

Is Only The Classical Etiology Responsible From The Dislocation Following The Hip Arthroplasty?

Kalça Artroplastisi Sonrası Oluşan Çıkıktan Sadece Klasik Etyoloji mi Sorumludur?

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Abstract

Recently, due to the increase in the world's population, prolonged life expectancy and increased senile population, hip diseases have also increased. In parallel to this, the number of hip arthroplasties has also increased. The more hip arthroplasties increase, the more various complications occur. The most important one of these is hip dislocation and its treatment. Although the type of the prosthesis, size of the head used, age, gender, and the type of the incisions have been held responsible among the classical factors causing dislocation and solutions directed to these problems have been discussed, the fact that insufficient patient education may also be one of the causes of hip dislocation and the importance of this education have not been emphasized sufficiently. Most of the time, the standard information given is assumed to be enough, and the patients are not educated on how to continue to live with this artificial joint for the rest of their lives. In our study, we have reported two cases of hip arthroplasty dislocation that occurred due to insufficient verbal information. We have recommended that the training to be given to all hip arthroplasty patients should not only be verbal but should also be supported through booklets that contain educative and explanatory figures.

Key Words: Hip replacement surgery, Dislocation, Patient education.

Özet

Son zamanlarda artan dünya nüfusu, uzayan yaşam beklentisi ve artan yaşlı populasyon kalça hastalıklarında artışa sebep olmuştur. Buna paralel olarak kalça artroplastileride sayı olarak artmıştır. Sayı arttıkça daha fazla komplikasyonlar oluşmaya başlamıştır. Bunlardan en önemlisi kalçanın çıkığı ve tedavisidir. Hernekadar çıkığa sebep olan klasik protez tipi, kullanılan başın çapı, cinsiyet ve insizyon tipleri üzerinde yoğunlaşıp bunlara özgü tedaviler geliştirilse de protez sonrası hasta eğitimi ve bu eğitimin önemi yeterince vurgulanmamıştır. Çoğu zaman verilen standart bilgilerin yeterli olduğu düşünülüp, hastaya yapılan suni eklemle nasıl yaşaması gerektiği konusunda detaylı bilgi ihmal edilmiştir. Çalışmamızda yetersiz sözlü bilgilendirilmeye bağlı artroplastisi sonrasında oluşan iki çıkık vakasını ve sebebini bildirdik. Bizce kalça artroplastisi yapılan hastalarda sözlü bilgiler yetersiz kalmaktadır ve hastalar mutlaka içinde eğitici resimlerinde bulunduğu kitapçıklarla desteklenmelidirler.

Anahtar kelimeler: Kalça replasman cerrahisi, Çıkık, Hasta eğitimi.

Introduction

Hip arthroplasty has an important role in the treatment of advanced osteoarthritis of the hip and of older patients with hip fractures, and it can be performed successfully in various centers by using different incisions and different prosthesis designs. However, the compliance of the patient to the treatment, his/her expectation from the treatment, and the response given to this expectation is as much important as a successful operation of hip arthroplasty.

Aaron et al. have reported in a study they conducted that the unrealistic expectations of patients who underwent hip arthroplasty with regards to pain and hip functions caused a high level of dissatisfaction after the procedure (1).

Unless high expectations of the patients from hip arthroplasty are reduced to reasonable levels, postoperative complications related completely to the patient but not to the surgical procedure (independent from the surgical instrumentation and drugs) will cause additional financial burden and also disappointment in the patient (2).

In the present study, our objective is to report the unrealistic expectations of two patients who admitted to our hospital in the early postoperative period of hip arthroplasty, and the dislocation caused by their usage of the joint in line with these expectations as a normal joint because of insufficient information; and to report the importance of training of these patients on how they should lead their lives before and after the operation in order to reduce those unwanted complications caused by the patient. Related manuscript is also briefly reviewed.

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Case Report

In our study, we recruited two patients with two different cultural backgrounds, who underwent hip replacement surgery with two different designs of prosthesis due to two different etiological reasons, and in whom hip dislocation occurred in different times in the postoperative period. Both patients were operated in our clinic with three day intervals.

Case 1: A high school graduate 68-year old male patient was followed up due to advanced coxarthrosis of the right hip, and when he did not respond to the classical conservative treatments, hip replacement surgery decision was taken. The patient did not have any abnormalities in the preoperative tests. Besides, he did not mention any chronic diseases.

After the completion of routine preoperative preparations, access through a posterior incision was made. Small lateral rotators of the hip were cut, and the posterior capsule was excised. The cement system was used both for the femur and the acetabulum (Biomet, Warsaw, IN). The size of the head used was 28 mm. Following the successful implanting of the components, intraoperative stability test was performed. Following, small lateral rotators were attached to their locations and the layers were closed anatomically. No problems were encountered in the postoperative hospitalization period. The patient was mobilized in the second day of the operation, informed about the postoperative wound care and medical treatment, told about the necessary exercises, and discharged on the fourth day of the operation. The patient later admitted to our emergency department because of severe pain in the replaced hip in the 32nd day of the operation. From his anamnesis, we found out that the pain developed after he lost his balance due to a sudden movement and fell over the hip. In the radiographs of the patient, it was observed that the replaced hip was dislocated, but without any accompanying fractures (Figure 1). The dislocated hip was closely reduced in the operation room successfully following complete muscle relaxation of the patient under general anesthesia (Figure 2).

Case 2: A university graduate 70-year old male patient admitted to our hospital with right hip fracture occurring due to fall from height. In the examination of the patient, collum femoris fracture in the right hip was detected, with no additional fractures. We learned from his anamnesis that he had hypertension controlled with diet and no other chronic diseases. After the routine preoperative preparations of the patient, access through a posterior incision was made, small lateral rotators of the hip and the capsule were cut, and exposure was provided. The fractured part was removed along with the head and a partial hip prosthesis (Thompson hemiarthroplasty) using a unipolar (50 mm) head was placed. Following the intraoperative stability test, posterior hip capsule and lateral rotators were sutured to their locations.



Figure 1. The hip is seen as totally dislocated in the AP hip radiograph taken in the emergency room.



Figure 2. The reduction is seen as successfully achieved in the hip radiograph taken following the closed reduction under anesthesia.

Surgically opened layers were closed anatomically. No problems were encountered in the postoperative hospitalization period. The patient was mobilized in the second day of the operation, informed about the postoperative wound care and medical treatment, told about the necessary exercises, and discharged on the fifth day of the operation.

The patient later admitted to our emergency department because of severe pain in the replaced right hip in the 52nd day of the operation. From his anamnesis, we found out that the pain developed after he lost his balance as he panicked and tried to cross the street quickly due to the sudden turn of the traffic light to red while he was in the middle of the road and fell over the replaced hip. In the radiographs of the patient, it was observed that the replaced hip was dislocated, but without any accompanying fractures (Figure 3).

The dislocated hip was closely reduced in the operation room successfully following complete muscle relaxation of the patient under general anesthesia (Figure 4).

Discussion

Dislocation following hip arthroplasty is extremely problematic both for the patient and the orthopedic surgeon, and also with regard to additional costs. Etiologic factors held responsible for dislocation following arthroplasty include advanced age, female gender, previous surgery, neuromuscular disorders, dementia, alcohol use, malposition in the component, and the surgical techniques used (3).

The incidence of dislocation following arthroplasty is about 3.6% although quite varying series have been reported and half of these dislocation cases occur in the first 3 months of the postoperative period (4). While the rate of the first dislocation is 40%, the rate of recurrent dislocation has been found as 60%. A head with a small size has also been blamed for the dislocations following hip arthroplasty (4). The dislocation rate occurring in the hip arthroplasty performed through only a posterior incision has been reported as 1.36%, and 91% of the dislocations have occurred in the first 6 weeks and it has been emphasized that the dislocations were not related to low surgical experience (5). Using heads with large sizes has been recommended in order to decrease the incidence of dislocations following hip arthroplasty (6). Mathematically speaking, the head should be subluxated more than the radius of the head used in the hip for the hip to be dislocated. Thus, large heads are preferred in order to decrease the incidence of dislocation today.

On the other hand, anterolateral incision has also been recommended to decrease the occurrence of dislocation without limiting activity in the postoperative period, because it has been claimed that the posterior incision used caused impairment in the soft tissue integrity and increased the occurrence of dislocation in the early postoperative period (7).



Figure 3. The hip is seen as totally dislocated in the AP hip radiograph taken in the emergency room; no accompanying fractures.



Figure 4. The reduction is seen as successfully achieved in the hip radiograph taken following the closed reduction under anesthesia.

However, in the study of this author, three patients were reported to have suffered dislocation in the early period. In another study, it has been shown that posterior capsular repair decreases the occurrence of early dislocation significantly in the cases in which posterolateral incision was used (8).

When we examine our cases with dislocation following hip replacement; the head used in the first case is the most commonly used head in total hip replacement surgery, and the head used in the second case is a unipolar head with a diameter of 50 mm, thus the minimum mathematical subluxation necessary for this hip to be dislocated is 26 mm. It is very difficult for this kind of subluxation to occur in normal conditions. Besides, posterior capsular repair was made, position and stability of the components were evaluated intraoperatively, and no malposition was detected in the postoperative radiographs of both patients.

The occurrence of the dislocation despite both patients were male, both did not have a history of alcohol abuse, dementia, or any serious chronic disease led us to question the patients, and we found out that the patients were not sufficiently informed about the operation and that they thought that they could use their hips after the operation like a normal hip. Although we assume that the verbal information given to the patient during the hospitalization period was sufficient, we then noticed that the patient can forget or misunderstand these regardless of his/her educational level. Absence of any additional fractures in both patients was a great luck. Because, an additional pathology following this kind of an event increases the morbidity of the patient significantly.

We have noticed the importance of informing the patient sufficiently, because although the surgeon performs a perfect operation, the one who will use this is the patient, thus the patient should be informed about how to cope with the condition. We realized that classical verbal informing is insufficient, and training with booklets continuing after the discharge is necessary, too.

Most of the publications in the literature we screened generally focus on the type of the incision, size of the head used, and type of the prosthesis used as the factors causing dislocations. In most of the cases, although the series is done by the same authors, with the instruments having the same design, and through the same incision, various rates of dislocation have been reported and the classical etiologic factors have been presented as the reason for the dislocation. But, insufficient rehabilitation and more importantly insufficient patient education have not been mentioned frequently enough among the reasons causing dislocations.

According to the previous studies, too high expectations may be seen in the patients after the major replacement surgeries directed to the knee or hip (1,9).

Besides, the patient may forget or misunderstand the verbal information given preoperatively and postoperatively. Additionally, we have determined that every patient is not informed in a standard quality. Recently, patients are hospitalized shorter during postoperative period and discharged sooner due either to avoid hospital infections or to the technologic developments in hip arthroplasty. An advantage of this situation is to be able to respond the high hospital demand depending on the increased world population; but an important risk generated by this condition is the insufficient patient education due to the discharge in a short time. It is declared that the negative effect generated by the decrease in the hospitalization period following hip arthroplasty can be minimized with a good patient education and home supported rehabilitation education (10).

It has been reported that booklets (containing information on both preoperative and postoperative educational information) prepared for the hip replacement surgery have positive effects on the pain, function, pleasure, and quality of life of the patient in the postoperative period (2). It has been demonstrated that these kinds of booklets and guides reduce the expectations of the patients to more realistic levels, help the patient to cope with the problems more easily in both early and late postoperative period, have positive effects on mental statuses of the patients, and are very cost-effective by minimizing the complications possibly related to the patient (2,11-13).

Following these two sad experiences, we give booklets containing pictorial and explanatory information in addition to the verbal data to all patients who will undergo hip replacement surgery. We have observed that this practice has positive effects on the patients. As a conclusion, hip replacement surgery is performed successfully in many centers around the world. Although the classical etiology is considered in the dislocation occurring following hip replacement and preventive measures are taken directed to these factors, informing the patients poorly about how they should live with this artificial joint in the postoperative period can also cause the dislocation. We recommend that this informing should be done regardless of the socio-cultural levels of the patients and not only verbally but also in the form of booklets containing pictorial and explanatory information about what to be aware of in their daily lives and preoperative and postoperative rehabilitation.

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