Did Implementation of the HIP ATTACK Protocol Change Time to Surgery and Mobilization for Hip Fracture Patients?

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INTRODUCTION:

Optimization of hip fracture pathways are important to improve patient outcomes in the postoperative period. In 2016, our institution, as part of the HIP ATTACK clinical trial, implemented a geriatric hip fracture pathway in order to reduce delays to the operating room and improve postoperative outcomes. The purpose of this study was to determine if the implementation of the HIP ATTACK protocol for hip fracture patients decreased delays in surgical fixation or postoperative mobilization. Our hypothesis is that since implementation of the HIP ATTACK protocols, time to surgery and time to mobilization have improved.

METHODS: This was a retrospective review of patients who underwent hip fracture surgery between January 2011 and January 2021. Patient demographics, injury characteristics, and floor of admission were collected and analyzed. Time of diagnosis was defined as the time of the initial presenting radiograph, and time of mobilization was defined as the time the patient stood at edge of bed with physical therapy (PT). HIP ATTACK implementation at our institution was September 2016.

RESULTS:

A total of 781 patients (average age of 78 years) were included in our analysis. Three-hundred-ninety-five patients were operated on prior to September 2016, while 386 were operated on after HIP ATTACK implementation. Time from diagnosis to surgery was significantly decreased following HIP ATTACK implementation compared to prior on average by 9 hours ($p < 0.0001$). Time from surgery to physical therapy evaluation was on average 4 hours faster following HIP ATTACK implementation ($p = 0.049$). Time from surgery to mobilization was not significantly different pre and post HIP ATTACK implementation ($p = 0.63$).

DISCUSSION AND CONCLUSION:

Time to surgery and PT evaluation was significantly improved following implementation of HIP ATTACK at our institution, while time to mobilize from surgery was non-significantly different. At our institution, implementation of HIP ATTACK yielded notable improvements in patient time to surgery and PT evaluation that could point to improved long-term patient outcomes.

Table 1. Patient Demographics

	Patient # or Avg ± Std. Dev	% of patients or (range)
Total	781	
Sex		
Male	282	36.11%
Female	499	63.89%
Age	77.9 ± 11.8	(50-102)
Fracture classification		
Femoral Neck	345	44.2%
Intertrochanteric	371	47.5%
Subtrochanteric	65	8.3%
Mechanism of Injury		
Low	730	93.5%
High	48	6.1%
Atraumatic	3	0.4%
Transfer Status		
ED to ED	178	22.8%
Floor to Floor	93	11.9%
N/A (presented at primary hospital)	510	65.3%
Average Charlson Comorbidity	5.25 ± 2.36	(1-15)
Deceased in hospital	18	2.3%

Table 2. Time to... by HIP ATTACK Implementation

	Pre Hip ATTACK (hours) (Avg ± Std. Dev) (n)	Post Hip ATTACK (hours) (Avg ± Std. Dev) (n)		Difference (Hours)
Time from Diagnosis to Surgery	30.08 ± 34.00 (336)	21.67 ± 15.51 (386)	**p < 0.0001**	8.41
Time from Surgery to PT Evaluation	30.30 ± 24.25 (328)	26.90 ± 21.73 (379)	**p = 0.049**	3.4
Time from Surgery to Mobilization	59.49 ± 49.70 (260)	57.62 ± 42.33 (302)	p = 0.6	1.87