## Letter to Editor

# A Rare Case of Lateral Premalleolar Adventitious Bursitis with Hemorrhage

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Dear Editor,

A 30-year-old woman presented with complaints of difficulty in wearing footwear due to the presence of a soft-tissue swelling in the region of the left ankle. She is a weaver by occupation and is used to sitting on her feet for prolonged periods. After an inversion sprain of her left ankle which occurred 2 years previously, which was treated conservatively by her physician, she began to feel discomfort in the ankle. She noticed that the swelling in the anterolateral part of the ankle gradually increased in size. The patient visited a nearby orthopedic clinic about a year after the episode of ankle sprain and was diagnosed with lateral premalleolar bursitis. Conservative treatment including several aspirations and corticosteroid injections failed to reduce the size of the bursitis, and the patient was referred for surgical treatment. Physical examination revealed a fluctuant and tense mass  $3.0 \text{ cm} \times 3.3 \text{ cm}$  in size, over the premalleolar region of the left ankle [Figure 1a]. High-resolution ultrasonography demonstrated a well-defined lesion with heterogeneous appearance and with surrounding increased vascularity and a diagnosis of lateral premalleolar bursitis was made [Figure 1b and c]. The patient underwent surgical resection of the mass and histopathological examination revealed hyalinized fibrous tissue with proliferation of microvessels, granulation tissue and the migration of inflammatory cells and numerous red blood cells in the synovium, compatible with chronic bursitis with hemorrhage [Figure 2]. The patient was followed up for 6 months without recurrence of bursitis. By definition, a bursa is a cystic lesion with a synovial lining located in regions exposed to repetitive friction or high pressure.<sup>[1]</sup> Trauma, infection, and autoimmune inflammatory diseases are some common conditions causing bursitis. Lateral premalleolar bursitis of the ankle although is rare is referred to as occupational bursitis in Western countries and is common in

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people of Asian countries who have the habit of sitting on their feet.<sup>[2]</sup> Robertson and Haywood in 1983 first reported lateral premalleolar bursitis among floor layers was who sit on their feet during work.<sup>[3]</sup> A study from Turkey reported 21 cases of lateral premalleolar bursitis in patients who regularly sat on the floor with their feet under the buttocks during prayer or at rest.<sup>[4]</sup> Foot bursae are classified into anatomical bursae and acquired adventitial bursae, which commonly develop due to excessive pressure in the regions of bunion. Further classification of bursae into subcutaneous bursae and deep bursae is based on their anatomical location. The malleoli of ankle lack anatomical bursa, however develop adventitious bursae often as a compensatory mechanism due to shear forces between the bony malleoli or excessive contact pressure. The bony prominences of the malleoli lack the soft tissue which has the inherent capacity to cushion the malleoli from excessive pressure. To compensate for this abnormal stress, the body responds over time by developing an adventitious bursa at the bony prominence. Adventitial bursae differ from anatomical bursae by having a thinker fibrous wall and are more susceptible to bursitis. On ultrasonography, anatomical bursa appears anechoic, cystic with clear fluid with wall thickness measuring < 2 mm, surrounded by echogenic bursal walls and peribursal fat interfaces. Ultrasonography can distinguish reactive fibrosis from adventitious bursa, as the latter appears hypoechoic or anechoic cystic fluid filled structure which is compressible. Adventitious bursal distention simulates a soft-tissue tumor due to its heterogeneous appearance, synovial hypertrophy, and surrounding increased vascularity. Adventitious bursitis is managed conservatively with methods

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**Figure 1:** (a) Clinical image demonstrating a soft-tissue swelling measuring  $3.0 \times 3.3$  cm over the premalleolar region of the left ankle. (b) High-resolution ultrasonography image demonstrating well-defined lesion with heterogeneous appearance and with surrounding increased vascularity simulating a soft-tissue tumor in a case of lateral premalleolar adventitious bursitis. (c) Power Doppler ultrasonography image of the lesion demonstrating surrounding increased vascularity suggesting inflammatory reaction



**Figure 2:** Histopathology of lateral premalleolar bursitis demonstrating hyalinized fibrous tissue with proliferation of microvessels and granulation tissue and migration of inflammatory cells and numerous red blood cells in the synovium

such as a compressive wrap, aspiration of bursa contents, local protection against stimuli and corticosteroid injection. Surgical resection may be required when complicated by hemorrhage as in our case.

### **Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understand that her name and initials will not be published and due efforts will be made to conceal her identity, but anonymity cannot be guaranteed.

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#### **Conflicts of interest**

There are no conflicts of interest.

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