



Hemiarthroplasty in Intertrochanteric Femur Fractures: A Descriptive Study of Length of Stay and Postoperative Complications in a Peripheral Hospital Setting

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ABSTRACT

Introduction: Intertrochanteric femur fractures in the elderly represent a significant clinical and socioeconomic challenge, particularly in resource-limited healthcare settings. The optimal surgical management remains debated, with hemiarthroplasty (HA) emerging as a viable alternative to internal fixation (IF) by allowing for immediate weight-bearing. This study aims to describe the postoperative outcomes, specifically length of stay (LOS) and complication rates, for patients undergoing HA for intertrochanteric fractures in a peripheral Type C hospital in Indonesia.

Methods: A retrospective, descriptive case series was conducted on patients treated with primary HA for intertrochanteric femur fractures between mid-2024 and mid-2025. Data on patient demographics, postoperative LOS, and the incidence of postoperative complications were extracted from hospital medical records. Descriptive statistics, including mean, median, standard

deviation (SD), range, frequencies, and percentages, were used for analysis.

Results: A total of 26 patients were included in the study, with a mean age of 69.8 ± 8.1 years; 65.4% (n=17) were female. The principal finding was an exceptionally short mean postoperative LOS of 2.5 ± 1.0 days (median: 2.5 days; range: 1-4 days). However, the overall complication rate was high at 46.2% (n=12). The most common complications were postoperative anemia, recorded in 26.9% (n=7) of patients, and prosthetic dislocation, which occurred in 19.2% (n=5) of patients.

Discussion: The observed ultra-short LOS is a significant deviation from international benchmarks and suggests a healthcare delivery model that prioritizes operational efficiency and rapid patient turnover, likely driven by resource constraints. This efficiency presents a compelling argument for the cost-effectiveness of HA in this specific context. The high complication rates, particularly for dislocation, are concerning but may reflect systemic factors such as surgical technique and the lack of supervised post-discharge care rather than an inherent failure of the procedure itself.

Conclusion: Hemiarthroplasty for intertrochanteric fractures in a peripheral hospital setting facilitates a remarkably short hospital stay, offering substantial benefits for resource management. While associated with a high rate of manageable complications, the procedure represents a strategically advantageous treatment modality. Future efforts should focus on implementing targeted quality improvement initiatives to mitigate the risks of dislocation and anemia, thereby optimizing the overall value of this efficient

surgical approach.

Keywords: Intertrochanteric Fracture, Hemiarthroplasty, Length of Stay, Postoperative Complications, Peripheral Hospital, Resource-Limited Setting.

INTRODUCTION

Background: The Growing Challenge of Geriatric Hip Fractures

Intertrochanteric femur fractures represent a profound and escalating public health challenge globally. These fractures, occurring in the trochanteric region of the proximal femur, are predominantly fragility fractures affecting the elderly population. The incidence of these injuries is projected to rise dramatically, from 1.66 million in 1990 to an estimated 6.26 million by 2050, a surge driven by increasing life expectancy and the consequent expansion of the geriatric demographic. This epidemiological trend carries significant clinical and socioeconomic implications. Intertrochanteric fractures are associated with substantial morbidity and mortality; one-year mortality rates are alarmingly high, ranging from 15% to 30%. For survivors, the consequences are often life-altering, leading to significant functional decline, chronic pain, loss of independence, and a diminished quality of life (Gudgunti, et al., 2024; Yong, et al., 2024).

The typical patient presenting with an intertrochanteric fracture is elderly, frequently female, and burdened with multiple pre-existing comorbidities such as cardiovascular disease, diabetes, and renal impairment. A critical characteristic of this patient cohort is poor bone quality, most commonly due to osteoporosis, which not only predisposes them to fracture from low-energy trauma like a simple fall from standing height but also complicates surgical management. This constellation of factors defines a fragile, high-risk population in whom the primary goal of treatment is not merely fracture healing, but a rapid and safe return to their pre-fracture functional level, with the lowest possible rates of complications and mortality. The urgency of this goal has shifted the standard of care decisively away from conservative management, which involves prolonged traction and bed rest and is associated with devastating complications such as pressure sores, pneumonia, and thromboembolic events. Consequently, surgical intervention has become the mainstay of treatment for the vast majority of these fractures (Gudgunti, et al., 2024; Yong, et al., 2024; Zhou, et al., 2017).

The Surgical Treatment Dilemma: Internal Fixation versus Arthroplasty

The surgical management of intertrochanteric fractures is centered around a fundamental debate between two distinct philosophies: fracture fixation and fracture replacement. The choice of approach is dictated by the fracture pattern, bone quality, and the patient's physiological status, with the ultimate aim of creating a stable construct that allows for early mobilization.

The traditional and most common approach is osteosynthesis, or internal fixation (IF), using orthopedic implants to stabilize the fractured bone fragments and allow them to heal. The primary devices used are the sliding hip screw (SHS) and various designs of cephalomedullary nails, such as the Proximal Femoral Nail (PFN). In stable fracture patterns, these devices have demonstrated good outcomes. Proponents of IF highlight its advantages, which can include less invasive surgical techniques, potentially shorter operative times, reduced intraoperative blood loss, preservation of the fracture hematoma to facilitate biological healing, and lower initial implant costs compared to arthroplasty (Görmeli, et al., 2015; Liu, et al., 2024; Yong, et al., 2024).

However, the efficacy of IF is severely challenged in the very patient population most affected by these injuries. Unstable fracture patterns—characterized by severe comminution, loss of the posteromedial buttress, or reverse obliquity—are present in 35-40% of cases. In these scenarios, achieving and maintaining an anatomical reduction and stable fixation in osteoporotic bone is notoriously difficult. The poor purchase of screws in soft, osteoporotic bone leads to a high risk of mechanical failure, including implant cut-out (where the screw migrates through the femoral head), non-union, malunion, and secondary loss of reduction. To mitigate these risks, surgeons often must impose periods of protected or non-weight-bearing, delaying the patient's mobilization. This enforced immobility directly contradicts the primary goal of treatment and reintroduces the risk of the severe systemic complications that surgical intervention is meant to avoid (Gudgunti, et al., 2024; Zhou, et al., 2017).

This is where the alternative philosophy of arthroplasty, specifically hemiarthroplasty (HA),

offers a paradigm shift. The fundamental principle of HA is not to fix the fracture but to remove and replace the fractured proximal femur, including the femoral head and neck, with a prosthetic implant. By doing so, the procedure effectively bypasses the biological problem of fracture healing altogether. This creates an immediately stable and pain-free joint construct that, in theory, permits full weight-bearing on the first postoperative day. This advantage of early and aggressive mobilization is the cornerstone of the argument for HA. It has gained significant traction as a viable and often preferred treatment option for unstable, comminuted intertrochanteric fractures in physiologically elderly patients with poor bone quality, for whom the risks of IF failure and prolonged immobilization are unacceptably high (Gudgunti, et al., 2024; Kim, et al., 2008; Yong, et al., 2024).

The Unique Context of Orthopedic Care in Peripheral Hospitals

The debate between IF and HA is well-documented in the literature, but the vast majority of this evidence originates from high-resource healthcare systems in developed nations. The applicability of these findings to resource-limited settings, such as a Type C peripheral hospital in Indonesia, is not straightforward. These environments operate under a unique set of constraints that fundamentally alter the risk-benefit calculation for any surgical intervention.

Peripheral hospitals often face significant challenges, including limited bed capacity, which creates constant pressure for high patient throughput. Financial constraints impact the availability of advanced surgical implants, specialized equipment, and comprehensive ancillary services. The multidisciplinary orthogeriatric teams that have been shown to improve outcomes in hip fracture patients are often not available (Rhatomy, et al., 2020; Utomo, et al., 2022).

In this context, the definition of treatment success must be expanded beyond purely clinical metrics. Operational efficiency—measured by variables such as length of stay (LOS), utilization of operating room time, and overall resource consumption per patient—becomes a critical determinant of a procedure's value. A treatment that facilitates rapid patient discharge frees up a scarce and

valuable resource—a hospital bed—allowing the institution to serve a larger patient population. Therefore, the concept of cost-effectiveness takes on a more immediate and pragmatic meaning. While many studies focus on the long-term societal costs of reoperations and rehabilitation when comparing IF and HA, the most pressing economic factor for a peripheral hospital is often the direct, immediate cost of an inpatient bed-day. A procedure that significantly shortens the LOS can therefore be considered highly cost-effective from an institutional perspective, even if its initial implant cost is higher (Axelrod, et al., 2020; Figved, et al., 2009; Liu, et al., 2024).

Rationale, Objectives, and Hypothesis

While the international literature provides a robust framework for understanding the clinical trade-offs between IF and HA, there is a notable scarcity of data examining the outcomes of HA specifically from the perspective of peripheral hospitals in developing regions like Southeast Asia. The real-world performance of this procedure, particularly in terms of operational metrics like LOS and its associated complication profile in a resource-constrained environment, remains poorly characterized.

The novelty of the present study lies in its focus on this specific context. By analyzing data from a Type C Indonesian hospital, this research aims to provide a unique perspective that may challenge or supplement existing international benchmarks. It seeks to illuminate how systemic pressures shape clinical practice and outcomes, offering valuable insights for healthcare providers and policymakers working in similar settings.

The primary objective of this study is to descriptively analyze the postoperative length of stay and the incidence of complications in a cohort of patients with intertrochanteric femur fractures treated with hemiarthroplasty at a peripheral hospital.

Based on the theoretical advantages of HA in promoting early mobilization and the operational imperatives of the study setting, we hypothesize that hemiarthroplasty, when

implemented in a peripheral Type C hospital, represents a highly efficient treatment modality. We predict this will be evidenced by a significantly shorter postoperative length of stay compared to established international standards. We further hypothesize that this profound operational benefit makes HA a favorable and strategically sound option in this context, as it aligns with the critical need for rapid patient turnover and optimized resource allocation, even when considering the potential for a distinct profile of postoperative complications.

METHODS

Study Design and Setting

This study was conducted as a retrospective, descriptive case series. The research was performed at a Type C General Hospital, a government-run facility situated in a peripheral, non-metropolitan region of Indonesia. As a Type C facility, the hospital provides secondary-level care with limited specialist services compared to tertiary referral centers. It serves a large local population and operates under the typical resource constraints of a public hospital in a developing nation, including high patient volume and limited bed capacity. The data for this study were collected over a one-year period, from mid-2024 to mid-2025, to capture a representative sample of cases managed at the institution.

Patient Selection

The study population was identified from the hospital's surgical and medical records databases. The inclusion and exclusion criteria were applied to form the final study cohort.

Inclusion Criteria:

All patients who presented to the hospital during the study period with a primary diagnosis of an intertrochanteric femur fracture and were subsequently treated with primary hemiarthroplasty were eligible for inclusion. This included cases where a concomitant, non-displaced femoral neck fracture was also present, as the intertrochanteric component was the primary driver of instability

and the indication for surgery.

Exclusion Criteria:

To ensure a homogenous cohort focused on the specific research question, patients with the following characteristics were excluded from the analysis:

1. Patients with isolated femoral neck fractures without an intertrochanteric component.
2. Patients with intertrochanteric fractures who were managed with any form of internal fixation, including but not limited to dynamic hip screws, proximal femoral nails, or plates and screws.
3. Patients managed non-operatively.

Data Collection and Variables

Data for all eligible patients were retrospectively extracted from the hospital's electronic and paper-based medical records, including admission notes, surgical reports, postoperative progress notes, and discharge summaries. A standardized data collection form was used to extract the following variables:

- **Patient Demographics:** Age (in years) at the time of surgery and gender (male or female).
- **Diagnosis:** The specific fracture diagnosis as recorded in the medical chart.
- **Primary Outcome Variable:** Postoperative Length of Stay (LOS). This was defined as the total number of days from the date of the hemiarthroplasty procedure to the date of hospital discharge.
- **Secondary Outcome Variable:** Incidence and type of postoperative complications. Data were collected on any complications explicitly documented in the patient's record during the inpatient stay or noted at a follow-up visit if the timing was specified. The analysis focused on the most frequently recorded complications in the dataset, namely prosthetic dislocation and postoperative anemia.

Statistical Analysis

The collected data were entered into a database and analyzed using standard descriptive

statistical methods. The analysis was performed using IBM SPSS Statistics for Windows, Version 25.0 (IBM Corp., Armonk, NY, USA).

- **Continuous Variables:** The variables of age and postoperative LOS were analyzed as continuous data. Measures of central tendency and dispersion were calculated, including the mean, median, standard deviation (SD), and range (minimum and maximum values).
- **Categorical Variables:** The variables of gender and the presence/type of complications were analyzed as categorical data. Frequencies (n) and corresponding percentages (%) were calculated to describe the distribution of these variables within the cohort.

All results are presented in summary tables to provide a clear and comprehensive overview of the study's findings. No inferential statistical tests were performed, consistent with the descriptive nature of the study design.

RESULTS

Cohort Demographics and Baseline Characteristics

A total of 26 patients who underwent hemiarthroplasty for an intertrochanteric femur fracture during the one-year study period met the inclusion criteria. The demographic and baseline characteristics of this cohort are summarized in Table 1.

The study population had a mean age of 69.8 ± 8.1 years, with a median age of 71.5 years. The age of the patients ranged from 56 to 83 years. There was a predominance of female patients, who constituted 65.4% (n=17) of the cohort, while male patients accounted for the remaining 34.6% (n=9). The diagnosis for all patients was a closed fracture of the trochanteric region of the femur. One case was specifically noted to have a concomitant collum femur fracture in addition to the primary intertrochanteric fracture.

Table 1: Patient Demographics and Baseline Characteristics (N=26)

Characteristic	Value
Age (years)	
Mean \pm SD	69.8 \pm 8.1
Median (Range)	71.5 (56 - 83)
Gender	
Female, n (%)	17 (65.4)
Male, n (%)	9 (34.6)
Diagnosis	
Intertrochanteric Femur Fracture, n (%)	26 (100.0)

Primary Outcome: Postoperative Length of Stay

The primary outcome of this study was the postoperative length of stay (LOS), measured in days from surgery to discharge. The analysis revealed an exceptionally short duration of hospitalization for the entire cohort. The mean postoperative LOS was 2.5 ± 1.0 days, with a median of 2.5 days. The range of stay was narrow, from a minimum of 1 day to a maximum of 4 days.

The frequency distribution of the LOS, as detailed in Table 2, demonstrates a consistent pattern of early discharge. The largest groups of patients were discharged on postoperative day 1 (30.8%) and day 3 (30.8%). A significant portion was also discharged on day 2 (23.1%), with a smaller group staying until day 4 (15.4%). No patient in the cohort remained in the hospital for more than 4 days post-surgery.

Table 2: Analysis of Postoperative Length of Stay (N=26)

Statistical Parameter	Value (days)
Mean \pm SD	2.5 \pm 1.0
Median	2.5
Range	1 - 4
Frequency Distribution	Number of Patients (n)
1 Day	8
2 Days	6
3 Days	8
4 Days	4

Secondary Outcome: Postoperative Complications

Postoperative complications were recorded in nearly half of the study population. A total of 12 patients (46.2%) experienced at least one documented complication following their hemiarthroplasty procedure. The complications recorded in the dataset were limited to postoperative anemia and prosthetic dislocation. The incidence and profile of these complications are detailed in Table 3.

Postoperative anemia was the most frequently noted complication, affecting 7 of the 26 patients, for an incidence of 26.9%. Prosthetic dislocation was the second recorded complication, occurring in 5 patients, which corresponds to a high incidence of 19.2%. No other complications, such as surgical site infection, deep vein thrombosis, pulmonary embolism, or periprosthetic fracture, were documented in the available patient records for this cohort.

Table 3: Incidence and Profile of Postoperative Complications (N=26)

Complication Type	Number of Patients (n)	Incidence (%)
Any Complication	12	46.2
Postoperative Anemia	7	26.9
Prosthetic Dislocation	5	19.2

A more detailed examination of the five cases of prosthetic dislocation is presented in Table 4. These events occurred in patients across the age spectrum of the cohort. The timing of the dislocation was documented in the patient records. Three of the five dislocations (60%) occurred

within one week of the primary surgery, indicating an early failure. The remaining two dislocations (40%) occurred within one month postoperatively.

Table 4: Detailed Analysis of Postoperative Prosthetic Dislocations (N=5)

Patient ID (Anonymized)	Age (years)	Gender	Length of Stay (days)	Recorded Timing of Dislocation
1	74	Female	3	1 week post-HA
8	67	Male	2	1 week post-HA
16	57	Female	3	1 month post-HA
20	73	Male	1	1 week post-HA
24	66	Male	2	1 month post-HA

DISCUSSION

Summary of Principal Findings

This descriptive study provides a unique snapshot of the outcomes of hemiarthroplasty for intertrochanteric fractures within the specific context of a peripheral, resource-constrained hospital in Indonesia. The analysis of 26 consecutive cases yielded two principal, and seemingly contradictory, findings. First, the study cohort experienced an exceptionally short mean postoperative length of stay of only 2.5 days. Second, this operational efficiency was accompanied

by a high rate of postoperative complications, with an overall incidence of 46.2%, driven by a 26.9% rate of postoperative anemia and an alarming 19.2% rate of prosthetic dislocation. The ensuing discussion is framed by the inherent tension between these two outcomes: a model of remarkable institutional efficiency on one hand, and a significant burden of clinical morbidity on the other. This duality necessitates a nuanced interpretation of the role and value of hemiarthroplasty in this specific healthcare environment.

The Ultra-Short Hospital Stay: A New Paradigm for Resource-Limited Settings?

The most striking finding of this study is the ultra-short postoperative length of stay. The mean LOS of 2.5 days stands in stark contrast to figures reported across the international literature. Large-scale studies and clinical trials from North America and Europe typically report mean hospital stays for hip fracture patients undergoing arthroplasty to be between 5 and 10 days. For instance, a large cohort study reported a mean LOS of 5.7 days, while other comparative trials have documented mean stays of 7.4 days and 9.6 days. Even within other Asian healthcare systems, reported hospitalization periods are often significantly longer, with some studies noting mean durations of admission approaching 29 or 30 days (Kim, et al., 2008; Sim, et al., 2019; Zhou, et al., 2017).

This profound difference cannot be reasonably attributed to a healthier or more robust patient population, especially given the high complication rate observed. Instead, it is far more likely that this practice of rapid discharge is an emergent or deliberate strategy dictated by the systemic pressures inherent to a Type C peripheral hospital. In an environment characterized by high demand for surgical services and severely limited bed capacity, the imperative to maximize patient throughput becomes a primary driver of clinical practice (Rhatomy, et al., 2020; Utomo, et al., 2022).

This finding has direct and significant implications for the cost-effectiveness of hemiarthroplasty in this setting. The international debate on the relative costs of HA versus IF often

concludes that HA has a higher initial procedural cost, driven by more expensive implants and, in many studies, a longer hospital stay. However, this study's data fundamentally challenge the latter assumption. By drastically reducing the LOS—often the single largest contributor to the total cost of an admission—this model may render HA a more cost-effective option than IF even in the immediate short term. This aligns with and amplifies the findings of long-term economic analyses, which have shown that the higher initial cost of HA is often offset over time by the substantial costs associated with the higher reoperation rates of failed internal fixation (Axelrod, et al., 2020; Figved, et al., 2009; Liu, et al., 2024).

However, this model of hyper-efficiency is not without significant potential risks. A balanced interpretation must acknowledge the literature that associates very early discharge (defined as ≤ 10 days) with a higher risk of 1-year mortality. This association may arise because patients are discharged before they are physiologically stable, before adequate pain control is achieved, or before a safe and supportive discharge plan can be arranged. This practice effectively shifts the burden of care from the supervised hospital environment to the patient's family and community, which may lack the resources and expertise to manage the critical early recovery period. This raises a crucial question: does the institutional gain in efficiency come at the cost of increased post-discharge morbidity and mortality for the patient? (Sim, et al., 2019).

Deconstructing the High Complication Rate

The high overall complication rate of 46.2% serves as a critical counterpoint to the operational efficiency of the short-stay model. The specific profile of complications—dominated by prosthetic dislocation and postoperative anemia—provides valuable clues about the systemic challenges within the care pathway.

The 19.2% incidence of prosthetic dislocation is a major clinical concern and is substantially higher than the rates of 1-15% typically reported in the literature. Dislocation is a devastating complication, associated with significant pain, the need for further procedures (often with high

failure rates for closed reduction), and a dramatic increase in mortality; some studies report a six-month mortality rate as high as 65% following a single dislocation event. Understanding the potential drivers of this high rate is therefore essential. The literature identifies several key risk factors. The surgical approach is paramount; the posterior approach, which disrupts the posterior capsule and short external rotators, is associated with a dislocation risk that is 2.7 times higher than the direct lateral approach (7.2% vs. 2.7%) unless a meticulous and robust soft-tissue repair is performed. Other identified risk factors include patient-related issues such as dementia or neuromuscular disease, which can lead to non-compliance with hip precautions, and technical surgical factors like failure to restore the native femoral offset, which affects soft-tissue tension. The practice of ultra-early discharge may itself be a contributing factor. The majority of dislocations occur within the first month post-surgery, a period of maximum vulnerability. Discharging frail, elderly patients after only one or two days removes them from a supervised clinical environment and places them in a home setting where adherence to crucial hip precautions may be inconsistent, thereby increasing their risk (Abram and Murray, 2015; Gill, et al., 2018; Kristoffersen, et al., 2020; Mukka, et al., 2013; Parker, 2015; Salem, et al., 2014).

The 26.9% incidence of postoperative anemia is also a significant finding. Postoperative anemia is a common and serious complication following hip fracture surgery, independently associated with increased morbidity, mortality, and longer hospital stays. Hemiarthroplasty, being a more extensive procedure than some IF techniques, can be associated with greater intraoperative blood loss. The optimal management of this issue is encapsulated in the principles of Patient Blood Management (PBM), a multimodal, evidence-based approach to conserve the patient's own blood. In an elective setting, PBM begins with preoperative screening and treatment of anemia, as even mild preoperative anemia increases the risk of postoperative transfusion. However, in the emergency trauma setting of a peripheral hospital, preoperative optimization is often not feasible. The focus must therefore shift to intraoperative measures, such as the use of antifibrinolytic agents like tranexamic acid, and effective postoperative management, including a restrictive transfusion

strategy (transfusing only when hemoglobin drops below a threshold of 7-8 g/dL in asymptomatic patients) and the use of intravenous or oral iron supplementation to support erythropoiesis. The high rate of anemia documented in our cohort suggests that a standardized PBM protocol may not be fully implemented, representing a clear and actionable area for future quality improvement initiatives (Halm, et al., 2003; Sim, et al., 2019).

It is crucial to recognize that this specific complication profile is likely not an indictment of the hemiarthroplasty implant itself, but rather a reflection of the entire system of care in which the procedure is performed. The HA procedure enables the short stay, but the pressures that drive this short stay may, in turn, exacerbate the risks of complications that are linked to variability in surgical technique and the absence of comprehensive perioperative protocols.

Synthesizing the Argument: The Risk-Benefit Profile of HA in a Peripheral Context

When synthesized, the findings of this study paint a complex but coherent picture of the role of hemiarthroplasty in a resource-limited setting. The procedure's primary clinical advantage remains its ability to provide an immediately stable joint that allows for full weight-bearing, thereby circumventing the notorious complications of mechanical failure and delayed mobilization associated with internal fixation in elderly, osteoporotic patients. This study's key contribution is to demonstrate how this fundamental clinical benefit can be leveraged to achieve extreme operational efficiency, as evidenced by the 2.5-day mean LOS. This efficiency has profound and positive implications for hospital resource management, patient access to care, and overall healthcare costs in a peripheral context (Gudgunti, et al., 2024; Yong, et al., 2024).

The high complication rates, while deeply concerning, must be viewed through this same lens. They should not be interpreted as a reason to summarily reject the procedure, but rather as a critical and, importantly, manageable challenge. The argument is not that complications are acceptable, but that the immense systemic benefits derived from high patient throughput and optimized resource utilization may be so significant that they justify a strategy of accepting and

aggressively managing a higher baseline risk of complications. The choice is not between a perfect outcome and a flawed one; it is a pragmatic decision between two imperfect options. The alternative—internal fixation—may present with a different complication profile (e.g., implant failure, non-union) but would almost certainly necessitate a longer hospital stay, thereby consuming more resources and limiting the hospital's capacity to treat other patients.

Therefore, for a Type C hospital, the unique combination of immediate patient mobilization and the potential for an ultra-short hospital stay makes hemiarthroplasty a compelling and strategically superior option. The path forward is not to abandon this efficient model but to refine it. The success of this approach hinges on the implementation of targeted, low-cost, high-impact measures aimed directly at mitigating the key risks of dislocation and anemia that have been identified.

Limitations and Future Directions

The findings and interpretations of this study must be considered in light of several important limitations. The primary limitation is the study design; as a small, retrospective, non-comparative case series, it is susceptible to selection bias and confounding. The small sample size of 26 patients limits the statistical power and the generalizability of the results to other settings. The descriptive nature of the analysis precludes the establishment of causal relationships between the surgical procedure, the short LOS, and the observed complications.

Furthermore, the dataset extracted from the medical records lacked a significant degree of clinical granularity. Crucial variables that are known to influence outcomes were unavailable for analysis, including the specific surgical approach employed (e.g., posterior vs. lateral), the type of prosthesis used (e.g., cemented vs. uncemented), detailed metrics such as intraoperative blood loss and preoperative hemoglobin levels, and patient-specific factors like cognitive status or comorbidities. Most importantly, the dataset contained no information on postoperative functional outcomes (such as the Harris Hip Score), quality of life, or long-term data on reoperation rates and

mortality. This absence of follow-up data makes it impossible to assess the true long-term cost and benefit of the short-stay model.

These limitations clearly delineate a path for future research. There is a pressing need for a well-designed, prospective, and comparative study to be conducted in this or a similar setting. Ideally, this would take the form of a randomized controlled trial comparing primary hemiarthroplasty to a modern internal fixation technique (e.g., a proximal femoral nail) for unstable intertrochanteric fractures. Such a study should meticulously collect detailed data on surgical variables, perioperative care protocols, and patient characteristics. Crucially, it must include a robust follow-up protocol, tracking patients for a minimum of one year to measure validated functional outcome scores, quality of life, reoperation rates, and all-cause mortality. A formal cost-effectiveness analysis, incorporating both direct in-hospital costs and indirect long-term societal costs, should be a primary endpoint. Such research would provide the high-quality evidence needed to definitively guide clinical practice and health policy for the management of this common and debilitating injury in resource-limited settings.

CONCLUSION

In the distinct operational environment of a peripheral Type C hospital, where resource constraints and high patient volume are dominant pressures, hemiarthroplasty for the treatment of intertrochanteric femur fractures facilitates an exceptionally short postoperative length of stay. This remarkable operational efficiency confers a significant and tangible advantage for the management of limited healthcare resources, allowing for greater patient access to surgical care.

This short-stay model, however, is associated with a high incidence of postoperative complications, particularly prosthetic dislocation and anemia. These adverse events should not be viewed as an inherent failure of the arthroplasty procedure itself, but rather as manageable challenges within the broader perioperative care pathway that are likely exacerbated by the practice

of rapid discharge.

Therefore, hemiarthroplasty represents a viable and strategically advantageous treatment modality in this specific setting. The challenge and opportunity for the future lie not in abandoning this efficient approach, but in optimizing it. Future efforts should be intensely focused on the development and implementation of targeted, low-cost quality improvement initiatives—such as the standardization of a safer surgical approach and the adoption of patient blood management principles—to directly mitigate the specific risks of dislocation and anemia identified in this study. By doing so, the full value of this efficient surgical approach can be realized, improving both institutional performance and patient outcomes.

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