Active Epilepsy Is Associated With Higher Early Emergency Department Utilization and Increased 2-Year Ipsilateral Recurrent Instability After Primary Shoulder Stabilization

Reginald O. Chinweze, MD, LLM[1]; Emanuel R. Morales Guzman[2]; David Dallas-Orr, MD, MBA, MTM[1]; Noah L. Lyndall, BS[2]; Matthew Frederickson, MD[1], Mariano E. Menendez, MD[1]; Ryan D. Freshman, MD[1].

Affiliations:

1. Department of Orthopaedic Surgery, University of California Davis, Sacramento, CA.

2. University of California Davis, School of Medicine, Sacramento, CA.

Corresponding Author:

Reginald O. Chinweze

Email: obichinweze@outlook.com

4860 Y Street

Suite 3800

Sacramento, CA 95817

ABSTRACT

INTRODUCTION

Patients with epilepsy are considered high risk for recurrent shoulder instability, yet comparative outcome data are limited. We evaluated whether active epilepsy is associated with increased early emergency department (ED) utilization and higher long-term ipsilateral recurrent instability after primary shoulder stabilization.

METHODS

Using a national administrative claims database, we identified patients undergoing primary surgical stabilization for shoulder instability and categorized them as active epilepsy versus no epilepsy. Active epilepsy required an epilepsy diagnosis within 10 years plus evidence of active disease within 12 months pre-index (seizure/convulsion-related encounter and/or antiseizure medication claim). Controls had no epilepsy diagnosis codes. Primary outcome was ipsilateral recurrent instability at 2, 5, and 10 years. Secondary outcomes included 90-day all-cause ED utilization and 2-year recurrence stratified by surgical approach (arthroscopic vs open). Cohorts were propensity score matched 1:1 on age, sex, Elixhauser comorbidity index, obesity, tobacco use, and diabetes.

RESULTS

The unadjusted cohort included 1,880 active epilepsy patients and 109,256 controls. After matching, 1,572 pairs were analyzed; baseline index labral tear incidence was similar (18.0% vs 16.8%). Active epilepsy was associated with higher ipsilateral recurrent instability at 2 years (4.33% vs 0.95%; RR 4.53, 95% CI 2.60–7.89), persisting at 5 years (5.98% vs 1.21%; RR 4.95, 95% CI 3.04–8.06) and 10 years (6.17% vs 1.27%; RR 4.85, 95% CI 3.01–7.81). Ninety-day all-cause ED utilization was higher in the epilepsy cohort (16.48% vs 10.75%; RR 1.53, 95% CI 1.28–1.84). Elevated 2-year recurrence persisted after arthroscopic stabilization (4.06% vs 1.09%; RR 3.71) and open stabilization (11.42% vs 5.54%; RR 2.06).

DISCUSSION/CONCLUSION

Active epilepsy is associated with increased early ED utilization and substantially higher long-term ipsilateral recurrent instability after primary shoulder stabilization, supporting enhanced counseling and perioperative pathways emphasizing seizure optimization and early postoperative support.

Table 1: Outcomes after primary shoulder stabilization: Active epilepsy vs no epilepsy (propensity-matched)

Endpoint	Follow-up / Subgroup	Active epilepsy (%)	No epilepsy (%)	Absolute difference (pp)	RR (95% CI)	P value
Ipsilateral recurrent instability	2 years	68/1572 (4.33)	15/1572 (0.95)	+3.38	4.53 (2.60–7.89)	**<0.01**
Ipsilateral recurrent instability	5 years	94/1572 (5.98)	19/1572 (1.21)	+4.77	4.95 (3.04–8.06)	**<0.01**
Ipsilateral recurrent instability	10 years	97/1572 (6.17)	20/1572 (1.27)	+4.90	4.85 (3.01–7.81)	**<0.01**
All-cause ED utilization	90 days	259/1572 (16.48)	169/1572 (10.75)	+5.73	1.53 (1.28–1.84)	**<0.01**
Ipsilateral recurrent instability	2 years (arthroscopic stabilization)	52/1281 (4.06)	14/1281 (1.09)	+2.97	3.71 (2.07–6.67)	**<0.01**
Ipsilateral recurrent instability	2 years (open stabilization)	33/289 (11.42)	16/289 (5.54)	+5.88	2.06 (1.16–3.66)	**<0.05**
Index labral tear incidence *(baseline comparability)*	Index	283/1572 (18.0)	264/1572 (16.8)	+1.2	—	0.40

Notes: Study cohorts were propensity-matched using a 1:1 ratio to control for age, sex, Elixhauser comorbidity index, obesity, tobacco use, and diabetes.