

Introduction

Use of cervical bracing/collar subsequent to anterior cervical spine discectomy and fusion (ACDF) is variable. Outcomes data regarding bracing after ACDF are limited. Here, we study the impact of bracing on short-term outcomes related to safety, quality of care, and direct costs in single-level ACDF.

Methods

Retrospective cohort analyses of all consecutive patients undergoing single-level ACDF with or without bracing from 2013-2017 was undertaken (n=577). Patient demographics and comorbidities were analyzed. Tests of independence (Chi-square, Fisher's exact test, Cochran-Mantel-Haenszel), Mann-Whitney-Wilcoxon tests, and logistic regressions were used to assess differences in length of stay (LOS), discharge disposition (home, assisted rehabilitation facility-ARF, or skilled nursing facility-SNF), quality-adjusted life year (QALY), surgical-site-infection (SSI), direct cost, readmission within 30 days, and ER visits within 30 days.

Results

Amongst the study population, 509 were braced and 68 were not braced. There was a difference in graft type ($P < 0.0001$), where braced patients more commonly had autograft and unbraced more commonly had allograft. There was also differences in ASA grade ($P = 0.010$) - with more ASA 2 in the braced group and more ASA 3 in the unbraced group - and comorbidities ($P = 0.010-0.725$) such as obesity ($P = 0.507$), smoking ($P = 0.102$), chronic obstructive pulmonary disease ($P = 0.062$), hypertension ($P = 0.487$), coronary artery disease ($P = 0.445$), congestive heart failure ($P = 0.209$), and problem list number ($P = 0.644$). LOS was extended for the unbraced group (mean $72.63 + 112.5$ vs. $152.7 + 209.3$ hrs., $P < 0.0001$). There was also a difference in discharge disposition with a 4.05 times increased likelihood of home discharge when braced

Conclusions

Bracing following single-level cervical fixation does not alter short-term post-operative course or reduce the risk for early adverse outcomes in a significant manner. The absence of bracing is associated with increased LOS, but cost analyses show no difference in direct costs between the two treatment approaches. Further evaluation of long-term outcomes, and fusion rates will be necessary prior to definitive recommendations regarding bracing utility following single-level ACDF.

References

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Learning Objectives

Utilization of post-operative bracing after ACDF did not decrease the risks of adverse events or costs, but is associated with decreased LOS.

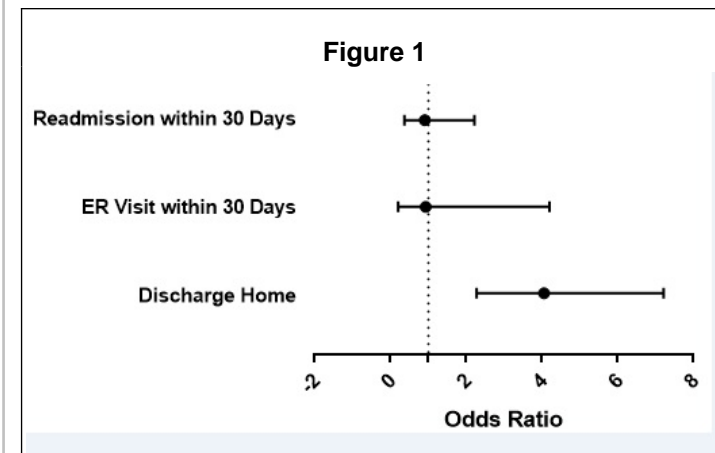


Table 1

Variable	Brace, mean (SD)	No Brace, mean (SD)	P Value
LOS	72.63 (112.5)	152.7 (209.3)	<0.0001
Total Cost	2722.0 (1784.9)	2924.7 (2933.5)	0.7091
QALY	0.0303 (0.0736)	-0.0650 (0.1344)	0.0798