

Intermediate hip prostheses: About 65 cases collected at the Niamey General Reference Hospital

Abdoul Wahab A.M ¹, Dalatou MMMH ², AAA Moutalabi ², IDE G, Souna B. S ²

¹ Associate Professor of CAMES, Head of the Orthopedic-Trauma Surgery Department at the General Reference Hospital of Niamey, Niger

² Department of Surgery and Surgical Specialties of the Faculty of Health Sciences at Abdou Moumouni University in Niamey, Niger

Abstract

Title: Intermediate hip arthroplasty (IHA): epidemiological profile and results of 65 cases collected at the Niamey General Reference Hospital.

Introduction: The main objective of this study was to analyze the epidemiological, therapeutic and evolutionary aspects of patients who benefited from PIH.

Method: This was a descriptive study carried out over a period of 67 months from January 1, 2018 to July 31, 2023. The sphinx software without its version 5.1.0.4 allowed the entry and analysis of our data.

Results: The hospital frequency of PIH was 13.37% of hip traumas. The male gender was the most affected in 50.80% with a sex ratio of 1.03. The average age of patients was 58.97 years (21-90 years). Domestic accidents were the majority etiologies, i.e. 49.23% of cases. Parker score greater than 6 predominated, i.e. 84.60%. The majority had a poor PMA score in 53.85%. Neck fracture was the most common diagnosis found in 55.38%. We recorded one case of death, i.e. 1.54% of natural causes. All patients seen at follow-up had recovered their previous functional autonomy according to the Postel and Merle d'Aubigné score.

Conclusion: PIH is a common practice in the orthopedic trauma department despite the fact that the population remains reluctant and also under-informed.

Keywords: PIH, PMA, Parker Score, Niamey HGR

Introduction

Intermediate hip replacement is a partial arthroplasty consisting of the placement of a femoral implant replacing the head and neck, while preserving the native acetabulum. In Niger, its use has become increasingly frequent. However, the evaluation of its indications, its management and its results remain poorly documented in our context, even though it conditions functional quality and prosthetic survival.

The main indications for hip replacement are coxarthrosis and certain femoral neck fractures ^[1]. In France, coxarthrosis affects 2 to 4% of the population between 40 and 70 years of age ^[2]. Furthermore, it is one of the main causes of disability in the elderly. Thus, hip replacement is the sixth most frequently associated procedure with aging ^[2]. In Mali, femoral neck fracture is the main reason for prosthesis replacement with a frequency of 64.0% followed by pseudarthrosis of the femoral neck with 16.0% of all hip pathologies ^[3].

The objective of this study was to describe the epidemiological profile of patients who had undergone an intermediate hip prosthesis and to evaluate the clinical and functional results of this treatment within the Orthopedics-Traumatology department of the Niamey General Reference Hospital.

Materials and methods

Material

This retrospective, descriptive and analytical study, carried out between January 1, 2018 and December 31, 2024, included patients who had undergone PIH in the trauma-orthopaedics department of the HGR, with respect for anonymity and informed consent.

Methods

This was a retrospective, descriptive, and analytical study. Inclusion criteria included adult patients who, after diagnosis, were indicated for PIH, with complete medical records, and who completed the assessment. Data were collected from a pre-established individual data collection form.

Surgical Techniques

The main indications for PIH were femoral neck fractures and coxarthrosis. The choice of surgical indication was based on a rigorous clinical examination supported by the preoperative Postel and Merle d'Aubigné (PMA) score and a standard X-ray of the pelvis and hip profile concerned. The interventions were performed mainly under spinal anesthesiologist, by senior surgeons. The PIH technique consists of the excision of the femoral head and neck and the insertion of a femoral stem with an adapted prosthetic head, without acetabular reconstruction.

Assessment methods

Postel Merle d'Aubigné (PMA) score pre- and post-operatively:

It assesses hip function on three parameters; Pain, mobility and walking, each rated from 0 to 6.

Total score: 0 to 18 points

Normal hip: 18

Good: 15-17

Medium: 12-14

Bad: < 11

Results

Frequency of 26.10% compared to hip trauma in our study. The average age of our patients was 58.97 years with

extremes of 21 years and 90 years. Male gender predominates, i.e. 50.80%. Falling from one's height was the most frequent circumstance of occurrence of trauma, i.e. 50.76%.

The main indications for PIH were femoral neck fractures and coxarthrosis in 55.38% and 18.46% of cases respectively. The preoperative PMA score of Poor was the most frequent, at 53.85% of cases.

The duration of the intervention of 1H-2H was the most frequent, i.e. 70.77% of cases. Thromboembolism was the most frequent immediate postoperative complication, i.e. 10.76% of cases, followed by urinary tract infections and pressure ulcers in 7.70% of cases respectively.

The mean follow-up was 18.27 months, with extremes of 3 and 56 months. The post-operative PMA scores excellent and good were the most represented in 46.15 and 44.62% of cases respectively.

Table 1: Distribution of patients according to the postoperative Postel and Merle d'AUBERGINE score at the last follow-up

Post-operative PMA	Workforce(n)	Percentage
Good	30	46.15%
Excellent	29	44.62%
AVERAGE	4	6.15%
Bad	2	3.08%
Total	65	100

Discussion-Comments

During our study, PIH had a frequency of 26.10% compared to hip trauma. Our result is lower than Malian series such as Xhardez Y^[3] in 2004 in Mali who found 64% of cases related to PIH placement. This difference could be explained by the fact that the population certainly prefers traditional treatment and is under-informed about possible complications and also the high cost of the intervention. The average age of our patients was 58.97 years with extremes of 21 years and 90 years. Our result is comparable to those of Laurent DN E.^[4] in Mali in 2021 who found an average age of 58.1 years. However, higher than those of Amossou L F. et al.^[5] in Benin in 2018 who found an average age of 55.8 years. It should be noted that PIH is more indicated in patients with an age greater than or equal to 50 years in the majority of cases. The male sex was the most affected with 33 or 50.80% and a sex ratio of 1.03. This result is lower than those of Daniel M. et al.^[6] Niger in 2015 who also found a male predominance of 65.71% with a male/female ratio of 1.9. This male predominance could be explained by the fact that men are more exposed in terms of accidents than women. Falls were the main cause of fracture, representing 50.76% of cases. This etiology could be explained by senile osteoporosis, gait disorders and balance problems, which are frequently found in elderly subjects. Our results are similar to those of Rolland N J.^[7] in Madagascar in 2017 with a frequency of 53.33%, Laurent DN E.^[4] in Mali in 2021 who found 52.2% of cases.

In terms of immediate postoperative complications, thromboembolic disease represented 9.20%, our result is consistent with those of Lallier G. et al.^[8] in 2002 in France with 10.4% of cases. But higher than those of Dennis Z. et al.^[9] in 2014 in Singapore and B. Meryem in Morocco in 2011^[10] in 3.5% and 1.25% of cases respectively. This could be explained by the fact that the instructions given by professionals are not respected by patients and by negligence on their part.

The postoperative PMA score was good in 46.15% of cases followed by 44.62% excellent in total we had obtained 90.77% as a good result postoperatively. This result is identical to those of Sidibé M.^[11] in Mali in 2021 who had obtained 84.2% good results, Diallo B.^[12] with a rate of 88%, Kaoutar S.^[13] in Morocco in 2018 and Sidahmed O E.^[14] in Mali in 2015 who had found 93.0% very good and good results and 87.5%. Deepak J et al.^[15] in India found a good and excellent score in 88% of cases. But higher, according to the study conducted by M. Daniel et al.^[6] in 2015 in Niger 66% of cases were good, Rolland. N J.^[7] in Madagascar in 2017 had obtained 66.6% good results.

We note that our results are generally comparable to those in the literature, also in terms of mastery of the operating technique during the fitting of the prosthesis.

Conclusion

At the end of this study, we found that the implantation of the intermediate hip prosthesis is a common practice in the Orthopedics and Traumatology department of the HGR. It is a therapeutic option for disabling hip conditions. Its main goal is to restore normal hip function while eliminating pain, and allows the restoration of hip mobility.

Conflicts of Interest: There are no conflicts of interest.

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