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“A Comparison of the Safety and Efficacy of Right Internal Jugular Versus Left Internal Jugular Access for Transjugular Intrahepatic Portosystemic Shunt”

Introduction: Portal hypertension is a major consequence of chronic liver disease. Complications include ascites, gastroesophageal varices, and hepatic encephalopathy (HE). A transjugular intrahepatic portosystemic shunt (TIPS) can be used to achieve portal decompression. TIPS is an endovascular shunt placed under radiographic guidance that connects the portal system with the systemic circulation, with the goal of reducing the portal venous pressure gradient. TIPS is performed through transjugular venous access, conventionally through the right internal jugular (RIJ) vein. Left internal jugular (LIJ) venous access has been shown to be a feasible alternative in selected patients; however, there is limited literature comparing RIJ access versus LIJ access as a primary option. This study aims to compare the safety and efficacy of RIJ versus LIJ access for TIPS procedures.

Methods: This is an IRB approved retrospective study of patients undergoing TIPS procedures over the age of 18 at UMCNO. Information was obtained from the electronic medical record of patients who met the study criteria. Patients were grouped into two cohorts by access site, RIJ versus LIJ. To reduce possible selection bias between the two patient populations, 1:1 propensity score matching was performed. MELD-Na, portal vein thrombosis, variceal bleeding, and HE were used to generate a preoperative propensity score. Patients were matched based on propensity scores using a 0.4-SD logit caliper, and an absolute standardized mean difference of ≤ 0.20 was used to ensure covariate balance.

Results: Of the 69 patients included in the study, 57 had TIPS performed via RIJ access and 12 by LIJ access. Technical success was 100% in both groups. Before matching, RIJ access was associated with shorter median procedure duration compared to LIJ access (121.0 vs 165.6 minutes; $P=0.004$) and lower rate of portal vein thrombosis (8.8% vs 41.7%; $P=0.011$). Matching retained 10 pairs, in which no significant differences were found in complications, fluoroscopy time, radiation exposure, pressure-gradients, HE, hospital stay length, or in-hospital mortality between the groups.

Conclusion: This preliminary study showed that LIJ access is a viable option for TIPS creation. Both RIJ and LIJ access groups achieved technical success and patients with similar preoperative characteristics were shown to have similar procedural and clinical outcomes.