Scapular Fracture as Isolated Manifestation of Charcot Neuroarthropathy in Syringomyelia

Sir,

Neuropathic osteoarthropathy or Charcot neuroarthropathy (CN) is a chronic, degenerative arthropathy associated with decreased sensory innervation. A 52-year-old female patient presented with pain over the right scapula for 5 days. She was unable to move her right upper limb following the event. Previous medical history included hypertension for 4 years on dietary modifications. There was no history of numbness, paresthesia, weakness, and trauma and no history of chronic drug intake or radiation.

Examination revealed tenderness over the right scapular region and restricted right shoulder movements (both active and passive) due to pain. She had no external injury, swelling, deformity, scar, sinus, and local rise of temperature over the right scapula. There was no limb length discrepancies, distal pulsations were normal, and there was no sensory or motor deficits.

Blood counts, erythrocyte sedimentation rate, C-reactive protein, and biochemical parameters were normal. X-ray and computed tomography of the right shoulder showed a displaced comminuted fracture of infraspinous scapula extending to the lateral aspect of the spine of scapula with no focal bone lesions (lytic or sclerotic) [Figure 1a and b]. Magnetic resonance imaging also showed the fracture with extensive edema of surrounding muscles [Figure 1c]. Workup for pathological fracture including serum protein electrophoresis, serum-free light chain assay, urine Bence–Jones protein, serum calcium, phosphorus, parathormone, and Vitamin D levels was normal. Magnetic resonance imaging of spine to analyze any focal bone pathologies showed pointed herniation of cerebellar tonsils 10 mm below the basion and opisthion line and intramedullary hyperintensities from C2 to C4 cervical spinal cord with focal cystic area at C2 (suggesting syrinx) [Figure 1d]. There were no focal lesions and the rest of the spine was normal. Since other causes for pathological fracture (systemic and local) were ruled out by appropriate tests, a possibility of scapular fracture secondary to CN due

to underlying syringomyelia was considered. Decompressive surgery was suggested by the neurosurgery department but postponed due to the patient's request. She was treated conservatively for the scapular fracture.

CN is a chronic, degenerative arthropathy associated with decreased sensory innervation. The most common conditions associated with CN are diabetes mellitus, syphilis, and syringomyelia.[1] The clinical manifestations include pain, slightly restricted joint movement, swelling, and damage of joint. Radiological features of CN include soft-tissue calcification, intra-articular fractures, bone fragmentation, dislocation, dense bones (subchondral sclerosis), degeneration, destruction of articular cartilage, loose bodies, and deformity.

CN caused by Chiari malformation with syringomyelia was reported in 34 patients previously. Among the 34 patients, 17 had involvement of shoulder, 17 cases involved the elbow, 2 cases each of the wrist and interphalangeal joints, and 1 case involving the hip and the knee joint each.[2] CN as the initial presentation in Chiari malformation with syringomyelia is extremely rare.[3-5] Causes of pathological fracture include osteomalacia, Paget's disease, osteitis, osteogenesis imperfecta, benign bone tumors and cysts, secondary malignant bone tumors, and primary malignant bone tumors. Our patient had no cause for the scapular fracture after extensive evaluation. Scapular fracture as an isolated manifestation of CN secondary to syringomyelia without any obvious radiological features was previously reported.[6]

This case reminds the readers to be aware of such rare presentations of syringomyelia, and to the best of our knowledge, only a single case of scapular fracture as an isolated manifestation of CN secondary to syringomyelia was previously reported.

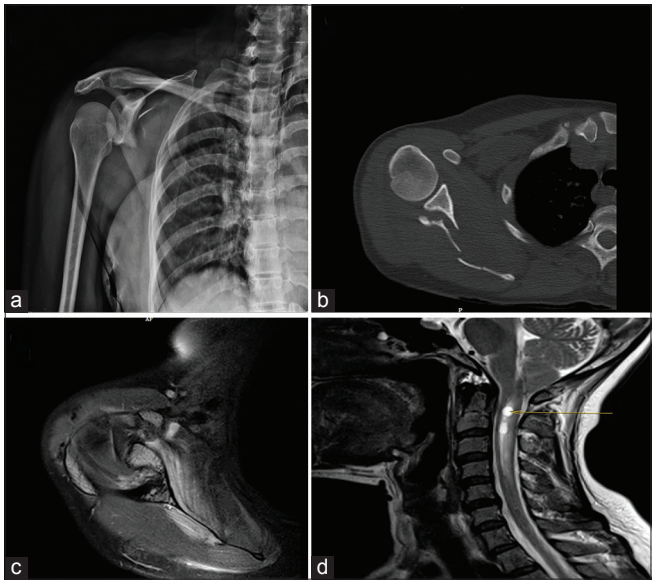

Figure 1: X-ray and computed tomography of the right shoulder showing the displaced comminuted fracture of infraspinous portion of scapula (a and b). Magnetic resonance imaging showing the fracture with extensive edema of surrounding muscles (c). Magnetic resonance imaging of the spine showing herniation of cerebellar tonsils and syringomyelia from C2 to C4 cervical spinal cord (d)

Declaration of patient consent

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

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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Quick Response Code:

Website: www.annalsofian.org

DOI: 10.4103/aian.AIAN_328_18

How to cite this article: Abdulla MC, Aryadan RA, Haniyya. Scapular fracture as isolated manifestation of charcot neuroarthropathy in syringomyelia. Ann Indian Acad Neurol 2018;21:343-4.