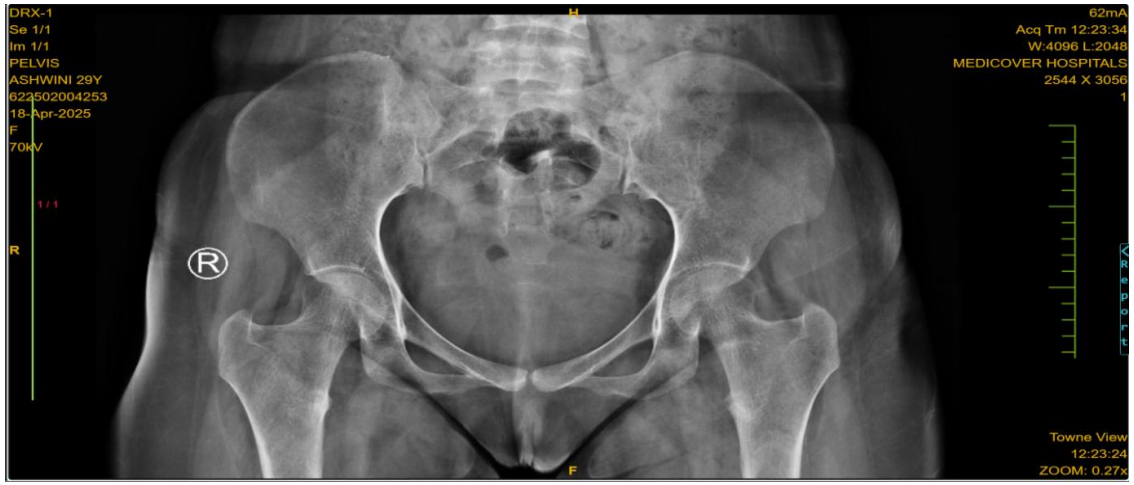
Introduction: Osteomalacia is a metabolic bone disorder associated with progressive softening of bone due to decreased mineralization of newly formed osteoid matrix at the site of bone turn-over, leading to reduced bone density[1]. Vitamin D deficiency is the most common nutritional deficiency in the world, commonly seen in adolescents, pregnant and lactating women. The prevalence of myopathy in osteomalacia ranges from 73% to 100%.

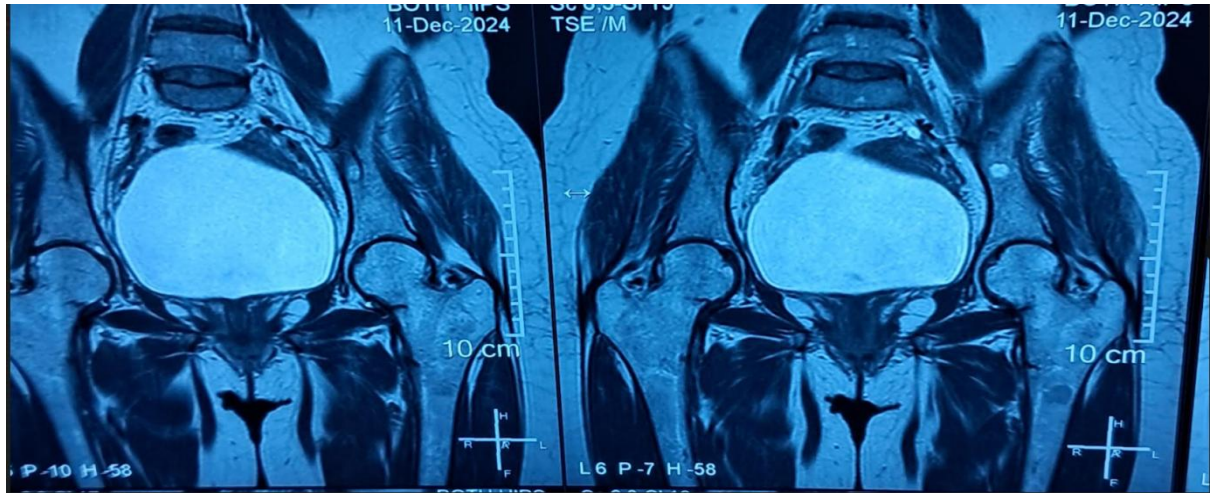
Aims:To analyse the clinical, laboratory and radiological features of patients,presenting with myopathy and osteomalacia & to create awareness regarding incidence and its response to treatment

Methods:In patients who came to Medicover hospital OPD with symptoms of myopathy were evaluated and case reports of them are included.The following information was collected: Clinical details, blood workup including serum calcium,phosphorus,vitamin D,serum alkaline phosphatase imaging results including xray pelvis ,MRI pelvis.

Case 1 A 29-year-old female, teacher came with complaints of pain in both thighs, hips, difficulty in walking since 1 year. She noticed difficulty in walking, stiffness in thighs.

On examination Truncal weakness+, POWER-4+/5 in bilateral hips, power in knees and ankle is normal. Left inguinal tenderness+. DTR-UL-2+, B/L L/L-3+. B/L Plantars - flexors, Sensory examination is normal.Serum calcium 8.2 mg/dl, Alkaline phosphatase 156 IU/L, Vitamin D 7ng/ml, CPK-Normal, MRI lumbar spine - flexion, extension is normal. X-Ray pelvis s/o looser's zones (Figure 2). MRI hip joints s/o Looser's zones in both femoral neck.In view of clinical history, examination, investigations patient was diagnosed as osteomalacic myopathy and was treated with calcium, vitamin D supplementation and pregabalin.In follow up her right hip pain disappeared, left hip, thigh pain reduced, she is able to walk independently but mild limp is present.





Case 2

A 17 year old female, came with complaints of left lateral abdominal pain associated with loin pain, radiating along left anterior aspect of thigh, left knee and ankle. Pain radiating from left scapula to trunk since 4 months, difficulty in walking since 4 months, difficulty in getting up from supine posture and from floor since 4 months. No symptoms in upper limbs. On examination patient is thin built, moderately nourished, height is 140 cm, power in proximal upper and lower limbs was 4/5, knee, ankle power-5/5, DTR-Upper limbs-2+, B/L Lower limbs - Knee, Ankle -3+, Truncal weakness+. B/L Straight leg raising test (SLRT), FABER'S were negative. X-ray pelvis done suggestive of looser's zones , x-ray lumbar spine showed loss of lumbar lordosis, early degenerative changes. Serum alkaline phosphatase was 838 IU/ml, serum calcium was 8 mg/dl, vitamin D was 10 ng/ml, CPK-normal. Patient was treated with calcium, vitamin D supplementation. Patient came for follow-up claimed significant improvement.

Discussion:Proximal muscle weakness (hip girdle and upper thigh muscles) and diffuse muscle pain often lead to instability of pelvis on standing and walking, as well as early presentation of gait abnormalities [2,3], the hip extensor muscles are commonly affected, leading to flexion posture at hip, stooped posture, and appearance of exaggerated lumbar lordosis. Bilateral weakness of the Gluteus Medius muscle eventually leads to waddling gait .The non-specificity of these signs and symptoms, which can also be related to rheumatologic disorders (polymyalgia, fibromyalgia, and ankylosing spondylitis), may significantly delay the diagnosis and appropriate treatment.spontaneous cortical bone cracks, also referred to as pseudo fractures, may occur. Vitamin D deficiency results in reduced calcium uptake in the sarcoplasmic reticulum, which plays a crucial role in muscle contraction. Vitamin D deficiency also leads to hypophosphatemia, further worsening of muscle contraction by disruption of glycolysis, reduced ATP production Pseudo fractures (also referred to as Milkman lines, Looser zones, or insufficiency/stress fractures) appear as a radiolucent, transverse bands ,they are more common in the main load-bearing bones such as the proximal and diaphyseal femur (subtrochanteric region), pelvis, and metatarsals and are often symmetric and bilateral.The decreased number and diameter of the fast-twitch type II Fibers, the first to be recruited to avoid falling or for major muscle efforts, has been demonstrated [4]. ALP is the serological marker of overt osteomalacia, especially when it is persistently elevated. .Recommended intake of vitamin D varies among different guidelines (800–1000 IU)Treatment with adequate doses of calcium and vitamin D has shown to improve symptoms and increase muscle power, improving the activities of daily living and general wellbeing of the patient [5,6].

Conclusion:1.Patients diagnosed with osteomalacic myopathy often suffer from proximal weakness, leading to early gait changes, and difficulty in climbing stairs and getting up from the ground.

2.Proximal myopathy and gait changes are completely reversible with adequate treatment.

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6.Osteomalacic Myopathy and Early Gait Changes-Dr Subuhi Nishat etal published in Int,journal of medical research -2025