IOTA Special Issue on Hip Fractures

OPEN

Hip Fracture Management

Global Approaches and Systems

Theodore Miclau, MD*

Abstract

Hip fractures, among the most common geriatric injuries, are associated with adverse patient outcomes and significant costs. The incidence of these fractures continues to rise with an aging population worldwide. While many factors that negatively impact patient outcomes are nonmodifiable, others, which include pre- and postoperative medical management, timing of surgical stabilization, and fracture fixation methods, are modifiable and have been shown to affect outcomes. Treatment pathways are dependent upon available resources and established systems, and comparative guidelines from different regions and countries are not well documented. This special issue seeks to highlight regional differences in hip fracture care globally and represents a collaborative work of member societies of the International Orthopaedic Trauma Association, an international association of orthopaedic societies dedicated to the promotion of musculoskeletal trauma care through advancements in patient care, research, and education. The expectation is that better understanding these differences will aid efforts to better understand, improve, and standardize existing approaches to hip fracture management worldwide.

Keywords: global, hip fractures, international, musculoskeletal, systems

1. Introduction

The world's population is aging. Consequently, associated osteoporotic fractures represent growing societal medical, social, and financial challenges.[1–3] Millions of adults sustain hip fractures a year globally, facing significant disability, serious complications, and substantial mortality rates.[4–7] Worldwide, the overall incidence of hip fractures was estimated to be between 1.25 and 1.66 million in 1990, increasing to an estimated 4.5 to 6.5 million per year by 2050.[8,9] While one-half of hip fractures occur in elderly patients in North America and Europe, substantial increases in the incidences of hip fractures in Asia and Latin America are playing a role in the overall increases in hip fractures globally; percentages in Asia alone are estimated to increase from 26% of all hip fractures in 1990 to 45% in 2050.[8,9]

As patients age, their serious comorbidities also increase, further complicating treatments and outcomes.[10] While many factors that contribute to adverse patient outcomes are patient-related and nonmodifiable, others, including pre- and postoperative medical management, method of surgical stabilization, and timing of operative intervention can be modified.[11,12] To mitigate the substantial negative impacts on patients and burden of disease on health systems, countries, medical societies, hospitals, and physicians have worked to develop better pathways and standards for hip fracture management.[12–16] Some countries have more highly developed standards, while others are in the early stages of creating optimal pathways, with many of the obstacles being created by financial barriers. Areas of focus have included management at initial presentation and preoperative evaluation (medical and cognitive), integrated medical care models, pain management, surgical timing and technique, postoperative management (medical, early mobilization, fall reduction, and bone health), and transition from hospital to ongoing care.[17] Globally, treatment pathways are dependent upon available resources and established systems.

Comparative treatment guidelines for hip fracture care in different countries are not well-documented. This supplement seeks to describe the state of hip fracture systems in different regions and countries and represents a collaborative work of member societies of the International Orthopaedic Trauma Association, an international association of orthopaedic societies dedicated to the promotion of musculoskeletal trauma care through advancements in patient care, research, and education. The information in these reports will aid efforts to better understand, improve, and standardize existing approaches to hip fracture management worldwide.

References

1. Riggs BL, Melton LJIII. The worldwide problem of osteoporosis: insights afforded by epidemiology. Bone. 1995;17 (5 suppl):505S–511S.
2. Russo A, Owens PL, Stocks C. Agency for Healthcare Research and Quality: Common Injuries That Result in Hospitalization, 2004. Healthcare Coast and Utilization Project. 2016.

Source of funding: Nil.

Institutional Review Board approval and Animal Use Committee approval were deemed exempt.

The author has no conflicts of interest to disclose.

Department of Orthopaedic Surgery, Orthopaedic Trauma Institute, University of California, San Francisco, Zuckerberg San Francisco General Hospital, San Francisco, CA

** Corresponding author. Address: Orthopaedic Trauma Institute, 2550 23rd St. Building 9, 2nd Floor, San Francisco, CA, 94110. E-mail address: Theodore.Miclau@ucsf.edu (T. Miclau).*

OTA (2020) e069

Received: 16 December 2019 / Accepted: 23 December 2019

Published online 23 March 2020

http://dx.doi.org/10.1097/OI9.0000000000000069

3. Melton LJ3rd. Hip fractures: a worldwide problem today and tomorrow. Bone. 1993;14 (suppl 1):S1–8.
4. Brauer CA, Coca-Perraillon M, Cutler DM, et al. Incidence and mortality of hip fractures in the United States. JAMA. 2009;302:1573–1579.
5. Haentjens P, Magaziner J, Colon-Emeric CS, et al. Meta-analysis: Excess mortality after hip fracture among older women and men. Ann Intern Med. 2010;152:380–390.
6. Panula J, Pihlajamaki H, Mattila VM, et al. Mortality and cause of death in hip fracture patients aged 65 or older: a population-based study. BMC Musculoskelet Disord. 2011;12:105.
7. Peeters CM, Visser E, Van de Ree CL, et al. Quality of life after hip fracture in the elderly: a systematic literature review. Injury. 2016; 47:1369–1382.
8. Cooper C, Campion G, Melton LJIII. Hip fractures in the elderly: a world-wide projection. Osteoporos Int. 1992;2:285–289.
9. Gullberg B, Johnell O, Kanis JA. World-wide projections for hip fracture. Osteoporos Int. 1997;7:407–413.
10. Greenstein AS, Gorczyca JT. Orthopedic surgery and the geriatric patient. Clin Geriatr Med. 2019;35:65–92.
11. Ryan DJ, Yoshihara H, Yoneoka D, et al. Delay in hip fracture surgery: an analysis of patient-specific and hospital-specific risk factors. J Orthop Trauma. 2015;29:343–348.
12. American Academy of Orthopaedic Surgeons. Management of Hip Fractures in the Elderly: Evidence-Based Clinical Practice Guideline. Rosemont, IL. American Academy of Orthopaedic Surgeons. 2014. Available at: http://www.aaos.org/research/guidelines/HipFxSummaryofRecommendations.pdf. Accessed February 18, 2016.
13. Boddaert J, Cohen-Bittan J, Khiami F, et al. Postoperative admission to a dedicated geriatric unit decreases mortality in elderly patients with hip fracture. PLoS One. 2014;9:e83795.
14. Flikweert ER, Izaks GJ, Knobben BA, et al. The development of a comprehensive multidisciplinary care pathway for patients with a hip fracture: design and results of a clinical trial. BMC Musculoskelet Disord. 2014;15:188.
15. Patel JN, Klein DS, Sreekumar S, et al. Outcomes in multidisciplinary team-based approach in geriatric hip fracture care: a systematic review. J Am Acad Orthop Surg. 2019;[Epub ahead of print].
16. Swart E, Vasudeva E, Makhni EC, et al. Dedicated perioperative hip fracture comanagement programs are cost-effective in high-volume centers: an economic analysis. Clin Orthop Relat Res. 2016;474: 222–233.
17. Tejwani NC, Aggarwal VK. Intertrochanteric Hip Fractures in the Geriatric Population. In: Orthopaedic Knowledge Update Trauma. 5. ed. by Ricci WM, Ostrum RF. American Academy of Orthopaedic Surgeons;2016:625–635.