

Clinical Image

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A hidden etiology of dislocation after total hip arthroplasty: The sagittal imbalance of the spine

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Highlights

1. Dislocation is a complicated condition after total hip arthroplasty, and has been a research focus world widely.
2. Recent studies unveil the possible approach of an imbalanced spine on the stability of hip after THA, but the mechanism is not clear.
3. This special case broadens hip surgeons' philosophy to diagnose hip dislocation from a holism perspective, and inspire-ship surgery in a spine surgeon's view.

Image description

The pelvis and spine X-rays of a 64-year-old female patient complaining of habitual dislocation within in one year after total hip arthroplasty (a). The component angles were in Lewinnek safe zone, and no abnormality were found in femoral offset and leg length (b), which constitutes difficulty to find the truth.

The lateral view of spine in standing and sitting positions un-

veil the hidden etiology of dislocation. The degeneration and decompensation of the spine reduce the increase of Lumbar Lordosis (LL) for weight-bearing when she stands, and attenuates the retroversion of the pelvic to open the acetabulum to accommodate hip flexion when she converted to sit down [1]. And additional imbalance in sagittal alignment was also evidenced by aberrant Sagittal Vertical Axis (SVA) and the T1 Pelvic Angle (TPA). These pathologies are defined as disturbance to the hip-spine harmony, which induce paradoxical hip-spine coordination and anterior impingement (red arrow) resulting posterior hip dislocation (c,d) [2,3].

A partial revision surgery, composed of adjusting the hip-spine relation under supine direct anterior approach, amendment of the component angle and hip rotation center, as well as a dual-mobility total hip system, properly addressed the dilemma of this patient (e). This special case broadens hip surgeons' philosophy to diagnose hip dislocation from a holism perspective, and inspires hip surgery in a spine surgeon's view.

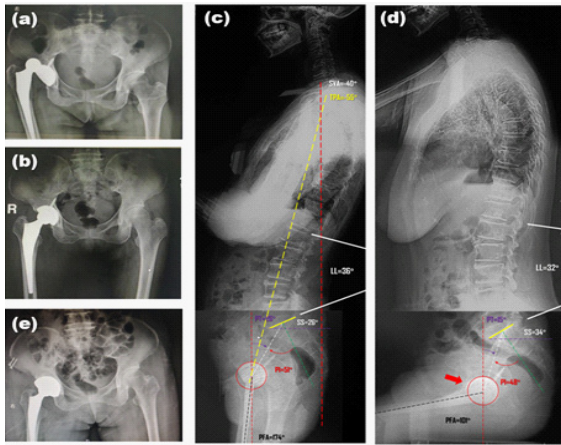


Figure 1:

Declarations

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