

CONFERENCE ABSTRACT

Care-coordination in the rehabilitative treatment and management of Neurogenic Heterotopic ossification

17th International Conference on Integrated Care, Dublin, 08-10 May 2017

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Introduction: Neurogenic heterotopic ossification (NHO) is a disorder of abnormal bone formation affecting one in five patients sustaining traumatic neurological injury. Ectopic bone forms around large joints in characteristic patterns, causing pain and limiting movement, thus limiting activities and reducing participation.

Mainstays of management include primary and secondary prevention with radiation and non-steroidal anti-inflammatory drugs (NSAIDs). Once matured, surgical excision of HO may be indicated. However, at later stages, the individual will have transitioned out of the acute hospital system and therefore co-ordination between the different specialities and organisations can be challenging. The role of the Rehabilitation Medicine Specialist in such cases is important to ensure full implementation of the pathway of care and thus improve outcomes for these complex patients.

Subjects: 4 patients with Operative management of Heterotopic Ossification following Traumatic Brain Injury

Methods: Retrospective analysis of the clinical case notes of those patients with multidisciplinary rehabilitation treatment and management of heterotopic ossification following traumatic brain injury (TBI) over a 2-year period where the Rehabilitation Medicine Consultant co-ordinated the different elements of an integrated care pathway. Demographic details were obtained and a Garland classification assigned to each patient. The interval between head injury and surgical intervention as well as reasons for intervention was documented and clinical outcome noted.

Results: 4 patients were identified 3 female and 1 male. Average age was 35.5 years (range 25-48). The mean interval between accident and referral for surgical intervention was 1 year (range 6 months – 4 years).

All 4 patients were Garland class V and all had a history of significant trauma resulting in multiple fractures as well as TBI. All were referred because of pain and reduced range of motion (ROM). A management plan had been agreed with Orthopaedics, Metabolic medicine and Rehabilitation Medicine for all cases including the medical surgical and multidisciplinary rehabilitation aspects of the plan.

The treatment plan in each case consisted of X-rays of the affected areas and pre-op CT and bone scan. All had high dose pre-op bisphosphonate therapy to reduce the risk of recurrence of NHO, which was continued post op in reducing doses for 4 months.

Outcome: Post-surgery, all patients had a favourable outcome with all patients experiencing reduced pain (mean VAS reduction 3) and improved ROM (mean increased ROM 30o), which had a positive functional outcome (mean total FIM increase of 30). 1 patient is now ambulatory. 1 patient developed a wound haematoma and chest infection post op. There was no recurrence of the NHO.

Conclusion: The development of a care plan involving different specialites in different institutions can be challenging. In the absence of an integrated EHR, excellent communication is required to ensure that each element of the plan is implemented in a timely manner. It would appear that multidisciplinary coordinated care planning for multidisciplinary surgical intervention for HO in patients with TBI can have a positive functional outcome.

Keywords: neurogenic heterotopic ossification; care-coordination; rehabilitation
