

(33.3%), two fusiform aneurysms (22.2%), and four pseudoaneurysms (44.4%). We performed the type A strategy in five patients (55.6%), type B in one (11.1%), and type D in three (33.3%).

During a mean period of 70 months, a good clinical outcome (mRS score 0-2) was observed in all patients and a follow-up angiogram performed for all patients demonstrated complete aneurysm obliteration in all patients and good bypass patency in eight of nine patients (88.8%).

Conclusions: The treatment of complex aneurysms remains a challenge with conventional surgical or endovascular treatments. IC-IC bypass surgery is a useful technique for complex aneurysms and shows favorable clinical outcomes.

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Aneurysmal subarachnoid hemorrhage with fulminant course and fatal outcome: incidence and risk factors

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Oral e-Poster Presentations - Booth 1: Vascular 2, October 15, 2024, 12:40 PM - 2:10 PM

Background: Aneurysmal subarachnoid hemorrhage (aSAH) is a stroke subtype characterized with high morbidity and mortality. In some severe cases, fulminant onset of SAH predestinates the fatal disease outcome despite maximal treatment. In this retrospective study, we analyzed the incidence and risk factors for aSAH with fulminant and fatal course (FFC).

Methods: The study is based on consecutive aSAH cases treated between 01/2003 and 06/2016 in our clinic. Baseline demographic, clinical and radiographic characteristics were recorded. Patients with initial WFNS Grade V, clinical signs of brainstem herniation and in-hospital mortality were regarded as cases with FFC. Univariate and multivariate analyses were performed.

Results: FFC with median post-aSAH survival of 3 days (IQR: 2-6 days) was observed in 59 of 995 (5.9%) aSAH patients included in the final analysis. There was no change in the prevalence of aSAH with FFC over the observational period. In the multivariate analysis, the location of ruptured aneurysm at the basilar artery (aOR=3.02, 95% CI=1.51-6.04, p=0.002) and sack size >7 mm (aOR=3.53, 95% CI=1.93-6.44, p<0.0001) were independently associated with the risk of FFC. There was a borderline significance for higher probability of FFC in older aSAH individuals (>55 years: aOR=1.74, 95% CI=0.99-3.07, p=0.054). Pre-existing comorbidities and regular medication did not show significant associations with the risk of FFC.

Conclusions: FFC is rare in aSAH patients who survive until hospital admission. Our data underline the importance of preventive treatment of unruptured intracranial aneurysms with large size and location at the basilar artery.

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Intracranial aneurysms hemorrhage risk assessment using scales dedicated to unruptured aneurysms – retrospective study

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Oral e-Poster Presentations - Booth 1: Vascular 2, October 15, 2024, 12:40 PM - 2:10 PM

Background: The decision to treat unruptured intracranial aneurysms (UIAs) is challenging and based on multiple factors. However, there are many cases where decisions should be taken individually by a consulting physician. Scores and clinical tools, like PHASES, UIATS, or ELAPSS scores, were created, which could be implemented in everyday clinical practice. Despite their external validation, there are controversies around their clinical application.

Methods: A retrospective analysis of the adult patients charts diagnosed and treated for aneurysmal subarachnoid hemorrhage in the Department of Neurosurgery and Neurooncology in Copernicus Memorial Hospital in Łódź from January 2022 to December 2023 was performed. Multiple factors were evaluated

according to PHASES, UIATS, and ELAPSS. Ruptured aneurysms were analyzed using aforementioned scores, as there would be unruptured ones.

Results: The mean age of all patients (n=146) was 66.9 ± 11.3 years old. One hundred three patients were in the ruptured group, and 43 had unruptured aneurysms. Based on the UIATS, 55 ruptured cases (53%) were subjected to conservative treatment. According to PHASES, the system indicated lower rupture risk in the bleeding group than in the unruptured (1.5% ± 2.6, 2.1% ± 2.9, p=0.001, respectively). Similar results were observed in the ELAPSS (11.7 points ± 7.1, 13.6 points ± 6.4, p=0.065, respectively). Noteworthy, ruptured aneurysms were significantly smaller (5.8 mm ± 3.4) in contrast to unruptured ones (6.5 mm ± 3.5) (p=0.05). A cut point for decision in PHASES was at 1.7% of a 5-year risk of rupture and 28.1% for a 5-year risk of aneurysm growth in ELAPSS. Relatively, a low true predictive potential was revealed (AUC=0.327 and AUC=0.403, respectively), indicating a high proportion of false negative results. **Conclusions:** Based on prediction and recommendation, according to UIATS, PHASES, and ELAPSS a large amount of bleeding patients would not be treated in the unruptured scenario. The study revealed that presented scores have low predictive potential. Other systems and factors should be evaluated for more accurate clinical application for treatment recommendations of unruptured aneurysms.

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Reducing Soft Tissue Complications in CAD Cranioplasty: The Role of Implant Curvature reduction in a Multidisciplinary Approach

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Oral e-Poster Presentations - Booth 4: Trauma and Critical Care 2, Trauma and Critical Care 3, Trauma and Critical Care 4, October 15, 2024, 12:40 PM - 2:10 PM

Background: Cranioplasty, particularly with alloplastic materials, is recognized for its inherent risks despite the procedure's superficial simplicity. This study aims to explore the complexities of cranioplasty, focusing on the reduction of curvature in CAD cranioplasties as a strategy to mitigate soft tissue-associated complications, especially in patients with critical soft tissue conditions.

Methods: A cohort of 103 patients who underwent CAD cranioplasty between December 2020 and November 2023 was analyzed. Patients were divided into two groups based on the curvature of their cranioplasty: normal curvature (71 patients) and reduced curvature (32 patients). The primary outcome was soft tissue-associated complications, while secondary outcomes included other pre-operative, intraoperative, and postoperative parameters.

Results: The normal curvature group comprised 71 patients (60% male, 40% female) with an average age of 39.74 years, and the reduced curvature group included 32 patients (61% male, 39% female) with an average age of 48.96 years. The reduced curvature group, characterized by a higher complexity score average of 1.46 and an interquartile range (IQR) of 1 compared to the normal curvature group with a complexity score of 1 (IQR = 0), showed a significant improvement in managing soft tissue complications despite the complexity of the cases. Notably, all six explantations due to soft tissue complications occurred in the reduced curvature group, underscoring the critical nature of these cases. However, the strategic reduction of curvature has proven to be an effective measure in these complex scenarios, highlighting its value in enhancing post-operative outcomes.

Conclusions: The study findings affirm that the strategic reduction of curvature in CAD cranioplasties is a viable approach to reducing soft tissue-associated complications in patients with critical soft tissue conditions. This method is particularly beneficial in complex cases, as indicated by the higher complexity scores and the specific challenges faced by the reduced curvature group. The significance of curvature adjustment in CAD cranioplasty underscores the need for careful preoperative planning and a tailored approach to each patient's unique anatomical and clinical circumstances. Our analysis suggests that despite the complexities inherent in cranioplasty procedures, curvature reduction offers a promising avenue for complication mitigation, advocating for its consideration in the surgical planning process.

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