoms in the distal lower extremities, specifically the ankles, which comprised only 3.7 % of the total number of patients studied. Furthermore, that patient had a history of epidural injections for lumbosacral radiculopathy prior to symptomatic development in the contralateral ankle. These injections may have had an indirect traumatic impact to the second limb, as spinal mechanisms believed to play a role in contralateral spread could have been affected. Similar studies showed that only 7% of CRPS patients demonstrated spread from one limb to the contralateral limb without trauma to the second limb and 1.6% with sustained trauma to the second limb. (Van Rijn and et al., 2013)

The spread of CRPS is a concern that needs to be studied further, as patients suffer from chronic pain and disability. Therefore understanding the common patterns of spread, their prevalence, aggravating and relieving factors, and mechanisms of action may help to better understand the disease process. This can lead to better clinical management, delayed disease progression, and prevention of symptom onset at new locations.

REFERENCE


Figure 1: Right foot appearance several years after CRPS onset.
Note redness, swelling, decreased hair, and dry skin

Figures 2 & 3: Recent onset appearance of left foot.
Note contralateral similarity plus increased skin peeling

Case Report: A Female Patient Presents with Mirror-image Pattern Complex Regional Pain Syndrome of the Feet
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