Decannulation

Küchler et al., retrospectively reviewed 87 spontaneous subarachnoid hemorrhage (sSAH) patients with World Federation of Neurosurgical Societies grading III-IV, who received tracheostomy. Decannulation events and the time from tracheostomy to decannulation were recorded in a 200-days follow-up. Variables analyzed were: age, sex, WFNS grade, Fisher grade, the presence of intracerebral or intraventricular hematoma, acute hydrocephalus, aneurysm location, aneurysm obliteration (surgical vs. endovascular), treatment related complications, decompressive craniectomy, symptomatic cerebral vasospasm, vasospasm-related infarction and timing of tracheostomy. Further risk factors analyzed were preexisting chronic lung disease and pneumonia. Functional outcome was assessed by the modified Rankin Scale (mRS).

The rate of successful decannulation was 84% after a median of 47 days. A higher WFNS grade and pneumonia were associated with both a prolonged time to decannulation (TTD) and decannulation failure (DF). Older age (> 60 years) and necessity for decompressive craniectomy were only associated with prolonged TTD. Outcome analysis revealed that patients with DF show a significantly ($p < 0.01$) higher rate of unfavorable outcome (mRS 3-6).

Successful decannulation is possible in the majority of sSAH patients and particularly, in all patients with WFNS grade III. WFNS grading, age, the necessity for decompressive craniectomy and pneumonia are significantly associated with the time to decannulation (TTD). World Federation of Neurosurgical Societies grading and pneumonia are significantly associated with decannulation failure (DF). The mean cannulation time of sSAH patients is shorter in relation to stroke patients [1)].

Pediatric vocal cord paresis (VCP) has a variety of etiologies, including congenital neurologic disease. Arnold-Chiari Malformation (ACM) is one such disease with known VCP association. However, the natural history, need for tracheostomy, and rate of decannulation in this patient population is not well characterized.

OBJECTIVE: To provide prognostic information on infants with ACM and VCP.

METHODS: A retrospective chart review was conducted of patients with both ACM and VCP at a single institution. Clinical outcomes and disease progression were determined using flexible laryngoscopy, serial clinical exams, and operative reports from otolaryngology and neurosurgery services.

RESULTS: Eighteen patients were included in this study, four with ACM Type I and 14 with ACM Type II. These groups were analyzed separately. For ACM I, the average age at diagnosis was 25 months and two (50%) required tracheostomy. Three subjects (75%) achieved VCP resolution, with two doing so after neurosurgical decompression. For ACM II, the average age at diagnosis was eight months and 12 patients (86%) underwent tracheostomy. Four subjects with tracheostomy (33%) achieved decannulation, with three of these demonstrating VCP resolution. In total, six ACM II patients had complete and one had partial VCP resolution, all of whom underwent decompression. Two patients initially had normal endoscopic exams despite stridor and VCP was only noted on serial exams.

DISCUSSION: This study represents the largest series of pediatric patients with VCP and ACM. The majority needed decompression (80%) and tracheotomy (78%). Tracheostomy decannulation typically occurred only after decompression and resolution of VCP. No children diagnosed at age <1 month were decannulated. Early decompression was associated with successful avoidance of tracheostomy

in majority of Chiari I but not Chiari II patients. Serial endoscopies were required to confirm VCP in some patients. This information could potentially aid in management and counseling parents of children with VCP and CM [2].

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2)
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