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Five cases of early dissociation between the bipolar hip endoprosthesis cup components; either spontaneously or during reduction maneuvers

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ABSTRACT

Bipolar hemiarthroplasty is frequently used in the treatment of intracapsular hip fractures. Dissociation of the bipolar components can happen during the hip dislocation, the reduction maneuvers, or spontaneously without any dislocation. Here we report early dissociation between bipolar components in two cases during the attempt of closed reduction maneuvers and three cases with spontaneous dissociation without any trauma. To prevent or minimize this complication; the reduction of dislocated hips must be achieved very gently under general anesthesia with fluoroscopic control. During the initial operation the surgeons must be sure that the bipolar components are locked to each other and after final reduction, especially in osteoarthritic acetabulums, that the cup position is not in varus position.

Bipolar hemiarthroplasty is frequently used in the treatment of intracapsular hip fractures.[1,2] Although the dissociation between the bipolar components is a very rare complication it has very serious results and almost always leads to reoperation with revision of the prosthesis. In this regard, there are very few cases reported in the literature.[3–21] Dissociation can happen during the hip dislocation, the reduction maneuvers, or spontaneously without any trauma. Here we report dissociation between bipolar components in two cases during the attempt of closed reduction maneuvers and three cases with early spontaneous dissociation without any trauma.

Case reports

Case 1

Two years ago a 71-years-old male patient was treated with a bipolar endoprosthesis (TST, Istanbul, Turkey) after sustaining a subcapital fracture of his right femur (Fig. 1a). Three months after the operation, during climbing stairs he suddenly felt a pain in his thigh, and could not walk anymore. The x-rays revealed the dissociation between the polyethylene cup and the prosthetic femoral head with both items still in the acetabulum (Fig. 1b). During the open reduction, the polyethylene cup and the head were found to be completely separated because of the failure of the locking mechanism. No erosion was seen. Both the polyethylene cup and the head were revised with the same size (Fig. 1c). The hip stability was tested. No problems have been experienced in the postoperative period.

Case 2

Five years ago, an 85-years-old male patient presented with a right side subcapital femur fracture and was treated with bipolar hemiarthroplasty (Ortopro, İzmir, Turkey). Three months after the operation he sustained a posterior hip dislocation during wearing his shoes (Fig. 2a). Closed reduction was attempted in the emergency department. During routine maneuvers, dissociation between the polyethylene cup and the small femoral head occurred. The cup was out of the acetabulum while the small femoral head was fully reduced (Fig. 2b). Subsequently open reduction was performed. The capturing ring of the polyethylene cup was found open but without any signs of erosion on the locking mechanism. The polyethylene cup was revised with the same size (Fig. 2c). The stability and acetabulum coverage were tested. Hip abduction

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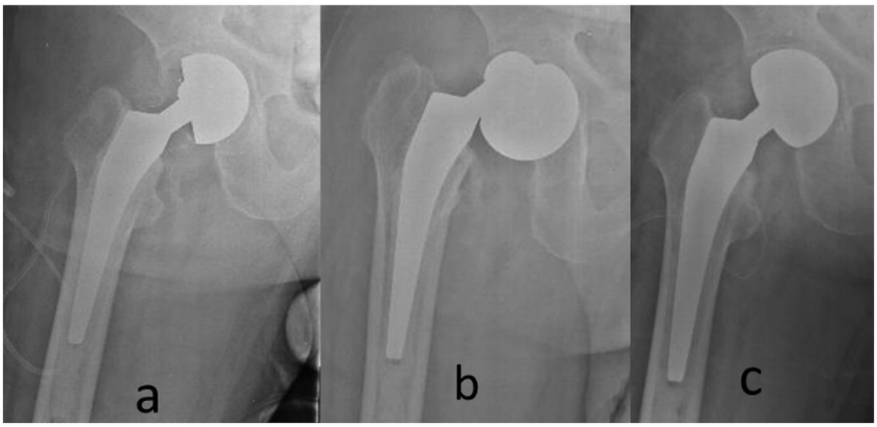

Fig. 1. (a) Case 1: Plain roentgen showing initial excessive varus position of the bipolar cup. (b) Case 1: Plain roentgen revealing dissociation between bipolar components. (c) Case 1: post-operative image after revision of the bipolar components.

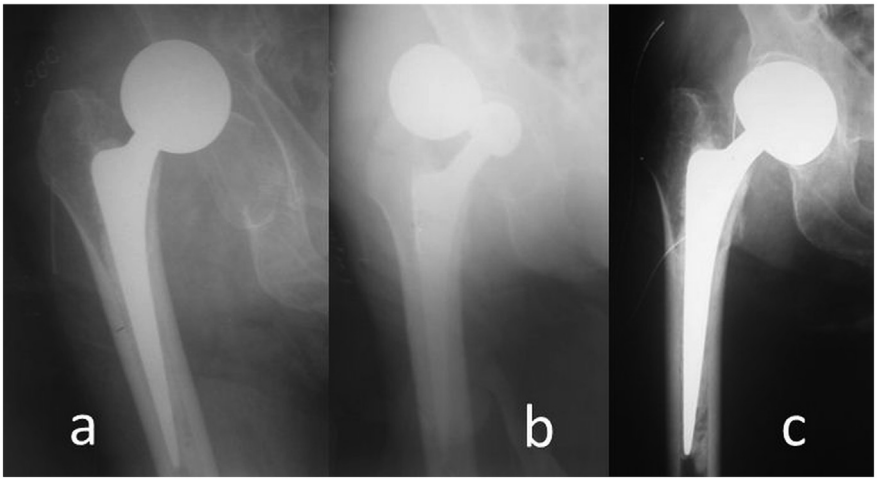

Fig. 2. (a) Case 2: Plain roentgen showing posterior dislocation of the hip. (b) Case 2: Plain radiograph showing dissociation between bipolar cup components after reduction maneuvers. (c) Case 2: Postoperative appearance after revision of the bipolar cup.

orthesis was used for 8 weeks. No further complication was seen during the postop period.

Case 3

One year ago a 75-year-old female patient was treated with a bipolar hemiarthroplasty (TST, Istanbul, Turkey) after a subcapital fracture of her left femur. Six weeks later, while getting out of bed, she sustained a posterior hip dislocation (Fig. 3a). She was admitted to the emergency department of our hospital. Closed reduction was attempted here. During routine maneuvers dissociation between the polyethylene cup and small femoral head happened, with the cup out of the acetabulum and the small femoral head fully reduced in the acetabulum (Fig. 3 b). Subsequently open reduction was performed, revising the polyethylene cup with the same size (Fig. 3c). No erosion was detected on the polyethylene cup. The hip was stable during the final testing. Hip abduction orthesis was used for 8 weeks. The patient died 6 months after surgery due to a heart attack. No redislocation was seen up to this time.

Case 4

Two years ago a 78-year-old woman was treated with a bipolar hip hemiarthroplasty (TST, Istanbul, Turkey) for an intertrochanteric right femur fracture (Fig. 4a). Three weeks after the operation she began to complain of sever hip pain and worsening difficulty to weight bear. She stated that she had not sustained any injury after surgery. Roentgenograms showed dissociation between the small femoral head and the polyethylene cup, with both components remaining in the acetabulum (Fig. 4b). The patient was reoperated, revising the polyethylene cup with the same size and the hip was stable during the final evaluation (Fig. 4c). No erosion was seen on the polyethylene cup. Post-operative period has been uneventful.

Case 5

A 78-year-old female patient was treated with a bipolar hemiarthroplasty (TST, Istanbul, Turkey) after an intertrochanteric fracture of her left femur (Fig. 5a). Two months after the initial surgery she felt a sudden pain in her left hip while she was walking outside. Plain X-ray revealed dissociation between the polyethylene cup and the prosthetic ball head with both items in the acetabulum (Fig. 5b). The patient was re-operated, revising the polyethylene cup with the same size (Fig. 5c). No erosion was seen. The stability was tested intra-operatively. One year has been passed after the revision surgery and no dislocation and/or dissociation was assigned.

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