Case Report

Myositis Ossificans Circumscripta: A Case Report

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Abstract

Introduction: Myositis ossificans circumscripta (MOC) is a form of heterotopic ossification (HO) that is benign in nature but may appear clinically and radiologically as a malignant neoplasm. A 26 years old male patient of traumatic spastic paraplegia, secondary to compression fracture of D8-D10 vertebra presented with severe LBP, more around right buttock with hip movement. During investigations, the presence of large heterotopic ossification mass was noted on rightside of pelvis. Diagnosis was confirmed by blood investigations, x-rays, MRI. Malignancy was excluded by bone biopsy. Case was managed conservatively, the orthosis was changed. Patient was discharged in early July 2012 with significant improvement in pain (VAS-1) and ROM of hip with proper counselling to patient, care-givers and necessary advice for resettlement.

Keywords: **Myositis ossificans circumscripta, gluteal region, traumatic, changed orthosis.**

Introduction:

Myositis ossificans circumscripta (MOS) is a form of heterotopic ossification that is benign in nature but may appear clinically and radiologically as a malignant neoplasm[1]. There is no sex predilection, however, majority are reported in young adult males[2] and less commonly in children[3]. Heterotopic ossification is most commonly associated with musculoskeletal trauma, central nervous system disorders or injuries, severe burns, and elective surgery[4]. Any part of the body may be involved, but the anterior thigh is the most common site[5]. Many classifications of this condition have been suggested. Noble classification includes three types: 1) *Myositis ossificaiis progressiva.* This is a metabolic disorder occurring in children with widespread metamorphosis of muscle into bone, all of the skeletal muscles becoming involved progressively. It is ultimately fatal. 2) *Traumatic myositis ossificans circumscripta.* This follows local trauma which may be either acute (a single injury), or chronic (repeated slight injuries or an occupational injury, such as strain of the adductor longus tendon in jockeys). 3) *Myositis ossificans circumscripta without history of trauma.* This is usually found in paraplegia, chronic infections, burns and poliomyelitis, but may occur independently in these conditions[6]. We report a case of MOC arising in the right side pelvic region of a young patient without any obvious history of trauma.

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Case Report:

A 26 years old unmarried male patient of traumatic spastic paraplegia since 12-07-2010 was presented due to compression fracture of D8-D10 vertebrae. Admitted on 04-04-2012 with complaints of severe LBP more towards right gluteal region and right hip on movement since last 4 months. Pain was severe aching occasionally shooting and was associated with a sense of tightness of the lower limb muscles, interfering in ADLs. No history of any obvious trauma in recent past was there. In past

he was admitted at NIOH on 09-08-2010 for institutional rehabilitation. At time of discharge on 19-01-2011 he had independence in most of the ADLs, was able to stand in parallel bar with KAFO (with supratrochanteric thigh shell) (Figs 1 & 2).

Patient was taught to do self CIC for bladder evacuation and self manipulation technique for bowel evacuation. There was history of 3-4 incidences of UTI which was controlled by proper antibiotics.

Patient lived in a rural area along with the parents and his only younger brother. There was cemented flooring inside home. There was no ramp for wheelchair access. He had mobility in home on wheelchair. His education is up to Intermediate and was working as an electrician before injury.

On **physical examination**, he has tenderness above the right greater trochanter, **Right hip:** Passive abduction restricted due to pain-up to 30° and also extension, pain intensity with movement on VAS-9. Bilateral gastro-soleous tightness with passive dorsiflexion up to 90°.

Figs 1 & 2- *Patient Standing in a Parallel Bar Wearing KAFO with Supratrochanteric Thigh Shell*

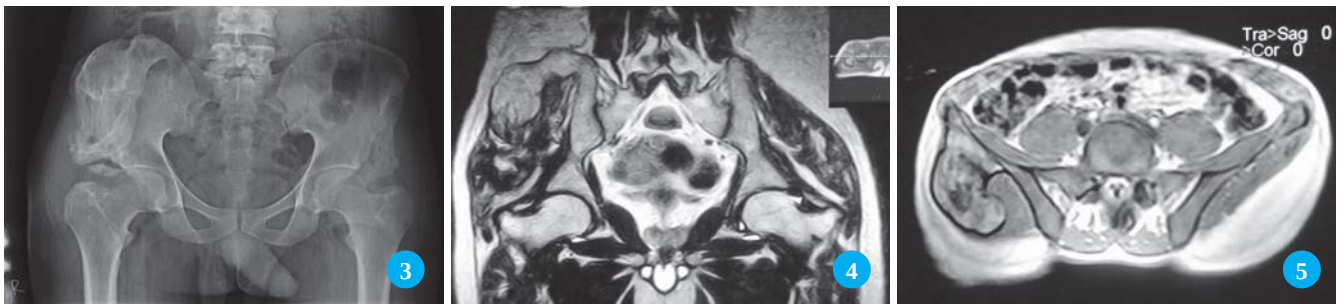

Fig 3- *AP Pelvis Radiograph Revealed Large Irregular Ossified Mass around Right Pelvic Bone*
Figs 4 & 5- *MRI of Pelvis with Both Hips T1 & T2-weighted Images*

No other contractures. Mild wasting in lower limbs, tone-grade 2 spasticity (MAS), voluntary motor control-absent in both lower limbs, B/L patellar and ankle clonus present, neurological level: D7, ASIA score-A.

Lab findings: Haemoglobin-13.0 g/dl, serum alkaline phosphatase-382 micron/l, CRP-24 mg/l (1:4 dil), serum CPK-280 micron/l, serum calcium-8.9 mg/dl, serum phosphorus-5.3 mg/dl.

To confirm the diagnosis x-ray and MRI pelvis with both hips was done which shows bilateral gluteal compartment ossified mass of heterogeneous signal intensity marked on right side (Figs 3 - 6). The mass is in the space between gluteus maximus and medius and is extending superiorly. It is adherent to superior part of the iliac bone. The lesion is lobulated in appearance and well defined. Hip joint normal. Was it post-traumatic ossification?

Figs 6 & 7- *Patient Standing in Parallel Bar with New KAFO*

To exclude the possibility of primary bone tumour/ secondary metastasis, a bone biopsy was done which showed trabeculae of lamellar bone lying in a dense hyalinised fibrocollagenous tissue. There was no evidence of malignancy.

Patient was treated with indomethacin 75 SR mg OD for 6 weeks, residronate 35 mg weekly 6 weeks, calcium 500 mg OD 6 weeks, vitamin D-0.25 mg OD 6 weeks, gentle passive ROM exercises. The KAFO was changed (Figs 6 & 7).

Re-evaluation (Tables 1 & 2)

Table 1: *Re-evaluation*

On admission	After 6 weeks
Pain intensity on VAS-9	Pain Intensity on VAS-1
Not able to do most of ADLs independently	Able to do most of ADL activities independently
Not able to don & doff KAFO	Able to don & doff KAFO
Not able to stand with KAFO	Able to stand with KAFO in parallel bar.
Tone B/L lower limb spasticity was 2 (MAS)	Tone B/L lower limb spasticity decrease to 1+

Table 2: *Re-evaluation*

On admission	After 6 weeks
ESR-30 mm	ESR-22 mm
S. Alkaline Phosphatase -382 micron/l	S. Alkaline Phosphatase -330 micron/l
S. CRP-24 mg/l (1:4 dil)	S. CRP-negative
S. CPK-280 micron/l	S. CPK-39 micron/l
S. phosphorus-5.3 mg/dl	S. phosphorus-3.6 mg/dl

Discussion:

Although there is no obvious history of any trauma in recent past in our patient but previously given KAFO(with supratrochantric thigh shell) for better standing balance as seen in Figs 1 & 2, which might be a potential source of repeated microtrauma around the pelvic region so the supratrochantric portion of KAFO was removed and a standard KAFO was given (Figs 6 & 7). To exclude possibility of primary bone tumour or secondary metastasis, a bone biopsy was done. The patient was treated conservatively with NSAIDs, bisphosphonate and passive ROM exercises. As per literature etidronate is mentioned for treatment of HO but due to unavailability of this drug we talked with pharmacologist and he advised a new and more potent drug residronate that is a bisphosphonate. Some home modification is done by patient himself in consultation with us for approach to different area in house including toilet. Mobility outside home is not possible because road to community is uneven and sandy. He has got some land in nearest district's market area so he was advised to make two rooms on the ground floor there, one for shop and other as a residence so that he can earn his livelihood.

Conclusion:

Patient was discharged in early July 2012 with significant improvement in pain (VAS-1) and ROM of hip with proper orthosis, counselling to patient and care-givers. Necessary advice for resettlement was given.

Take home message:

As per literature standard KAFO is advised, so before doing any enthusiastic modification of a standard prescribed orthosis one must consider the possibility of micro trauma leading to HO which in turn makes the case difficult for rehabilitation.

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