



MANAGEMENT ACUTE HIP FRACTURE: NARRATIVE REVIEW

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ABSTRACT

The surgical management of acute hip fractures is a critical juncture, demanding surgical expertise and careful decision-making. Three key factors influence the decision-making process: a comprehensive patient health assessment to determine surgical feasibility, an evaluation of procedure urgency based on patient stability and potential consequences of delay, and the choice of surgical intervention guided by factors such as fracture location, displacement degree, and patient physiology. Early surgery is preferred to minimize complications and enhance patient outcomes, typically within the first 48 hours of admission. For femoral neck fractures, arthroplasty is favored for displaced fractures in elderly patients, while intertrochanteric and subtrochanteric fractures require surgical intervention and postoperative rehabilitation for optimal recovery. Perioperative care encompasses a comprehensive and personalized approach from assessment to rehabilitation.

KEYWORDS : Hip fracture, Surgical management, Arthroplasty, Intertrochanteric fractures.

INTRODUCTION

The fracture of one's spirit is a matter of profound concern, not limited to any particular age group, but affecting souls across the human spectrum. Its implications are far-reaching, transcending mere statistics, with consequences that resonate in emotional, psychological, and societal spheres. This contemplative exploration delves into the intricate landscape of fractured spirits, offering insights into the art of healing and resilience. It encompasses the initial assessment of emotional wounds, the journey of self-discovery, the nurturing of a wounded heart, and the path to renewed strength. Recent developments in psychology, mindfulness practices, and the power of human connection have illuminated pathways toward emotional recovery and personal growth. This exploration delves into self-awareness, healing modalities, community support, emotional pain management, and the transformative journey towards wholeness. Interdisciplinary collaborations, guided by empathy and compassion, are pivotal in this endeavor (1).

METHODS

A thorough research strategy was meticulously crafted in collaboration with a seasoned information specialist to unearth pertinent literature. Various electronic databases, including PubMed, Embase, and the Cochrane Library, were meticulously scoured using a thoughtfully constructed set of keywords encompassing acute hip fractures, management, surgical interventions, perioperative care, and rehabilitation. Additionally, our quest for knowledge extended to meticulously hand-searching reference lists from selected articles and pertinent review papers to ensure the incorporation of all pertinent studies. Our focus was on adult patients grappling with acute hip fractures, specifically investigating their management strategies, surgical techniques, perioperative care, and rehabilitation efforts.

We took care to exclude studies published in languages other than English, case reports, editorials, and conference abstracts. Subsequently, we meticulously evaluated the full-text versions of potentially eligible studies. The culmination of our efforts yielded a trove of 15 pertinent articles, which were thoroughly reviewed through a narrative synthesis.

Operative Management

The operative management of acute hip fractures represents a pivotal juncture in the patient's journey, demanding surgeons to exercise their expertise and discernment. Three paramount facets weigh on the decision-making process when determining the most suitable course of action. Initially, the patient's comprehensive health assessment establishes whether surgery remains a feasible option. Subsequently, the urgency of the procedure is meticulously evaluated, taking into account the patient's stability and the potential repercussions of any delay. Lastly, the choice of surgical intervention is dictated by factors such as the precise anatomical location of the fracture, the degree of displacement, and the patient's physiological state. These deliberations are of the essence, ensuring that the optimal route is charted for each individual patient, in accordance with their unique circumstances (2).

Timing of Surgery in Acute Hip Fractures

The temporal dimension of surgery assumes a critical role in the management of acute hip fractures. Swift intervention stands as the preferred course of action, aiming to minimize complications and augment patient outcomes. The objective revolves around conducting the surgical procedure as soon as the patient's medical condition allows, mindful of factors such as the patient's stability and concurrent medical conditions. Timely surgical intervention, generally performed within the first 48 hours of admission, has proven to be associated with a decrease in complications, including diminished rates of pneumonia, pressure ulcers, and urinary tract infections. Furthermore, it facilitates shorter hospitalization periods and enhances functional recovery. Conversely, any delay beyond the 48-hour threshold escalates the risk of complications and can result in prolonged pain and immobility (2,3).

However, the decision to opt for early surgery necessitates a careful equilibrium between the patient's overall health status and their readiness for the surgical procedure. Preoperative optimization, which encompasses medical management and addressing any underlying comorbidities, stands as a vital step in ensuring a safe surgical experience. Ultimately, the timing of surgery for acute hip fractures must be a bespoke decision, factoring in the patient's medical condition,

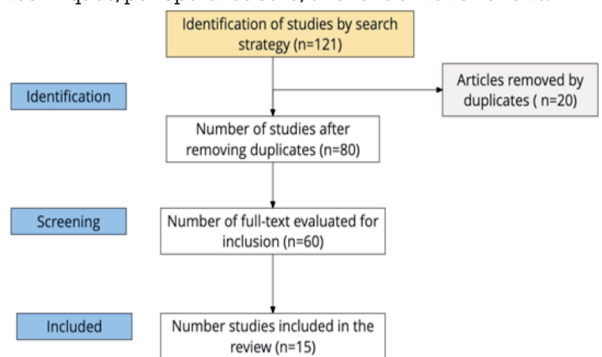


Figure 1. PRISMA.

readiness for surgery, and the available resources. Collaborative decision-making, involving orthopedic surgeons, anesthesiologists, and geriatricians, stands as a pivotal process in determining the optimal surgical timing that maximizes benefits while mitigating potential procedure-related risks (3).

Femoral Neck Fracture

Femoral neck fractures usher in a distinct set of challenges in their management, obliging a meticulous evaluation of treatment options that hinge on variables such as fracture displacement, patient age, and associated risks. A comprehensive randomized study, scrutinizing the choice between multiple cancellous screws and a sliding hip screw in a cohort of 729 patients with nondisplaced fractures and 350 patients with displaced fractures, disclosed no statistically significant distinction in the risk of reoperation over a two-year span. However, subgroup analysis spotlighted improved outcomes with the use of a sliding hip screw for displaced or base-of-neck fractures exhibiting vertically oriented fracture lines, as it demonstrated superior biomechanical load tolerance in laboratory testing (4).

For displaced femoral-neck fractures in patients aged 65 or older with low-energy (fragility) fractures, arthroplasty typically supersedes internal fixation as the preferred approach. A comprehensive meta-analysis, encompassing 14 randomized trials and 1907 patients, substantiated that arthroplasty correlated with a lower reoperation risk in comparison to internal fixation. Both hemiarthroplasty and total hip arthroplasty delivered superior functional outcomes and an improved quality of life within one year post-surgery, as opposed to internal fixation. Prolonged follow-up studies further revealed enhanced hip function after total hip arthroplasty. Nonetheless, it should be noted that arthroplasty does bear a heightened risk of infection and dislocation (4,5).

A lively debate endures regarding the favored implant choice, either total hip arthroplasty or hemiarthroplasty, for arthroplasty procedures. A meta-analysis demonstrated a preference for total hip arthroplasty owing to its lower reoperation rates and enhanced hip function, although it underscored a higher risk of dislocation. Currently, a substantial randomized trial involving 1500 patients is underway to scrutinize and compare the two approaches. Conversely, internal fixation presents a less invasive option and retains popularity among certain patients, particularly younger individuals with higher-energy fractures. Adequate fracture reduction stands as a pivotal requisite for the success of internal fixation, as inadequate reduction augments the risk of fixation failure (6-8).

A nuanced understanding of the spectrum of treatment options for femoral-neck fractures assumes paramount importance in optimizing patient outcomes while concurrently minimizing complications. Tailoring the decision-making process to individual patients, with careful consideration of factors such as fracture characteristics, patient age, and associated risks, stands as the cornerstone of effective management (9).

Intertrochanteric and Subtrochanteric Fractures: Comprehensive Care and Rehabilitation

Intertrochanteric fractures are a prevalent type of hip injury, frequently afflicting older individuals, especially those with osteoporosis. These fractures manifest in the region between the greater and lesser trochanters of the femur, often stemming from trauma, accidents, or underlying bone fragility. The hallmark signs include pain, swelling, and an inability to bear weight on the affected leg. Typically, diagnosis hinges on imaging studies, such as X-rays or CT scans, which provide invaluable insights into the fracture pattern and degree of displacement (10).

Surgical intervention stands as the cornerstone in managing intertrochanteric fractures, facilitating early mobilization, pain mitigation, and the restoration of function. A range of surgical techniques is at the surgeon's disposal, encompassing intramedullary nails, compression hip screws, or dynamic hip screws. The selection of the implant and surgical approach hinges on factors such as fracture stability, bone quality, and the patient's specific comorbidities (10,11).

The path to recovery extends into the postoperative phase, where rehabilitation assumes a pivotal role. Physical therapy becomes instrumental in enhancing range of motion, strength, and mobility. Under the vigilant guidance of healthcare professionals, weight-bearing and gait training are gradually introduced. Potential complications related to intertrochanteric fractures encompass implant failure, infections, nonunion, or malunion, necessitating diligent monitoring, follow-up appointments, and imaging studies to assess healing progress and uncover potential issues (11).

Subtrochanteric Fractures, a subset of hip fractures, occur just below the lesser trochanter of the femur. Typically resulting from high-energy trauma like motor vehicle accidents or falls from significant heights, they can also affect individuals with compromised bone strength due to conditions like osteoporosis. These fractures manifest with excruciating pain, substantial swelling, and the inability to bear weight on the injured leg. The primary course of action revolves around surgical intervention, often involving the application of intramedullary nails or plates to stabilize the fracture site. For an optimal recovery and the prevention of complications, rehabilitation and vigilant monitoring play a central role (12,13).

Perioperative Care

The perioperative care for acute hip fractures revolves around the meticulous orchestration of every facet of care to ensure optimal outcomes and minimize complications throughout the surgical journey. Preceding the surgery, a comprehensive medical evaluation is executed to fine-tune the patient's health status. During the surgical procedure, utmost care is dedicated to proper positioning, the scrupulous execution of surgical techniques, and the delicate handling of soft tissues to fortify the success of fracture stabilization. Post-surgery, paramount importance is accorded to pain management, infection prevention measures, and the prompt reestablishment of mobility. The journey toward rehabilitation, spanning both physical and occupational therapy, is initiated to rekindle functionality, strength, and mobility. Routine follow-up appointments and imaging studies are integral to monitoring the progress of healing and unearthing potential complications. The multidisciplinary approach, weaving together the skills of orthopedic surgeons, anesthesiologists, nurses, and therapists, paves the way for comprehensive and personalized perioperative care for acute hip fractures (14,15).

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