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Active Epilepsy Is Associated with Higher Early Emergency Department Utilization and Long-Term Ipsilateral Recurrent Instability After Primary Shoulder Stabilization

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Abstract:

Patients with epilepsy are considered high risk for recurrent shoulder instability, but comparative, population-level outcomes remain limited. We evaluated whether active epilepsy is associated with increased early emergency department (ED) utilization and higher long-term ipsilateral recurrent instability after primary surgical stabilization. We performed a retrospective cohort study using a national administrative claims database. Patients undergoing primary surgical stabilization for shoulder instability were categorized as active epilepsy versus no epilepsy. Active epilepsy required a history of epilepsy within 10 years plus evidence of active disease within 12 months pre-index (seizure/convulsion 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 arthroscopic versus open stabilization. To reduce confounding, 1:1 propensity score matching was performed on age, sex, Elixhauser comorbidity index, obesity, tobacco use, and diabetes. In the unadjusted cohort, 1,880 active epilepsy patients and 109,256 controls were identified; 1,572 matched pairs were analyzed. Active epilepsy was associated with higher recurrent instability at 2 years (4.33% vs 0.95%; RR 4.53, 95% CI 2.60–7.89; $p < 0.01$), persisting at 5 years (5.98% vs 1.21%; RR 4.95, 95% CI 3.04–8.06; $p < 0.01$) and 10 years (6.17% vs 1.27%; RR 4.85, 95% CI 3.01–7.81; $p < 0.01$). Ninety-day all-cause ED utilization was also higher with epilepsy (16.48% vs 10.75%; RR 1.53, 95% CI 1.28–1.84; $p < 0.01$). Elevated 2-year recurrence persisted after arthroscopic (4.06% vs 1.09%; RR 3.71; $p < 0.01$) and open stabilization (11.42% vs 5.54%; RR 2.06; $p < 0.05$). Active epilepsy was associated with higher early ED utilization and durable recurrence through 10 years, supporting enhanced preoperative counseling using absolute risk estimates and perioperative pathways emphasizing seizure optimization and structured early postoperative support.

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