

Transitioning minimally invasive lumbar fusion to the ambulatory setting: an assessment of contributors to length of stay in older patients

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Introduction

Minimally invasive (MIS) spinal fusions have not consistently provided the desired length of stay and cost benefits. Prior evidence of the safety and efficacy of MIS fusions in the ambulatory setting exists but is sparse and limited to younger patients. The purpose of this study is to determine contributors to length of stay that preferentially affect older patients.

Methods

Eighty-one patients who underwent MIS LLIF/TLIF were included. The patients were sorted into cohorts. The older age cohort included patients age 60 and greater, and the younger age cohort included patients age less than 60. Demographic and perioperative variables were compared between the two cohorts.

Table 1

Datapoint	Combined	Cohort 1 (age≥60)	Cohort 2 (age<60)	p-value
N	81	55	26	
Mean age	62.80	70.04	47.54	<0.01*
Mean Length of Stay (days)	2.80	3.099	2.168	<0.01*
Male	26	16	10	0.40
Female	55	39	16	0.40
MIS LLIF	70	52	18	<0.01*
MIS TLIF	11	3	8	<0.01*
Number of patients with spondylolisthesis	57	46	11	<0.01*

Table 1: Demographic Comparison between cohort 1 (patients age 60 or older) and cohort 2 (patients age 59 or younger).

Table 2

Discharge Destination	Cohort 1 (age≥60)	Cohort 2 (age<60)	p-value
%Short term rehabilitation or Nursing Home	(14/55)	(0/25)	0.01*
%Home with or without home health services	(41/55)	(25/25)	0.01*

Table 2: Comparison of discharge destinations between cohorts.

Results

Length of stay, percentage of patients with spondylolisthesis, choice of LLIF instead of TLIF, and percentage of patients discharged to a nursing home or short-term rehabilitation was significantly greater in the older age cohort. ($p \leq 0.01^*$) Older patients also received a greater volume of perioperative IV fluids. ($p = 0.05^*$) ASA-PS scores, number of levels fused, postoperative mobility assessment scores, and blood loss were not significantly different between the older age and younger age cohorts.

Conclusion

Older patients had longer length of stay. Discharge to a nursing home and the presence of spondylolisthesis may be factors that explain longer length of stay in older patients. Older patients did receive a greater volume of perioperative IV fluids. It is appropriate to select older patients who are not anemic at baseline for ambulatory MIS lumbar fusion to avoid challenges with fluid resuscitation.