

Hip Forgetting After Hip Prosthesis in Cotonou

Alagnide Hountondji Etienne¹, Chigblo Pascal², Niama Natta Didier¹, Goukodadja Oswald², Adeghbindin Moufakil¹, Hans Moevi Aristote² and Kpadonou Godonou Toussaint¹

¹Physical Medicine and Rehabilitation Clinic of CNHU-IHKM/ Cotonou

²Traumatological and Orthopaedic Clinic of CNHU-IHKM/ Cotonou

ABSTRACT

After a hip prosthesis, an increasingly targeted goal is hip forgetfulness. What about this result in Benin. Objective: To study hip forgetting after hip prosthesis in Benin.

Methods: Prospective study with a descriptive and analytical aim carried out from February to October 2019. It focused on patients with prosthesis of a single hip for at least 3 months in hospitals in Cotonou and surroundings, without comprehension disorders or other pathologies causing locomotor system disability and who consented to participate in the study. The "Forgotten Joint Score -12" (FJS-12) and the "Hip disability and Osteoarthritis Outcome Score" (HOOS) were the tools to assess, respectively, the forgetfulness and functionality of the prosthetic hip of patients.

Results: The mean age of patients was 52.90 ± 16.76 years. The sex ratio was 1.31. These were mainly cases of PTH (88.64%), first-line (86.36%). Only one patient between four had actually forgotten his hip. The latter was significantly associated mainly with the parameters of functional capacities of the hip.

Conclusion: Hip forgetting still remains a major challenge in hip replacement patients in Benin. The role of functional rehabilitation in achieving this goal is legitimate, showing the need to collaborate between specialties in the care of these patients.

*Corresponding author

Alagnide Hountondji Etienne, Physical Medicine and Rehabilitation Clinic of CNHU-IHKM/ Cotonou, Tel: (00229)95704099; E-mail: ealagnide@yahoo.fr

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Introduction

Hip prosthesis represents the least treatment, in the management of joint pathologies of hip when conservative treatments have become ineffective. Several studies have shown that results of this intervention are generally good in 95% of patients [1]. The installation of total hip arthroplasty (THA) eliminates pain, restores satisfactory mobility to the hip and a comfortable quality of life. But apart from this results nowadays, more and more ambitious goals are expected from that surgery such as the absence of consciousness of the hip in the activities of the daily life: Hip forgetting. The latter takes into account the absence of strong sensations like pain, but also more subtle feelings like slight stiffness, subjective dysfunction or any other discomfort. The vast majority of patients forget their hips after a few months and lead a strictly normal life again [2]. In Benin, hip prostheses have been introduced since 2000 [3]. But there is not yet a study to assess the state of joint consciousness after procedures, what we aimed to do.

Methodology

• Type and period of study

This is a prospective study with descriptive and analytical purposes carried out over a period of eight (08) months from February 1,

2019 to October 31, 2019.

• Study population and sampling

Our study population consisted of patients operated on or benefiting from rehabilitation sessions for hip prosthesis in hospitals in Cotonou and surroundings, from 2010 to April 2019. So, it was a non-probability and exhaustive sampling according to the following criteria: Were included in the study patients admitted to one or other of the hospitals in the study setting for a hip prosthesis, who could be contacted during the data collection period, and whose hip prosthesis was placed for at least 3 months and who consented to participate to the study. Patients with comprehension disorders or other pathologies causing locomotor disability, with prostheses on both hips or with another prosthesis in addition to that of the hip were not included in the study. Forty-four (44) patients were then enrolled, taking into account these different criteria.

• Study variables

The dependent variable of the study was forgetting the prosthetic hip. It was assessed with the "Forgotten Joint Score -12" (FJS-12) which assesses patient's ability to forget his prosthetic hip in activities of daily living by returning to a painless and functional hip. It consists of 12 questions which are rated on a 5-point Likert scale. The level of hip forgetfulness is assessed from the total score, expressed as a percentage of the maximum expected score.

The higher the score is, it indicates a success of the prosthesis, that is to say a hip joint “forgotten” in the activities of daily living [6]. We categorized hip forgetfulness as absent, partial, or significant depending on whether the FJS scores were 0-24, 25-74, and 75-100% respectively.

The functionality of the patients’ hip was assessed by the “Hip disability and Osteoarthritis Outcome Score” (HOOS). This is a self-administered questionnaire that was constructed by adding dimensions relating to athletic ability (4 items) and to hip quality of life (4 items) to the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC). The latter is made up of 32 items (10 for pain, 5 for other symptoms, 17 items for functional results in activities of daily living). It therefore includes 5 sub-scores which score in total out of 100 [4,5]. A score of 100 indicates a hip without any problem. In our study we did not use the dimension relating to athletic ability. We called a score of: [0%; 25% [= severe impairment [25%; 75% [= moderate impairment [75%; 100%] = no impairment.

• Data analysis and processing

Data collected by the survey sheet were entered and coded in Microsoft “Excel 2013” and processed by the software “Epi Info version 3.3 of 2007”. Means comparison was made by the Anova test and that of the qualitative variables by the Pearson chi-square test. The significance level chosen was 5%.

Results

- Characteristics of the study population
- Sociodemographic characteristics Patients mean age was 52.90 ± 16.76 years with ranges from 24 to 82 years. Sex-ratio was
- Table I presents the distribution of the other socio-demographic characteristics of the patients in the study.
- Features of the prosthesis

The mean time elapsed since the implantation of the prosthesis was 3.82 ± 2.35 years. The extremes ranged from 4 months to 7 years. Table II shows the distribution of patients according to the other characteristics of their prosthesis.

Table I: Distribution of the other socio-demographic characteristics of the patients in the study

	Numbers	Percentages (%)
Gender		
Male	25	56.82
Female	19	43.18
Professional status		
Liberal profession	20	45.45
Official	13	29.55
Retired	10	22.73
Student	1	2.27
Marital status		
Married	29	65.91
Non married	15	34.09
Corpulence (BMI)		
Thinness	5	11.36
Normal	24	54.55
Overweight	7	15.91
Obesity	8	18.18

Table II: Distribution of patients according to the other characteristics of their prosthesis

	Numbers	Percentages (%)
Operated size		
Right	23	52.27
Left	21	47.73
Surgery way		
Hardinge external way	32	72.73
Moore posterior external way	12	27.27
Type of prosthesis		
TTHR	39	88.64
Cephalic Prosthesis	5	11.36
Type of surgery		
First time	38	86.36
Repeat	6	13.64
Etiology		
Hip arthritis	16	36.36
Necrosis of femoral head	14	31.82
Femoral neck fracture	12	27.27
Hip infection	2	4.55

• Hip forgetting

The mean FJS 12 was 59.63% (± 24.16). The median was 63.63%. Figure 1 shows the distribution of patients by level of hip forgetfulness.

- Factors influencing forgetting
- Influence of socio-demographic data on hip forgetfulness

The study of the influence of socio-demographic data on hip forgetfulness is presented on the table III. None of those socio-demographic characteristic was associated with the hip forgetfulness.

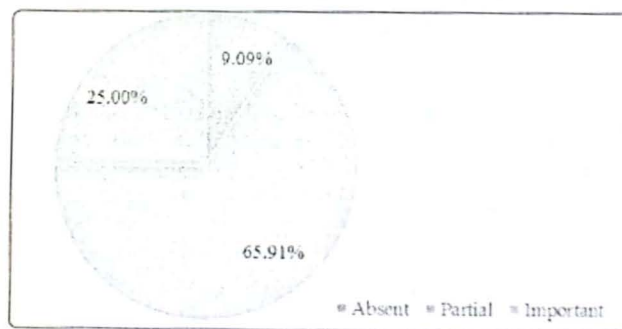


Figure 1: Distribution of patients according to their level of hip forgetfulness

• Influence of the characteristics of the prosthesis on hip forgetting

None of the hip prosthesis characteristics studied and presented on table IV has shown a significant difference on hip forgetfulness.

• Influence of HOOS hip functionality parameter scores on hip forgotten

That result is presented on the table V. By the latter, we noted that all of HOOS hip functionality parameters are statistically associated with the hip forgetfulness.

Table III: Influence of socio-demographic data on hip forgetfulness

	Hip forgetfulness			Statistics tests
	Absent	Partial	Important	
Age				
Mean ± SD	59.75±18.78	52.89±17.72	50.63±14.10	F= 0.42 p= 0.65
Gender				
Male	2	14	9	X ² = 3.74 p= 0.15
Female	2	15	2	
Professional situation				
Fonctionnaire	0	11	2	X ² = 3.91 p= 0.41
Profession libérale	2	12	6	
Retraité	2	6	3	
Marital status				
Non married	1	11	3	X ² = 0.56 p= 0.75
Married	3	18	8	
BMI				
Mean ± SD	25.82± 6.56	24.36 ± 4.21	26.1±6.8	F= 0.52 p= 0.59

Table IV: Influence of the characteristics of the prosthesis hip forgetting

	Hip forgetfulness			Statistics tests
	Absent	Partial	Important	
Age				
Mean ± SD	3 ± 2.16	3.66 ± 2.43	4.54±20	F = 0.82 p= 0.44
Surgical way				
Hardinge	1	23	8	X ² = 5.22 p= 0.07
Moore	3	6	3	
Type of prosthesis				
THR	4	24	11	X ² = 2.91 p= 0.23
Cephalic prosthesis	0	5	0	
Type of surgery				
Repeat	0	5	1	X ² = 1.14 p= 0.56
First time	4	24	10	
Etiology				
Hip arthritis	1	11	4	X ² = 1.42 p= 0.96
Necrosis of femoral head	2	9	3	
Femoral neck fracture	1	8	3	
Hip infection	0	1	1	
Operated size				
Right	3	15	5	X ² = 1.03 p= 0.59
Left	1	14	6	

Table V: Analysis of the influence of HOOS hip functionality parameter scores on hip forgotten

	Hip forgetfulness			Statistics tests
	Absent	Partial	Important	
Pain				
Mean±SD	50.49±19.59	64.78±15.33	89.31±11.12	F=14.64 ; p=2.10 ⁻⁵
Symptom and stiff				
Mean±SD	71.56±10.47	69.18±20.00	91,7 ± 10.75	F= 6.61 ; p= 0.003
Daily life function				
Mean±SD	50,07±15,45	67,37±15,87	86,94±11,40	F=11.12; p=1.4.10 ⁻⁴
Quality of life				
Mean±SD	28.12±11.96	50.60±20.60	50.60±20.60	F=10.05; p=2.8.10 ⁻⁴

Discussion

• Characteristics of the study population

The sex ratio of our sample was 1.31. Other studies conducted in Benin in 2009 [7] and 2017 [8] reported male predominance. Also in Belgium, Vanden et al in 2016 had a male predominance, with a sex ratio of 1.34, in a population of patients undergoing hip surgery [9]. At the same time, our results diverged from those of studies carried out in Canada in 2018 and in the United States of America in 2019, for which a female predominance was rather noted, the sex ratio having been 0, 54 and 0.33 [10,11]. It emerges from all those results above that pathologies justifying the placement of a hip prosthesis are not specific to a given genre.

The mean age of patients in our study was 52.90 ± 16.76 years. Our results are comparable to those of Puliero et al who found an average of 55.8 ± 10.9 years in 2019 in Canada [10]. On the other hand, they are different from those reported in Benin in 2017 by Sambo et al [12], as well as Alagnidé et al [8], who respectively found an average age of 41 and 49.50. But anyway, these results show that hip prosthesis is done more to young adults.

• Features of the prosthesis

The Hardinge antero-external surgical approach was the most used in our study, at 72.73%. Rosinsky et al in 2019 reported a higher proportion, 88.66% of that route of surgery [11]. On the other hand, Hans-Moevi et al noted a predominance of patients operated by the postero-external route [7].

The majority of the patients in our study were operated on degenerative hip pathologies (coxarthrosis: 36.36% and necrosis of the femoral head: 31.82%). While in the West, authors have also reported the predominance of degenerative conditions motivating hip replacement, it was mainly hip osteoarthritis, generally representing more than four out of five patients [9]. We will then say that the specificity in our context is the osteonecrosis mainly due to sickle cell anemia and cases of chronic infectious pathology of the hip.

• Hip forgetfulness and associated factors

The average FJS in our series was 59.63% ± 24.16 with extremes of 0-100%. These results are comparable to those of other authors, with FJS scores ranging from 54 to 67% [6, 13]. But other authors such as Vanden et al as well as Puliero et al performed better in their series with scores of 80% and 88% respectively [9,10]. From our results, looking for the factors associated with hip forgetfulness, it was noted that these were mainly functional parameters of hip

and the approach, the external Hardinge approach having shown better results than Moore's posterior. It emerges from these results that what is decisive in ensuring better well-being in the use of hip prostheses depends essentially on the therapists, from the surgical technique to rehabilitation care. Several studies from the literature review led to comparable conclusions [9,10,13,14]. On the other hand, study of Behrend et al in 2012 showed that men had high scores on the FJS 12 and therefore were less aware of the prosthesis compared to women [6].

Conclusion

Hip forgetfulness continues to be a major problem in the patients in our series. The determining factors to ensure this hip forgetfulness are essentially related to the functional abilities of the patients. This would probably be the question of the bigger one between the egg and the chick. In all cases, apart from the importance of precocity and the technique used during the surgical intervention, functional rehabilitation seems to have a key role in ensuring that the patient who has had a hip prosthesis has this rather ambitious objective of forgetting the hip replacement.

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