

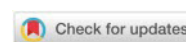
HIP DISORDERS AND IMPROVEMENT ON THE PATIENT LIFE OPPORTUNITIES BY THE HIP ENDOPROSTHESIS IMPLANTATION

Ljiljana Stijepović^{1*}, Indira Poplata², Elvedina Hodžić², Nino Alić³

¹Special Hospital, "Vaso Čukvić" Risan Montenegro, Kovačevina bb Risan, Montenegro
e- mail: stijepovicljiljana7@gmail.com

²Clinical Center of the Sarajevo University, Sarajevo, Bosnia and Herzegovina
e- mail: poplataindira@hotmail.com; elvedinahodzic@hotmail.com

³Institute for Public Health and Food Safety, Zenica Bosnia and Herzegovina,
e- mail: ninoalic@live.com



Abstract: The most common reason for the hip joint endoprosthesis implantation is advanced coxarthrosis of the hip, which can be primary, meaning that the cause of coxarthrosis is still unknown, and secondary, which occurs due to a detected disorder: insufficient development of the hip (dysplasia) or after joint trauma (hip fractures, dislocations). Osteoarthritis is the leading cause of physical disability in the elderly in developed countries, but it is also the fastest growing health and disability problem. Aim: To examine the possibilities of regular life activities in patients before and after the hip endoprosthesis surgery. Methods: the research was conducted with people who have hip disease, who are housed in the "Vaso Čuković" Risan Special Hospital, who need hip endoprostheses. Results: Male patients answered that they feel healthy with a median of 20 (15-25) with a minimum of zero and a maximum of 100, while female respondents felt somewhat healthier 25 (20-30). After the surgery, male respondents answered that they felt healthy with a median of 90 (82.5-100), as did female respondents who felt healthier with mean of 90 (80-100). Male patients before hip surgery had a median health index of 0.35, or in the range -0.11 -0.48, female patients had the same median index value of 0.35, or range 0.07-0.48. Male patients after hip surgery had an median health index of 0.93, or in the range 0.88-1.00, female patients had the maximum index values of 1.0, or in the range 0.96-1.0. Conclusion; Implantation of a hip endoprosthesis provides greater opportunities for normal everyday activities.

Keywords: Hip diseases, hip endoprosthesis implantation

Field: Medicine research

1. INTRODUCTION

FAI (Femoral Acetabular Impingement syndrome) is a common cause of hip pain, which greatly reduces the quality of life (Langhout, R.et al., 2018, Papalia R.,et al., 2011). The first to deal with the issue of this area and first described as FAI in 2001 was Ganz et al., who described it as irregularities in the anatomy of the femur and acetabulum (Fioruzzi, A.et al., 2020). Due to the abnormal contact between the femur and the acetabulum, there will be a focal cartilage defect, cartilage delamination, chondrolabral separation and labral tears, which will eventually lead to hip osteoarthritis (Migliorini, F.et al., 2023). The number of femoral neck fractures (FNF) in the elderly population is enormous. Its prevalence increases during the last few decades and by 2050 will amount to 6.3 million (Solarino, G.et al., 2022). In order to succeed in improving the mobility and satisfaction of patients with FNF, great efforts should be made in training before and after the surgery (Pass, B.et al., 2022). The future of medical science is not only in the treatment of diseases but also in paying attention to the overall health of patients (Kumar, P.et al., 2020). The EU-5Q questionnaire is an international evaluation tool for the effective assessment of surgical outcomes that was used during this study (Buchholz, I.et al., 2018). In secondary care, in hip surgery, patient harm includes adverse events such as hospital-acquired infections, pressure ulcers, and falls. Patients who experience these events may face longer hospital stays, higher treatment costs, and an

*Corresponding author: stijepovicljiljana7@gmail.com



increased risk of death (Anand, P.et al., 2018). In developed countries, it is considered that the costs of treatment incurred after surgery for injuries received during hospital treatment of patients represent about 15% of the total costs of necessary care (Slawomirski, L.et al., 2017). As life expectancy increases year by year, age span is longer, it is predicted that the number cases with coxarthrosis will increase to 4.5 million by the year 2050 (Veronese & Maggi, 2018). A large number of disabilities are due to hip fracture (DALY this equates to a loss of 27 DALYs per 1,000) due to age, which is statistically equal to breast and pancreatic cancers (Papadimitriou, N.et al., 2017).

2. GOAL

To examine the socio-demographic characteristics of the respondents; Investigate the possibilities of regular life activities in patients before and after the hip endoprosthesis installation procedure; To examine the degree of pain/discomfort in patients before and after the hip endoprosthesis implantation procedure.

3. MATERIAL AND METHODS

The study was conducted in the period from February to May 2018 in the Special Hospital "Vaso Čuković" Risan. A total of 46 patients of both genders were included, who filled out a questionnaire about the possibilities of life before and after hip endoprosthesis implantation. Inclusion criteria: persons older than 18 years, both genders, patients who voluntarily agreed to participation, patients who were treated in the Special Hospital "Vaso Čuković" Risan. Exclusion criteria: persons under the age of 18, patients who did not agree or only partially agreed to participate in the research, patients who were not treated in the Special Hospital "Vaso Čuković" Risan - patients with severe comorbidities (patients on hemodialysis, diabetics with severe complications, patients who had a stroke or heart attack). As a research instrument, a general survey questionnaire for the socio-demographic characteristics of the respondents was used, which contains eight general questions (age, gender, marital status, level of education, etc.) created by the researcher, and a specialized questionnaire for the quality of life of the respondents EQ-5D (Euro Qol group-five dimensions) (8).

The descriptive system EQ-5D-5L contains the following dimensions: mobility, self-care, usual activities, pain/discomfort.

4. RESULTS

In relation to the gender representation, women dominate, that is, of the total number of patients (n=46), more than two-thirds are female, 33 (71.7%), while 13 (28.3%) are male patients. The average age of the respondents is 70.1 ± 9.5 years. Men are slightly older at 74.1 ± 8.2 years than women, whose age is 68.5 ± 9.5 years on average. The difference in age is not statistically significant $p=0.074$.

The study included 29 (63.0%) patients with hip arthrosis and 17 (37.0%) with a hip fracture.

Table 1. Patient demographic characteristics

		Mean± St. deviation	
Age	Male	74.1±8.2	
	Female	68.5±9.5	
	Total	70.1±9.5	
		N	%
Sex	Male	13	28.3
	Female	33	71.7
Baseline diagnosis	Hip arthrosis	29	63.0
	Hip fractures	17	37.0

The average duration of the patients' locomotor problems was 2 years, or in the range from 1 to 3 years. From the total (n=46) 24 (52.2%) needed the help of a third party, while 22 (47.8%) patients did not.

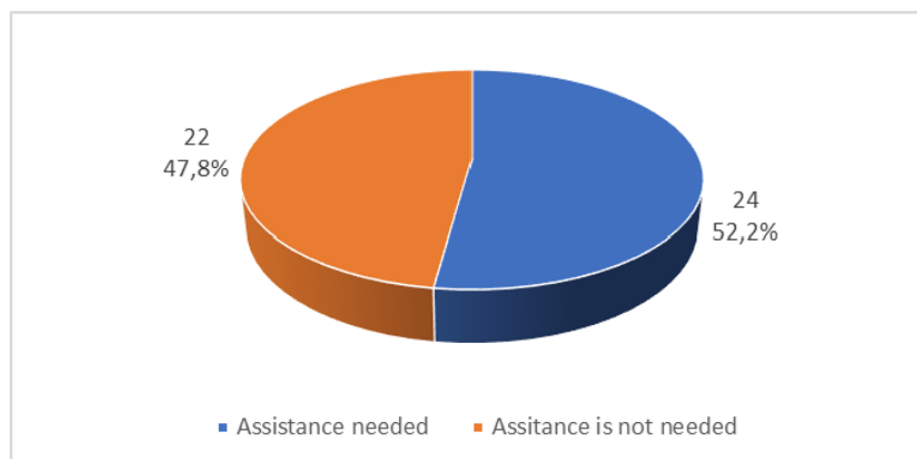


Figure 1. The need for care and assistance from a third party

Male patients answered that they feel healthy with a median of 20 (15-25) with a minimum of zero and a maximum of 100, while female respondents felt somewhat healthier 25 (20-30).

The shown difference in the patientive feeling of health in relation to the gender of the respondent is not statistically significant, $p=0.108$.

After the surgery, male respondents answered that they felt healthy with a median of 90 (82.5-100), as did female respondents who felt healthier with mean of 90 (80-100).

The postoperative patientive feeling of health among the respondents in relation to gender is uniform, $p=0.870$.

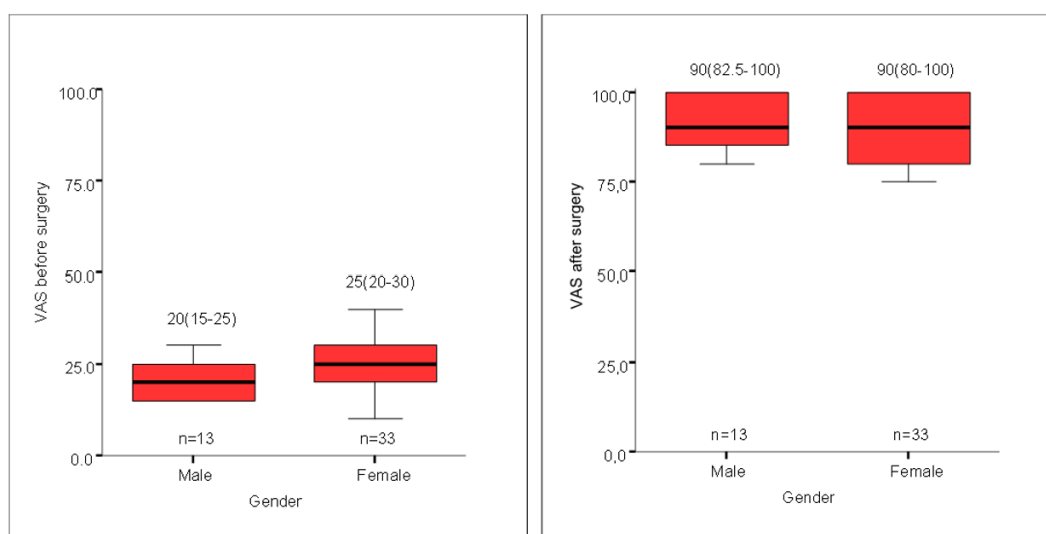


Figure 2. Visual analogue health scale (VAS) before and after surgery in relation to gender.

The values of ED 5D index range from 1.0 to -0.35, higher and positive values mean better health or a lower level of problems. Smaller and negative values mean worse health and a higher level of problems in all five dimensions.

Male patients before hip surgery had a median health index of 0.35, or in the range -0.11 -0.48, female patients had the same median index value of 0.35, or range 0.07-0.48.

The median values of the health index before the hip surgery among the respondents in relation to gender are uniform, $p=0.412$.

Male patients after hip surgery had an median health index of 0.93, or in the range 0.88-1.00, female patients had the maximum index values of 1.0, or in the range 0.96-1.0.

The shown difference in the health index after hip surgery is not statistically significant, $p=0.057$.

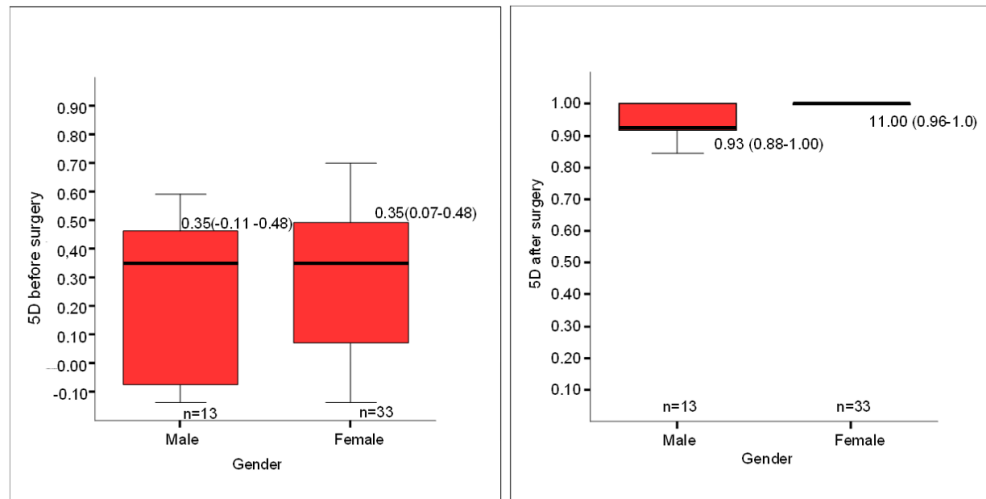


Figure 3. Health index (EQ 5D) in patients before and after surgery in relation to gender

5. DISCUSSION

One of the important goals for the success of the surgery is to establish a good interaction between the patient and the surgeon. The gender and age characteristics presented in the results of this study are comparable to the characteristics of other studies. Women are dominant in the sample, of the total number ($n=46$), more than two-thirds were women 33 (71.7%). The gender difference can be explained by the fact that women after menopause have a loss in mineral status, which is reflected in the density and strength of the bone system. The average age of the respondents is 70.1 ± 9.5 years. Men are slightly older at 74.1 ± 8.2 years than women, whose average age is 68.5 ± 9.5 years.

In comparison with the recently retrieved literature, some researchers came to the conclusion: Bastos (2021) pointed out that surgical treatment is not superior to conservative treatment of femoroacetabular impingement syndrome, and that there is low-quality evidence that it is not a long-term solution. Schwabe (2020) conducted a meta-analysis that included three studies, based on a comparison where he followed up patients after surgery for 6 and 12 months, as well as using visual analogue scale instruments to assess the mobility of the lower extremities (HOT-33 and HOS-ADL), and concluded that the outcome of surgery is better than conservative treatment. One of the most important roles in postoperative recovery have orthopedic nurses who need continuous education about perioperative care in hip arthroplasty. After the surgical implantation of a hip endoprosthesis, nurses are leaders in functional recovery and pain relief after surgery (Dwyer, T.et al., 2021). If preoperative preparation, intraoperative care, and postoperative observation, the three most important items, are properly performed, recovery is much faster and of better quality (Valcarenghi, J.et al., 2022). Some researchers have found that patients who have experienced postoperative respiratory failure, pulmonary embolism, and sepsis are more likely to have statistically significantly worse health status in all five dimensions of the EQ-5D (McIsaac, DI.et al., 2019). In self-rated health, gender was not associated with EQ5D index after six months or with self-rated health (EQ-VAS), most comparable studies did not find a significant effect of gender (Amarilla-Donoso, FJ.et al., 2020).

According to the Swedish Arthroplasty Registry, in a national group with about 27,000 subjects, Gordon et al did not find a positive relationship between age and changes in quality of life as measured by the EQ-5D index, among patients who suffered from osteoarthritis. The analysis is based on gender, pain, comorbidity and preoperative quality of life (Cnudde, P.et al., 2017).

The visual analogue health scale (VAS) of the subjects in the preoperative period, which was related to gender, showed a health index of 20 for men and 25 for women, thus statistically significant ($p=0.108$). In the postoperative period, both men and women had an index of 90. The result showed, therefore, that the postoperative subjective perception of health among the respondents was uniform in relation to gender ($p=0.870$). The demographic characteristics of this study showed that more than half of the respondents (52.2%) needed the care and assistance of a third party. The EQ-5D health index value for respondents who did not need help from others was 0.43, while respondents who needed help from another person had lower values (0.07). After surgery, for those who did not need help from others after surgery, the index was (1.0), while respondents who required help from another person had lower

index values (0.96). The shown difference in the health index before the hip endoprosthesis installation operation in relation to the need for the help of another person is statistically significant ($p=0.035$). The result indicates a significant improvement in life possibilities in the mentioned segment, even though it was a short-term follow-up.

6. CONCLUSION

After the surgery, the respondents (93.5%) did not feel pain, while only 6.5% of the respondents felt slight pain or discomfort. Score on the visual analog health scale (VAS) at the time of the survey on a scale from 0 to 100 was an average of 25.0 before the hip surgery, while the same after the hip surgery was an average of 90.0.

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