Tendoachillis avulsion in osteomalacia

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Summary

Sixteen-year-old girl presented with generalized body pain with avulsion of tendoachillis on minimal trauma. Surgical repair led to complete recovery. Investigations revealed severe osteomalacia, which improved on supplementation. Surgical difficulty encountered was soft nature of bone, difficult attachment of tendon and delayed rehabilitation. Vitamin D evaluation is essential in young females presenting with generalized body pain and pain at attachments of strong muscles with bones.

KEY WORDS: osteomalacia; tendoachillis; rupture.

Case report

A sixteen-year-old girl presented with pain lower back, buttocks and proximal thighs of 2 months duration. Pain would be worst on getting up from sitting position, or walking up the stairs. Lying down in bed would be the best posture of comfort. There was also pain in bilateral heels on walking, with tenderness on palpation over calcaneum tuberosities on bilateral heels. There was no other localized tenderness, and no muscle weakness. Patient was advised radiological and laboratory tests.

On next follow up visit, patient presented with sudden onset pain in right heel with difficulty in walking one day duration along with swelling over calcaneal tuberosity. It started suddenly, on getting down from bed. Examination showed swelling on the calcaneus tuberosity posteriorly, and loss of continuity of Tendoachillis tendon on palpation. On squeezing calf muscle, there was no movement of foot. X-ray and ultrasound was done to confirm tendoachillis avulsion from calcaneus (Figure 1). Orthopaedic opinion was taken which confirmed the findings.

Blood tests showed very low vitamin D levels (6.0 ng/ml). All other laboratory tests were normal. X-ray of heels showed avulsion of tendoachillis. Pathological causes of vitamin D deficiency were ruled out.

Patient was started on biweekly vitamin D (60000 IU) and daily calcium (1000 mg) supplements. Patient was taken up for surgical repair of avulsed tendon (Figure 2). Surgical findings revealed extremely porous and soft calcaneus. Ethibond No 5 would cut through the calcaneum and multiple deep bites had to be taken to hold tendoachillis to the calcaneus. Histopathology was done to confirm osteomalacia. Patient was initially immobilized in a plantar flexed slab for 8 weeks and then started on exercises. Rehabilitation and vitamin D supplements were continued for 3 months till patient gained good ankle movements and normal vitamin D levels (55ng/ml).

Discussion

Low vitamin D is common in tropical countries due to dark skin, poor diet and insufficient sun light exposure during school/work hours (1, 2). Vitamin D is essential for good muscular and bony strength. Most patients with low vitamin D content present with diffuse low back and proximal thigh pains. Many have difficulty on walking or getting up from low lying chairs due to proximal myopathy (3, 4).

Occasionally, severe weakness of vitamin D may manifest as Looser’s zones, or true fractures. Some common fractures reported are neck femur (5) and vertebral fractures (6). Avulsion of tendoachillis from calcaneum has not been reported in low vitamin D. A young female is expected to have good vascularity and strength on this junction.

Surgical difficulty encountered was soft nature of calcaneus. Despite being weight bearing bone, calcaneus was very soft in nature, hence causing difficulty in providing a hold to sutures connecting tendoachillis to calcaneus. This delays the rehabilitation of repair, as early dorsiflexion can cause tendoachillis to cut through the calcaneus.
Vitamin D sufficiency also leads to relief of low back pain and thigh pain. Young females do not have many organic or structural causes of low back pain, and have low levels of vitamin D due to dark skin, poor diet, less sun exposure on account of day school or household work, especially in South Asia and Africa. It is strongly recommended to test for vitamin D levels in young females presenting with either low back pain or pain at junctions of strong muscles to their attachments.

References