

70773-Answering Reviewers

Reviewer 1:

"Bilateral hip heterotopic ossification with sciatic nerve compression in a pediatric patient: An individualized surgical approach" is a manuscript of high scientific interest and value, especially for the rarity of the pathology in question in the pediatric population and for its bilateral presentation. The work is worthy of publication but first I would recommend to deepen, in the the discussion, all the possible treatments in this particular segment of the population (alternative treatments to surgery?) and to deepen the surgical access used (advantages and disadvantages?) and comparing it with other surgical approaches if available.

Science editor:

Specific Comments To Authors: The manuscript elaborated a case of Bilateral Hip Heterotopic ossification with sciatic nerve compression on a pediatric patient. But I don't see where the personalized treatment described by the author is reflected? Can the author consider integrating relevant literature for analysis? Or the same type of patients according to what characteristics, what treatment has advantages.

Answering Science editor and Reviewer, we deepen the surgical approach and other possible treatments mainly the radiation but we highlight the fact that on this particular case with mature NHO lesions the conservative treatments aren't very successful and surgery is the best option (this is based mainly in adult literature because this topic is sparse in pediatric literature):

"Pharmacological therapy with bisphosphonates and indomethacin has demonstrated efficacy in the early inflammatory phase of NHO, reducing disease progression. Non-steroidal anti-inflammatory drugs, particularly indomethacin, reduce the incidence of NHO in patients with spinal cord injury[4] but increase the risk of haemorrhagic complications that could be serious in patients with sickle cell trait, such as ours.

Furthermore, peri-articular radiation is considered another valid early-stage therapeutic modality that has been found to be more effective than non-steroidal anti-inflammatory drugs[5]. It is considered useful for inactivating the high mitotic rate of the pluripotent osteoprogenitor cells recruited by the inflammatory cascade and their differentiation into osteoblasts and chondrocytes[6]. Low-dose radiation therapy administered preoperatively or less than 72 h postoperatively represents an effective treatment[7], not only in reducing the size of NHO lesions[8] but also the risk of recurrence[9], with minimal side effects[10].

Another conservative treatment applied is physical therapy, but whether it plays a significant role in the mitigation of NHO lesions remains unclear. It has been suggested that forced manipulation of the extremity can induce HO formation by increasing inflammation[11], whereas lack of movement can cause HO formation and progression to ankylosis. Cautious use of a gentle range of motion is considered the best approach. In this case, we believe that recurrence of the HO on the right hip was promoted by the immobilization incurred while the patient waited for surgery of his left hip. It was only after both hips were operated and freed of ossification, and mobilization was resumed that the HO on the right side stopped progressing. Besides that, postoperative low-dose radiation therapy could have also contributed to minimization of the high risk for recurrence of HO lesions after resection on the right hip.

For this particular case, the patient presented with severe pain, gait impairment and the presence of signs of neurological compromise. It is generally agreed in the orthopaedic community[12] that fully matured hip HO limits the use and efficacy of conservative treatment modalities as curative options. Therefore, surgical intervention remains the mainstay for treatment of mature HO lesions”

We also exposed the personalized surgical approach with more detail, comparing it to other approaches in terms of advantages and disadvantages:

“Furthermore, the location of the heterotopic ossification on the hip, which will guide the choice of surgical approach, is largely determined by certain aetiologies; for example, posterior lesions, like in our case, are typically associated with cerebral anoxia.

In our case, the heterotopic calcification had an extension below the plane of the greater gluteus muscle, from the trochanteric region to the ischiatic region. Traditional approaches (such as the posterolateral Gibson approach) do not allow for a clear exposition of this space. The transgluteal approach has the disadvantage of muscle denervation, and proximal disinsertion of the greater gluteus muscle may jeopardize its vascularization (gluteal artery, branch of the internal iliac artery). Thus, through an S-shaped incision that allows a wide area of exposure, the distal tendinous release of the greater gluteus muscle and the progressive disinsertion of this muscle exposes the entire plane of the rotators and hamstrings (where the major HO lesion lies) without compromising innervation and vascularization.”

Company editor-in-chief:

I have reviewed the Peer-Review Report, full text of the manuscript, and the relevant ethics documents, all of which have met the basic publishing requirements of the World Journal of Clinical Cases, and the manuscript is conditionally accepted. I have sent the manuscript to the author(s) for its revision according to the Peer-Review Report, Editorial Office’s comments and the Criteria for Manuscript Revision by Authors. Please provide the original figure documents. Please prepare and arrange the figures using PowerPoint to ensure that all graphs or arrows or text portions can be reprocessed by the editor.

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