



Evaluation of patient quality of life after total hip arthroplasty

Primer kalça protezi uygulanan hastalarda yaşam kalitesinin değerlendirilmesi

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Amaç: Total kalça protezi uygulamasının, hastaların yaşam kalitesi üzerine etkisi değerlendirildi.

Çalışma planı: Çalışmaya total kalça protezi ameliyatı yapılan 30 hasta (6 erkek, 24 kadın; ort. yaş 62; dağılım 36-82) alındı. Hastalara ameliyat öncesinde ve ameliyattan 1.5 ve 3 ay sonra Yaşam Kalitesi Ölçeği Kısa Form 36 (SF-36) uygulandı. Tüm hastalara ameliyat öncesinde uygulanacak cerrahi ve rehabilitasyon programı konusunda yeterli bilgilendirme yapılmasına özen gösterildi.

Sonuçlar: Tüm hastaların cerrahi sonrası altı hafta içinde günlük aktivitelerine döndükleri belirlendi. Cerrahi sonrası üçüncü ayda yapılan ölçümlerde, cerrahi öncesinde ve cerrahiden 1.5 ay sonra yapılan ölçüm sonuçlarına göre SF-36'nın tüm boyutlarında anlamlı düzelme görüldü ($p<0.05$). Yaş, cinsiyet, sosyoekonomik durum ve eğitim düzeyi, hastaların memnuniyet düzeyleri ile ilişkili bulunmadı. Kalça sorunu dışında başka hastalıklar bulunmasının ya da daha önceden cerrahi geçirilmiş olmasının ameliyat sonrası yaşam kalitesi sonuçlarını anlamlı etkilemediği görüldü.

Çıkarımlar: Kalça protezi uygulanan hastalarda yaşam kalitesinde büyük düzelme görülmekte, bu durum hasta memnuniyet düzeylerini de artırmaktadır.

Anahtar sözcükler: Günlük yaşam aktivitesi; artroplasti, replasman, kalça; sağlık durumu; osteoartrit, kalça/cerrahi; yaşam kalitesi; anket.

Objectives: We evaluated the effect of total hip arthroplasty on patient quality of life.

Methods: The study included 30 patients (6 men, 24 women; mean age 62 years; range 36 to 82 years) undergoing total hip arthroplasty. The Medical Outcomes Study Short-Form 36-Item Health Survey (SF-36) was administered to the patients before and after 1.5 and 3 months of surgery. Special attention was given to provide the patients with sufficient information on surgery and postoperative rehabilitation program.

Results: All the patients returned to their daily activities within six weeks postoperatively. SF-36 scores obtained after three months of surgery showed significant improvement in all SF-36 subscales compared to those obtained preoperatively and 1.5 months after surgery ($p<0.05$). Postoperative patient satisfaction was not correlated with sex, age, socioeconomic status, and education level of the patients. The presence of accompanying diseases or previous operations did not affect postoperative quality of life scores.

Conclusion: Quality of life of patients increases substantially following total hip arthroplasty, with a corresponding increase in patient satisfaction.

Key words: Activities of daily living; arthroplasty, replacement, hip; health status; osteoarthritis, hip/surgery; quality of life; questionnaires.

Hip osteoarthritis is a degenerative disease of the hip joint particularly in the elderly population that leads to pain and loss of range of motion. Physical limitations due to disease may significantly disturb the patient quality of life. Considerable improvement

has been achieved in the treatment of osteoarthritis by the introduction of joint replacement procedures. The objective of a hip arthroplasty is to alleviate pain, and to restore function by increasing range of motion. Arthroplasty procedures produce a serious burden on

the health budget of the country. As the proportion of the elderly individuals in the population is increasing, number of these procedures is expected to increase progressively. Thus clinically validated, widely accepted outcome measures, sensitive to changes must be used to determine the benefit of these treatment modalities employed for osteoarthritis. One of the major outcome measures for osteoarthritis, as for any other disease, is the change in the quality of life. General or disease specific quality-of-life instruments may be utilized to determine these changes. General quality-of-life instruments are not directly related to a specific disease and provide better sensitivity for detecting treatment-related adverse effects and complications. General instruments provide an integrated approach to the patients, which is particularly important for the osteoarthritis patients that suffer from various concomitant diseases. Although they are suggested to have limited sensitivity for the changes of health, there is a tendency to use general instruments to assess the quality-of-life as they also consider the adverse effects, complications and concomitant diseases.^[1]

One of the general quality-of-life instruments frequently used for osteoarthritis is the Medical Outcomes Study Short Form 36 (SF-36) test. This test has 36 items that evaluate the quality-of-life in 8 aspects. It has been validated for wide range of diseases including osteoarthritis. Although it is a general instrument, it has the advantage of evaluating pain, physical function and quality-of-life; therefore it is recommended for the follow-up of total hip arthroplasty.^[1-3] In this study, we assessed the impact of total hip replacement on the patient quality of life.

Patients and method

Study included 30 patients (6 male, 24 female, mean age: 62, range 36-82) that had hip arthroplasty in the GATA Orthopedics and Traumatology department between 2004 and 2006. A general semi-structured information form was filled during the interview with the patient that included socioeconomic status, age, educational level, previous surgeries, and expectation of the patients. SF-36 was used as the quality-of-life instrument. SF-36 scores were repeated in the follow-up examinations at the 6th week and 3rd month. Patients were informed about the study and the test by personal interview before the application of the tests.

Used Instrument

SF-36 is a self-evaluation instrument for quality of life. It has 36 items. These items provide evaluation of 8 dimensions. These are physical function, social function, role limitations due to physical problems, role limitations due to emotional problems, mental health, vitality, pain and general perception of health. Subscales are scored between 0 and 100 where 0 denotes poor health and 100 denotes good health.

Surgery

After combined epidural and spinal anesthesia, both acetabular and femoral components were placed without cement in the lateral decubitus position with a posterior approach. All patients received prophylaxis for deep vein thrombosis and infection.

Rehabilitation

Ankle dorsiflexion and plantar flexion, isometric exercises for quadriceps and gluteal muscles and pelvic tilt exercises were started at the first postoperative day. Patient sat at the bedside at the second postoperative day to perform active knee flexion and extension. At the third postoperative day patients were mobilized allowing light touch with a walker. Sit down-stand up exercises were performed at the fourth postoperative day. Stair climbing was shown at the fifth postoperative day. Patient was informed about the risk of dislocation and warned to avoid more than 90 degrees flexion, adduction and internal rotation. Patient mobilized by partial weight bearing were discharged at the 6th postoperative day.

Statistical analysis

Variance analysis tests were used for statistical analysis of repeated measurements and p value of <0.05 was considered as significant. Data analysis was performed by Windows SPSS 12.0 software.

Results

Twenty-one patients were married and 9 were single. Educational level of 29 patients was high school or lower, and one patient was a university graduate. Hip arthroplasty was the first surgery for 28 patients and 16 patients had concomitant disease. Overall average doctor visit because of hip problems was 2 per year for the group, 22 patients had one or two visit and 8 patients had 3 or more visits per year. None of the patients could perform any type of sports activity before the operation. All patients stated their expectations

Table 1. Statistical analysis results of SF-36 (Repeated measures analyse of variance)

| | Preop (X. \pm SS) | Postop 1.5 month (X \pm SS) | Postop 3. month (X. \pm SS) | Wilks lambda value | F | <i>p</i> |
|-------------------|------------------------|----------------------------------|----------------------------------|-----------------------|-------|----------|
| Physical function | 24.5 \pm 23.3 | 48.8 \pm 22.8 | 74.6 \pm 19.5 | 0.204 | 54.74 | <0.05 |
| Role physical | 18.2 \pm 35.8 | 47.0 \pm 35.6 | 73.7 \pm 33.6 | 0.306 | 31.77 | <0.05 |
| General health | 40.2 \pm 25.1 | 63.8 \pm 20.9 | 79.3 \pm 18.0 | 0.238 | 44.70 | <0.05 |
| Vitality | 36.0 \pm 27.1 | 60.0 \pm 24.9 | 74.3 \pm 20.2 | 0.278 | 36.29 | <0.05 |
| Social function | 44.6 \pm 32.7 | 68.0 \pm 22.4 | 80.5 \pm 39.3 | 0.413 | 19.88 | <0.05 |
| Role emotional | 22.3 \pm 38.9 | 50.3 \pm 40.0 | 74.4 \pm 35.2 | 0.345 | 26.61 | <0.05 |
| Mental health | 48.0 \pm 19.9 | 69.2 \pm 20.0 | 82.7 \pm 13.5 | 0.214 | 51.31 | <0.05 |
| Bodily pain | 23.7 \pm 25.7 | 59.9 \pm 24.6 | 79.3 \pm 16.1 | 0.162 | 72.21 | <0.05 |

X: Mean, SD: Standard Deviation

primarily as alleviation of pain and to be able to perform daily activities independently. Mean scores of eight dimensions of SF-36 before operation and at the postoperative 6th week and 3rd month are presented in Table 1. Patients reported that they returned daily activities by the follow-up visit at the 6th week after operation; this was confirmed by the related subscales of the SF-36. For the comparison of the health status dimensions of the patients having different demographic and clinical characteristics, statistical analysis of the differences between the scores related to health status dimensions were performed by variance analysis of repeated measurements considering their distances from 100 which indicates perfect health and 0 which indicates poor health; and significant difference was determined for all dimensions ($p < 0.05$). Results obtained at the 3rd postoperative month showed significant improvement compared to both preoperative and postoperative 6 week ($p < 0.05$).

Discussion

Quality-of-life can be defined as the self-perception of the patient within his or her own culture and values. It includes the objectives, expectations, standards and concerns of the individual. Physical health, mental health, level of independence, social relations, environmental factors and personal beliefs are involved in the concept of quality-of-life in a subjective basis.

Hip osteoarthritis is a degenerative disease of the hip joint that leads to pain and loss of range of motion particularly in the elderly population. Physical health is disturbed due to immobilization caused primarily by pain, and psychological collapse secondary to home dependent life affects the mental health.^[5] Thus treatment of these patients should aim to increase the quality-of-life by returning them to daily activities as soon as possible.

In our study, concomitant diseases other than hip problems or previous surgeries did not show any significant effect on the quality-of-life after total hip replacement. Number of previous visits due to related symptoms had no effect on the quality-of-life scores of the patients. Studies on various demographic factors have shown that age, gender, waiting time and concomitant diseases had no effect on the quality-of-life after surgery.^[6-9] Most of the patients stated that they did not perform routine exercises before the operation. This may be due to life style of the patient or caused by functional loss in the advanced stages of the disease. In either case, statistically significant increase in the physical function and physical role dimensions of the SF-36 indicate the role of surgical treatment on the improvement of daily activities. In their review including 74 studies on this subject, Ethgen et al have reported that age of the patient had no effect on the outcome; but male patients reported higher degree of benefit compared to females. Our study group was largely comprised of females over the age of 60. Comparisons showed no correlation for age and gender. Lower educational level of the patients, mostly primary and secondary school graduates, was expected to have an influence on the expectation of the patients. But no correlation of socioeconomic and educational level could be established with the patient satisfaction. We believe that the reason for absence of significant effect of demographic characteristics on the outcome is the preoperative counseling given to the patients in accordance with their level of perception. Expectation of the patients is a well-known variable that affect the outcome.^[10] Importance of preoperative counseling about surgery and the rehabilitation program has been emphasized by several studies.^[11-13]

Significant improvement of the SF-36 scores was noted by the postoperative 6 weeks. Effect of total hip

replacement has been reported to start at the 3rd month and than make plateau; or showed improvement from 39 to 81 months.^[7-15] As stated by various studies such early improvement in our cases can be explained by proper preoperative counseling which keep the expectation of patients reasonable and provide their active participation to the rehabilitation program resulting with early recovery of functions that positively affect the quality of life. SF-36 scores continued to increase at the third postoperative month. Scores of the patients are considerably higher at the 3rd month and due to the age group of the patients achieving higher scores by time is unlikely. Studies with longer follow-up that demonstrate the plateau of the SF-36 scores is necessary to determine the maximal effect of total hip replacement on the quality of life.

Expectations about exercise and social activities showed an increase with the increased socioeconomical status. Bachmeier et al.^[3] have reported that age of the patient and waiting time before operation had no effect on the quality-of-life after total hip replacement but stated that younger patients achieved higher range of movements and SF-36 scores other than pain showed better improvement. In the mentioned study, patients achieved full range of motion at the end of one year.^[3]

Although levels of patient satisfaction showed difference, quality-of-life of all patients were significantly improved after a mean of 3 months. Total hip replacement has been proved as a successful treatment method for alleviating pain and improving the function, therefore increasing the patient quality-of-life if a proper preoperative counseling in accordance with psychosocial status of the patients is provided.

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