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(Dox)-controlled transgenic model to induce SMO or Gli2 expression in aggressive clinicopathological features. Thus, we assessed whether activation of SHH pathway proteins, such as SHH, GLI1, and GLI2, are aberrantly expressed in high-grade gliomas. One of the most effective approaches to develop models capable of accurately representing the complexity of tumors as they grow without interactions with and from the surrounding tissue is to establish patient-derived xenograft (PDX) models. These models are curative with surgical resection, a subset of them has propensity for tumor recurrence, progression, and metastasis. Moreover, surgery can be technically difficult due to their deep locations and high vascularity. In-depth mechanisms of their biology remain poorly understood. Separately, the process of angiogenesis has been implicated in several cancers. To date, there has been no previous study focused on CPP and angio-

ABSTRACT CITATION ID: NOAE064.779

STEM-08. ANGIOGENESIS IN PEDIATRIC CHOROID PLEXUS PAPILLOMAS

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BACKGROUND: Choroid plexus papillomas (CPP) are rare brain tumors that tend to occur in very young children. Although most of them are curative with surgical resection, a subset of them has propensity for tumor recurrence, progression, and metastasis. Moreover, surgery can be technically difficult due to their deep locations and high vascularity. In-depth mechanisms of their biology remain poorly understood. Separately, the process of angiogenesis has been implicated in several cancers. To date, there has been no previous study focused on CPP and angio-
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This study aims to explore and ascertain the existence of angiogenesis in CPP. METHODS: This is a study approved by the hospital ethics review board. Cerebrospinal fluid (CSF) and CPP tumor samples are collected at the time of surgery. A multiplex immunoassay panel is used to measure cytokine concentrations in the CSF samples. Identified cytokines of interest are input into online platforms to assess for protein-protein interaction pathways. Concurrently, patient-derived primary cell cultures and their supernatants are derived from CPP samples. A targeted proteome blot array and HUVEC tubule formation assays are used to validate clinical and in silico findings. RESULT: CSF profiling showed higher expression of MCP-1, MMP-1, IL-2, TNF-α, TRAIL and CD40-L in CPP patient samples versus non-tumor controls. Next, in silico assessment via STRING and BioGRID platforms report that these cytokines are associated with endothelial cell regulation. This is clinically relevant as we are aware that the endothelium has important functions in the regulation of angiogenesis. Using an angiogenesis-focused approach, CPP-derived cell lines and supernatants showed congruently higher expression of MCP-1, MMP-1 and TNF-α. Next, tubule formation was observed in HUVEC cultures where conditioned CPP cell culture media was added. CONCLUSIONS: Based on our preliminary findings, this proof-of-concept study demonstrates potential to explore the role of angiogenesis in CPP for better disease understanding.