Author's response to reviews

Title: A flexion reminder device to discourage recurrent posterior dislocation of total hip replacement

Authors:

King Wong (kinghwong@hotmail.com)
Manoj Sivan (drmanojsivan@yahoo.com)
Gordon Matthews (mgm@doctors.org.uk)

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Response to reviewer’s comments (also added to the revised manuscript)

Comment: More information about case history and use of device needed
Response: The first dislocation was 6 weeks post op when she was bending down to pick up an object from the floor. Three further dislocations resulted when getting into bath tub and sitting in a low sofa. The patient recognised that each dislocation was resulting from unsafe flexion at the hip and she herself came up with the idea of a reminder device which can be worn on the thigh. The “flexion reminder” device was designed based on this idea. Beyond 70 degrees of flexion, the padded top portion of the device hitches against the groin crease and reminds the patient not to flex further. This device can be worn either under or over clothing. It can be worn continuously for the whole day including sleeping. The sponge top of the plastic device can be easily dried if worn while bathing. One can sit in high chairs while wearing it. It is very secure when worn and does not loosen when worn even continuously for a whole day. The device is light weight and cheap to manufacture.

Comment: More clinical information needed (examination and X-ray)
Response: Relocation of the hip was done under general anaesthesia. Post reduction examination under the effect of anaesthesia, the hip was stable within the safe range of movements. X ray of relocated hip arthroplasty did not show any component malposition (Fig 1 and 2 added).

Comment: Is it only for posterior approach?
Response: This device is to prevent recurrent posterior dislocation. Posterior dislocation is mainly seen after posterior approach, it is however also encountered in lateral and anterior approaches. The movements associated with the risk of posterior dislocation are excessive flexion, adduction and internal rotation. This device serves as a reminder of unsafe flexion.

Comment: Can patients sit on ordinary chair while wearing it?
Response: The device can be worn while sitting in high chairs. As long as there is no flexion beyond 70 degrees, the device is not uncomfortable while sitting.

Comment: Can the device also prevent adduction and internal rotation?
Response: In addition to preventing unsafe flexion, one could argue that the device could potentially also be used to prevent unsafe adduction and internal rotation by strapping the device to the thigh more medial to the standard position (Fig 4 demonstrates the standard position to prevent unsafe flexion alone).

Comment: What is its efficiency in larger series?
Response: We plan to recruit suitable patients with primary or revision hip arthroplasty where the problem is recurrent posterior dislocation with no indication for revision.
surgery. Patients who are non compliant with abduction braces could be tried with this device.