



"Nuestros niños, nuestros pacientes, nuestra razón de ser"

TÍTULO: OUTCOMES OF INDIRECT REVASCLARIZATION (EDAS) FOR PEDIATRIC MOYAMOYA DISEASE: A CASE SERIES

INTRODUCTION: Encephalo-duro-arterio-synangiosis (EDAS) is a well-established indirect revascularization technique for pediatric Moyamoya disease (MMD). Long-term studies demonstrate its effectiveness in reducing recurrent ischemic events and achieving favorable functional outcomes, particularly when performed before irreversible cerebral injury. This study analyzes three pediatric cases treated with EDAS at our institution, focusing on clinical and radiological outcomes.

METHODS: Three pediatric patients (two females and one male) with primary or secondary MMD underwent EDAS between 2020 and 2025. Collected data included age, MMD type, history of ischemic stroke, epileptic status, surgical approach, and postoperative clinical and imaging findings. Cases are presented chronologically according to the first EDAS procedure.

RESULTS: Case 1: A 9-year-old boy with Moyamoya type II underwent left EDAS in September 2020 and right EDAS in March 2021. Preoperatively, he had transient ischemic attacks, multiple ischemic lesions involving perforating arteries, and epilepsy. After bilateral EDAS, no new ischemic strokes occurred. Epilepsy remained controlled, and postoperative MRI demonstrated effective left-sided revascularization. **Case 2:** A 14-year-old girl with secondary MMD related to sickle cell disease underwent left EDAS in May 2023. She had experienced a major ischemic stroke at age 11. At two-year follow-up, she remained neurologically stable without recurrent TIA or stroke. Postoperative MRA showed favorable revascularization of the left hemisphere. **Case 3:** A 9-year-old girl with sickle cell-associated MMD underwent left EDAS in May 2025. She had prior ischemic strokes at ages 2 and 5, resulting in hemiparesis and poorly controlled focal epilepsy. Postoperatively, seizure frequency decreased after optimization of antiepileptic therapy, with no further ischemic events.

CONCLUSION: EDAS effectively stabilized pediatric patients with primary and secondary MMD, preventing new ischemic strokes and improving neurological outcomes. These results support EDAS as a safe and reliable revascularization option in the pediatric population, including patients with sickle cell disease.