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BİLDİRİ ÖZETLERİ

Johnson&Johnson MedTech

EP-1 12 YAŞ ATRİOVENÖZ FİSTÜLE BAĞLI BAZİLER ARTER TROMBEKTOMİSİ VAKA SUNUMU

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Özet:

GİRİŞ: Baziler Arter (BA), her iki vertebral arterin (VA) pons düzeyinde birleşmesiyle oluşur. Baziler arter oklüzyou (BAO) tam insidansı bilinmese de tüm iskemik inmelerin %1'ini oluşturduğu tahmin edilmektedir. BAO; serebellum, talamus, beyin sapı ve oksipital bölgede enfarktüs ile sonuçlanır. BAO etyolojisinde en sık neden ateroskleroz ve kardiyoemboliktir. Klinik prezentasyon birçok farklılık göstermekle birlikte; bilinç durumunda ani kötüleşme, koma, hemiparezi/hemipleji, disfaji, afazi, kranial sinir tutulumları, baş dönmesi, bulantı-kusma ve nöbet görülebilmektedir. BAO olan hastaların %70-80'ni ölüm veya sakatlıkla sonuçlanır. Çocukluk çağı inmeleri ise erişkinlere göre nadir görülmektedir. Literatürlerde çocukluk çağı inme insidansı oldukça değişkenlik göstermektedir. Çocuklarda inme görülme sıklığının yılda 100.000de 2,5-13 arasında değiştiği tahmin edilmektedir. Nadir olmasının yanı sıra aşina olunmaması; teşhisin gecikmesine veya yanlış teşhise neden olmaktadır. Vakamızda çocukluk çağında nadir görülen AVF'ye sekonder BAO nedeniyle trombektomi yapılan pediatrik hasta sunumudur.

GELİŞME VE VAKA SUNUMU: 21.07.2025 tarihinde saat:15 'de 12 yaş erkek hasta çift görme, bulantı-kusma, bilinç bulanıklığı ile Mardin Kzılıtepe Devlet Hastanesi aciline başvurmuş. Hastanın nörolojik muayenesind: bilinç somnole kısmı koopere kısmı oryante dizartrik konuşma mevcut gözler konjuge aşağı deviye IR ve KR bilateral pozitif (multiple kranial sinir paralizi mevcut) santral fasial paralizisi ve ense sertliği yok tüm ekstremiteler ağrılı uyarana çekme yanıtlıtaban deri refleksi bilateral ekstensör serebellar muayene bilinç durmundan değerlendirilemedi. Hastanın ateş nabız tansiyon gibi vitaller normal. Hastaya acilde çekilen kranıal MRG da bilateral ponsta akut enfarkt ile uyumlu difüzyon kısıtlılığı izlendi. Beyin karotis kontratlı BT anjıoda baziler arter orta segmentte oklüzyon saptandı. Hasta saat:23'de Dicle Üniversitesi Nöroloji inme merkezine sevk edildi. 11.saatinde trombektomi yapıldı ve first pass ile TICI:3 rekanalizasyon sağlandı. DSA görüntülerinde sağ vertebral arter ile sigmoid ven arasında fistül izlendi. Hasta 24.saatinde mRS:1 ile takip edildi. 1 hafta sonra mRS:0 olarak poliklinik kontrolüne geldi. AVF tedavisi elektif olarak planlandı.

SONUÇ: Pediatrik inmelerin tedavisinde son on yılda önemli gelişmeler kaydedilmiştir. Pediatrik inmelerin altında yatan mekanizmalar hakkındaki bilgiler gelişmektedir ve gelişmeler inme tedavilerine ciddi destek sağlamaktadır. SaveChılds çalışmasında mekanik trombektominin çocuklardaki rekanalizasyon ve yan etki oranları erişkinlerdeki oranlara benzer olarak görülmüştür. Aynı çalışmanın sekonder analizinde BT perfüzyon veya MR difüzyon-perfüzyon kullanılarak çocuklardaki 6-24 saat aralığında yapılan mekanik trombektomi vakaları güvenli bulunmuştur. Çocuklarda uygun vakalarda 0-6 ve 6-24 saat aralığında gelen hastalarda mekanik trombektomi yapılmaktadır ve bu konuda daha fazla sayıda çalışmaya ihtiyaç vardır.

EP-2 FLOW DİVERTER USE İN THE TREATMENT OF HİGH-FLOW INDİRECT CAROTİD-CAVERNOUS FİSTULA: A CASE REPORT

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Özet:

Abstract:

Carotid-cavernous fistulas (CCFs) are rare vascular pathologies that require different treatment approaches based on their clinical findings and hemodynamic characteristics. A 57-year-old male patient presented with redness, edema, and ptosis in his left eye persisting for three months. Imaging revealed dilation of the left superior ophthalmic vein, extraocular muscles, and cavernous sinus. Cerebral angiography detected a high-flow indirect (Type B) CCF originating from the cavernous segments of both internal carotid arteries. Coil embolization was performed via the right inferior petrosal sinus to treat the right half of the cavernous sinus, but transvenous access to the left side could not be achieved. Following coil embolization of the right side, flow in the right ICA diminished; however, persistent direct filling of the left superior ophthalmic vein via the left ICA exacerbated orbital congestion. Consequently, two telescoping flow diverter stents were deployed in the cavernous segment of the left ICA. Venous filling subsequently decreased, and orbital swelling partially improved. At the two-month follow-up, all ocular symptoms had completely resolved. This case demonstrates that flow diverters can be an effective treatment option for high-flow indirect CCFs, particularly when conventional transvenous approaches are insufficient.

EP-3 STAGED PALLİATİVE GLUE EMBOLİZATİON İN A LARGE UNRUPTURED SYMPTOMATİC BRAIN AVM: IS IT BENEFİCİAL?

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Özet:

Background

Even without rupture, brain arteriovenous malformations (AVMs) can cause disabling seizures; palliative embolization offers meaningful symptom relief when cure is not possible. AVMs are uncommon vascular anomalies associated with significant neurological morbidity. While rupture is the most feared complication, unruptured AVMs are not always silent. A subset of patients exhibit progressive symptoms, notably seizures, which may significantly compromise daily functioning and overall quality of life . The management of such cases is especially challenging when the AVM is complex, diffuse, and not amenable to surgical resection or radiosurgery. In these situations, palliative embolization has emerged as a potential therapeutic strategy. Rather than aiming for complete nidus eradication, the goal is to selectively occlude symptomatic feeders, reduce cortical irritation, and achieve clinical improvement. Here we report a case of an unruptured but symptomatic AVM, managed with staged palliative embolization across 14 years of follow-up.

Case Timeline & Description

· 2011 – Initial diagnosis: A 42-year-old male presented with focal seizures of the left hemibody. He was diagnosed with an unruptured right frontoparietal AVM. Antiseizure therapy with valproate (2×500 mg) and clobazam (10 mg nightly) was initiated. No vascular risk factors such as hypertension or diabetes were present.

· 2011–2017 – Stable phase: Seizures remained infrequent (1–2 episodes per year) with mild postictal weakness resolving spontaneously. The patient was fully independent in activities of daily living.

· 2018 – First angiography: Digital subtraction angiography (DSA) revealed a right frontoparietal gyral AVM supplied by the callosomarginal branch of the ACA and bilateral middle meningeal arteries, with venous drainage into the vein of Trolard and superior sagittal sinus. Multiple venous ectasias were observed. Conservative treatment was maintained.

· 2019–2020 – Seizure progression: Seizure frequency escalated to monthly episodes, with occasional clusters. In February 2020, repeat angiography showed similar angioarchitecture without major progression. Medical management alone was insufficient.

· 2021–2023 – Escalation of symptoms: Seizure frequency further increased to 1–2 per month, sometimes in clusters. Episodes were prolonged, followed by disabling postictal weakness. Functional decline became evident, affecting occupational performance.

· November 2024 – Third angiography: Imaging demonstrated a mixed-type gyral AVM with direct feeders from the callosomarginal ACA and indirect feeders from MCA and PCA branches. Venous drainage involved the vein of Trolard, anterior cerebral vein to the superior petrosal sinus, and basal vein of Rosenthal to the vein of Galen and straight sinus. Cortical venous reflux and angiomatous changes were noted. Given the complexity and eloquent location, curative therapy was deemed unsuitable.

· December 2024 – First palliative embolization: Under general anesthesia, a Mach-1 7F guiding catheter and Sofia 5F intermediate catheter were positioned in the right ICA. Microcatheters (Headway Duo 17, Rebar 18) accessed the nidus through callosomarginal and pericallosal feeders. Glue embolization with n-butyl cyanoacrylate (NBCA) mixed with Lipiodol (50%) was performed. Post-procedure, angiography confirmed partial nidus occlusion with reduced shunt flow. Seizure frequency decreased in the following weeks.

· May 2025 – Follow-up angiography: Repeat angiography showed persistent mixed-type AVM with feeders from ACA, MCA, and PCA. Draining veins included the vein of Trolard, anterior cerebral vein to superior petrosal sinus and sigmoid sinus, and basal vein of Rosenthal to the vein of Galen and straight sinus. Previously embolized pericallosal and callosomarginal feeders contained glue casts.

· May 2025 – Second palliative embolization: A Neuron MAX 6F guiding catheter was navigated to the right ICA (petrous segment), with a Sofia 5F and vertebral catheter advanced to the cavernous ICA. Multiple staged embolizations were performed: 1) Echelon-10 microcatheter into callosomarginal feeder, NBCA 38% injected with reduced nidus flow. 2) Magic MP microcatheter into callosomarginal feeder, NBCA 38% with complete feeder occlusion. 3) Magic MP microcatheter repeated, NBCA 42% with no residual flow. 4) Magic 1.5F microcatheter into lenticulostriate feeder, NBCA 30% with full occlusion. Final angiography confirmed significant reduction in nidus perfusion and elimination of targeted feeders.

Results

Across two stages of embolization, selective feeder occlusion and reduction of nidus perfusion were successfully achieved. No intra-procedural complications such as hemorrhage, vessel perforation, or ischemia occurred. The patient remained neurologically intact. At early follow-up, seizure frequency declined markedly compared to baseline. Postictal weakness was shorter and less disabling. The patient reported improved independence in daily activities and reduced reliance on rescue medication. These findings highlight the clinical benefit of a symptom-oriented approach despite persistence of the AVM nidus.

Discussion

This case demonstrates that unruptured AVMs are not always benign. Seizure progression over more than a decade underscored the epileptogenic potential of this lesion, especially with cortical venous reflux. Despite antiseizure medication, the patient experienced progressive disability. In such scenarios, the treatment goal shifts away from curative intent toward seizure reduction and quality-of-life improvement.

Staged palliative embolization provided a feasible strategy. By targeting feeders most involved in nidus perfusion and epileptogenesis, flow reduction was achieved while minimizing risk. Technical refinements, such as the use of dedicated microcatheters and variable glue concentrations, enabled safe embolization of multiple feeders. Clinical outcome correlated with angiographic improvement, affirming that partial embolization can yield meaningful symptomatic relief.

The case supports an evolving paradigm: AVM management should not be restricted to an all-or-none philosophy. For unruptured but symptomatic lesions, endovascular treatment can be justified when the primary goal is patient-centered—reducing seizure burden, preventing further decline, and enhancing functional capacity. This aligns with recent literature advocating individualized, symptom-oriented AVM therapy.

Conclusion

Unruptured AVMs may cause disabling seizures that justify intervention even in the absence of hemorrhage. This case illustrates how staged palliative embolization can safely reduce seizure burden, improve neurological stability, and restore quality of life. Beyond angiographic success, the true value lies in patient-centered outcomes. Palliative embolization should therefore be recognized as a meaningful therapeutic strategy for selected patients with complex, symptomatic AVMs not amenable to curative treatment.

EP-4 INFARCT GROWTH RATIO AS A PREDICTOR OF FUTILE RECANALIZATION

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Özet:

Background:
The no-reflow phenomenon is defined as the absence of adequate microvascular reperfusion and clinical improvement despite technically successful recanalization. Experimental studies suggest that distal microembolization, microthrombosis, endothelial damage, and inflammatory responses play a role. In humans, the clinical significance is still debated.

Objective:
The main aim of this study was to investigate if infarct growth ratio (IGR) between 24-hour and 1-week MRI can be used as a marker of futile recanalization after thrombectomy. By using post-procedure MRI instead of pre-procedure imaging, we also aimed to indirectly test the presence of no-reflow in a clinical setting.

Methods:
We included patients with middle cerebral artery (MCA M1) stroke and successful reperfusion (TICI ≥2c). Patients treated between 2021 and 2025 were retrospectively screened, and 20 cases fulfilling the inclusion criteria were identified. Infarct volume was measured at 24h and 5–7 days on diffusion MRI. IGR was calculated as (2nd MRI volume – 1st MRI volume)/1st MRI volume. Futile recanalization was defined as modified rankin scale at day 90 (mRS90) ≥4.

Results:
Futile recanalization was seen in 11 patients (55%). Median IGR was –0.13 in non-futile and 0.61 in futile patients and there was a significant difference between the two groups (p=0.017). IGR >20% was strongly related with futile outcome (OR=15.7, CI%95=1,75-141,4, p=0.022). ROC analysis showed good prediction with AUC=0.82. The best cut-off was 26%, with 82% sensitivity and 78% specificity. Glucose was higher in futile group but not significant (median 153 vs 108 mg/dL, p=0.058). Diabetes was seen only in futile patients. Other factors like hypertension, hyperlipidemia and atrial fibrillation were not significant. Absence of first-pass effect was strongly associated with futile recanalization (OR=13,p=0.017). Hemorrhagic transformation was more common in futile patients, but the association was not statistically significant.

Conclusion:
IGR is a useful marker for futile recanalization after thrombectomy. An increase more than 26% in the first week strongly predicts poor outcome. High glucose and diabetes may also play a role. Opening the artery alone is not enough; microvascular protection is important.

EP-5 MACHİNE LEARNİNG-BASED SURGİCAL PLANNİNG FOR NEUROSURGERY:AI APPROACHES TO CRANİUM

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Özet:

Purpose:The aim of this study was to define safe intracranial surgical approaches for brain tumors by integrating functional anatomical structures and pathological areas into artificial intelligence systems. We sought to develop an algorithm that identifies optimal cortico-tumoral pathways, minimizing damage to eloquent brain regions while maximizing tumor resection.

Methods:Preoperative magnetic resonance imaging (MRI) data of patients with deeply located brain tumors were retrospectively analyzed. Anatomical structures such as arteries, veins, and neural tracts were segmented and labeled. Tumor tissue was defined as the target. A two-stage approach was used: a new heuristic algorithm was applied to identify optimal linear entry points and surgical paths, and a Q-learning reinforcement learning algorithm was executed to generate nonlinear cortico-tumoral pathways, balancing rewards (tumor removal) and penalties (injury to critical structures).

Findings:The heuristic-based algorithm extracted thousands of potential linear entry points, from which the most suitable 20 were selected. These paths were subsequently evaluated using Q-learning, which identified nonlinear surgical trajectories that avoided critical neurovascular structures. In a case study with axial T1-weighted MRI (512 × 512 × 144 voxels), the best nonlinear path was identified at the 16 × 16 cell dimension, processed through approximately 500,000 learning epochs in about 70 minutes. The system successfully generated DICOM compatible outputs, allowing potential integration into neuronavigation software.

Results: This study demonstrates that reinforcement learning and heuristic-based algorithms can effectively determine both linear and nonlinear cranial access routes. Artificial intelligence

offers promising contributions to neurosurgical planning by improving trajectory accuracy, reducing surgical risks, and enhancing minimally invasive approaches. Future integration with intraoperative neuronavigation and augmented reality systems may further optimize surgical outcomes.

EP-6 KAROTİS ARTER DARLIĞINDA İŞLEME ALINMA ÖNGÖRÜSÜNDE DOPPLER ULTRASONOGRAFİ VE BT ANJİYOGRAFİNİN TANISAL PERFORMANSI

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Özet:

Giriş ve Amaç: Karotis arter darlığı (KAD) iskemik inmenin en önemli nedenlerinden biridir ve tedavi planlamasında doğru görüntüleme yönteminin seçimi kritik rol oynamaktadır. Dijital subtraksiyon anjiyografi (DSA) halen altın standart yöntem olmakla birlikte invaziv yapısı nedeniyle tüm hastalara uygulanması mümkün değildir. Bu nedenle Doppler ultrasonografi (DUS) ve bilgisayarlı tomografi anjiyografi (BTA) gibi noninvaziv tetkikler klinikte sıkça kullanılmaktadır. Bu tetkiklerin güvenilirliği, özellikle hangi hastaların gerçekten işleme (stent veya endarterektomi) alınacağını öngörmedeki duyarlılıkları açısından değerlendirilir. Çalışmamızda, DUS ve BTA'nın klinik doğruluklarını karşılaştırmayı amaçladık.

Materyal Metod: Ankara Bilkent Şehir Hastanesi'nde 2022–2025 yılları arasında KAD nedeniyle tetkik edilen ve uluslararası inme ölçeklerine uygun olarak anjiyografiye alınan toplam 273 hasta retrospektif olarak incelendi. Hastaların DUS ve BTA tetkikleri incelendi. Demografik veriler, risk faktörleri, anjiyografiye yönlendirilirken darlık tarafı (sağ veya sol), asemptomatik/semptomatik darlık türü, darlık oranları (orta %50-69 ve ciddi %70-99) ve anjiyografi sonrası işlem yapılma oranları her iki grupta ayrı ayrı kaydedildi. Tanısal doğruluk göstergesi olarak, her bir tetkik sonucunda anjiyografiye gönderilen hastalardan kaçına KAD'a yönelik endovasküler işlem veya endarterektomi yapıldığı değerlendirildi. Tanımlayıcı ve karşılaştırmalı istatistik analizleri kullanıldı.

Bulgular: Hastaların 193'ünde DUS, 207'sinde BTA uygulanmıştır. DUS grubunda ortalama yaş 67,0±8,6 yıl, BTA grubunda ise 65,6±8,9 yıldı. Erkek cinsiyet baskındı (DUS: %66,3; BTA: %68,6). Vasküler risk faktörleri her iki grupta da yüksek oranda saptanmış olup, DUS grubunda %95,9 iken BTA grubunda ise %94,7 idi. Her iki grup arasında demografik veriler, risk faktörleri, darlık tarafı ve asemptomatik/semptomatik darlık türü açısından anlamlı farklılık saptanmadı. DUS grubunda 193 hastanın 127'si (%65,8), BTA grubunda ise 207 hastanın 133'ü (%64,3) işleme alınmış olup, yöntemler arasında işleme alınma oranları açısından istatistiksel olarak anlamlı farklılık saptanmadı (p>0,05). Ayrıca darlık oranı orta veya ciddi (p:0.46), semptomatik/asemptomatik darlık türü (p:0.15) hasta gruplarında da, DUS veya BTA ile işleme alınma oranları arasında anlamlı fark bulunmamıştır.

Sonuç: Çalışmamızda, DUS ve BTA'nın klinik güvenilirliklerinin benzer düzeyde olduğu gösterilmiştir. DUS'un düşük maliyeti, yaygın erişilebilirliği ve özellikle böbrek fonksiyon bozukluğu olan hastalarda kontrast maddeye gerek duyulmaksızın güvenle uygulanabilmesi, BTA'ya göre önemli avantaj sağlamaktadır. Bu özellikleriyle DUS, yalnızca taramada değil, aynı zamanda tek başına karar sürecinde de güvenilir bir yöntem olarak kullanılabileceğini göstermektedir.

EP-7 ESTABLİSHMENT AND EARLY OUTCOMES OF A COMPREHENSİVE STROKE CENTER İN NİĞDE, TURKEY

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Özet:

Stroke is a leading cause of disability and mortality worldwide, and access to 24/7 endovascular therapy remains limited in many regions. This study aimed to present the establishment process and early clinical outcomes of a newly founded comprehensive stroke center in Niğde, a medium-sized Anatolian city.

Method

A retrospective analysis was conducted between March 2024 and August 2025. All patients undergoing endovascular procedures at the Niğde Stroke Center were included. Demographic features, intervention types, and outcomes were collected. The main endpoints were successful reperfusion defined as thrombolysis in cerebral infarction (TICI) 2b/3 and functional independence at 90 days (modified Rankin Scale [mRS] 0–2).

Findings

During the study period, a total of 351 endovascular procedures were performed. The median age of patients was 73 (Min-Max: 24 - 93) years, and 54% were male. Hypertension (68%), diabetes mellitus (32%), and atrial fibrillation (24%) were the most common comorbidities. Mechanical thrombectomy constituted the majority (n=129), with a successful reperfusion rate of 91%. At 90 days, 55% of patients achieved functional independence (mRS 0–2). Angioplasty and stenting were performed in 79 cases, including carotid, vertebral, subclavian, and intracranial interventions. Advanced thrombectomy techniques such as Y-stent, Solumbra, and SNAKE were applied routinely in complex cases. Complication rates and overall success were comparable to international standards.

Results

The Niğde Stroke Center successfully demonstrated that comprehensive, high-volume stroke care can be achieved in a medium-sized city with appropriate infrastructure and organizational planning. The model proved feasible and sustainable, offering a replicable framework for similar developing regions.

EP-8 AKUT İSKEMİK İNMEDE TROMBEKTOMİ UYGULANAN HASTALARDA İNTRAKRANİYAL DAMAR STENOZLARININ ANATOMİK DAĞILIMI

FATMA HEDİYE ERZURUMLU, ÇAĞHAN TÖNGE,

ANKARA ETLİK ŞEHİR HASTANESİ

Özet:

Amaç

Bu çalışmada, mekanik trombektomi uygulanan akut iskemik inme hastalarında intrakraniyal damar stenozlarının anatomik dağılımı incelendi.

Materyal ve Metot

Ocak 2022 – Aralık 2024 tarihleri arasında kliniğimizde mekanik trombektomi uygulanan 87 hasta retrospektif olarak değerlendirildi. Hastaların demografik bilgileri, stenoz bölgeleri ve klinik sonuçları kaydedildi.

Bulgular

- En sık stenoz bölgesi orta serebral arter (MCA) idi (62 hasta, %71,3).
- İnternal karotis arter (ICA) stenozu 16 hastada (%18,4) saptandı.
- Vertebrobaziler sistem stenozu 2 hastada (%2,3) izlendi.
- Diğer nadir lokalizasyonlarda 3 hasta (%3,4) vardı.
- Stenoz yeri belirtilmeyen olgu sayısı 4 (%4,6) idi.

Sonuç

Akut iskemik inme nedeniyle trombektomi uygulanan olguların büyük kısmında stenoz MCA'da yer almaktadır. ICA ve vertebrobaziler sistem stenozları daha düşük oranda görülmekle birlikte, klinik yaklaşım ve prognoz üzerinde belirleyici rol oynamaktadır. İntrakraniyal damar segmentlerinin anatomik özellikleri, girişimsel tedavi seçimini ve klinik sonuçları doğrudan etkilemektedir.

EP-9 SEREBRAL AVM TEDAVİSİNDE HİBRİT YAKLAŞIM: TEK MERKEZ DENEYİMİ

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Özet:

Amaç:

Arteriovenöz malformasyonlar (AVM), yüksek kanama riski nedeniyle mortalite ve morbiditesi yüksek kompleks lezyonlardır. Çalışmamızda kliniğimizde hibrit tedavi yaklaşımı uygulanan AVM olgularının klinik ve radyolojik sonuçları değerlendirildi.

Gereç-Yöntem:
2024–2025 yılları arasında hibrit yaklaşım (endovasküler embolizasyon + cerrahi eksizyon) ile tedavi edilen 6 hasta retrospektif olarak analiz edildi. Değerlendirilen parametreler: yaş, cinsiyet, Glasgow Koma Skalası (GKS), Spetzler-Martin evresi ve postoperatif Glasgow Sonuç Skalası (GOS).

Bulgular:
Hastaların yaş ortalaması 26,1 (16–54) idi. 3'ü kadın, 3'ü erkekti. Tüm hastaların başvuru GKS'si 15'ti. Spetzler-Martin evrelemesine göre 2 olgu evre 1, 2 olgu evre 2, 2 olgu evre 3 idi. İşlem sonraso komplikasyon görülmedi. 1. ay kontrollerinde tüm olguların GOS skoru 5 olarak değerlendirildi.

Tablo 1. Hastaların demografik ve klinik özellikleri

Hasta	Yaş	Cinsiyet	GKS	Spetzler-Martin Evre	Komplikasyon	1. Ay GOS
1	18	K	15	1	Yok	5
2	21	E	15	2	Yok	5
3	23	K	15	3	Yok	5
4	27	E	15	1	Yok	5
5	26	K	15	2	Yok	5
6	54	E	15	3	Yok	5

Sonuç:
AVM tedavisinde cerrahi altın standart olmakla birlikte, endovasküler embolizasyonun adjuvan olarak kullanıldığı hibrit yaklaşım seçilmiş olgularda güvenle uygulanabilmektedir. Çalışmamızda komplikasyon izlenmemiş, erken dönem fonksiyonel sonuçlar mükemmel bulunmuştur. Daha yüksek olgu sayılı serilerle yöntemin etkinliği net olarak ortaya konulabilir.

EP-10 A NEW SCORING SYSTEM FOR PREDICTING CLINICAL OUTCOMES IN ACUTE POSTERIOR CIRCULATION ISCHEMIC STROKE: THE MODIFIED POSTERIOR CIRCULATION ALBERTA STROKE PROGRAM EARLY CT SCORE (MPC-ASPECTS)

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[4] *ESKİŞEHİR OSMANGAZİ TIP FAKÜLTESİ*
[5] *KARTAL DR. LÜTFİ KIRDAR EĞİTİM VE ARAŞTIRMA HASTANESİ*
[6] *FIRAT ÜNİVERSİTESİ TIP FAKÜLTESİ*
[7] *SAMSUN EĞİTİM VE ARAŞTIRMA HASTANESİ*
[8] *ANKARA BİLKENT ŞEHİR HASTANESİ*
[9] *ONDOKUZ MAYIS ÜNİVERSİTESİ TIP FAKÜLTESİ*
[10] *ŞİŞLİ HAMİDİYE ETFAL EĞİTİM VE ARAŞTIRMA HASTANESİ*
[11] *EVLİYA ÇELEBİ EĞİTİM VE ARAŞTIRMA HASTANESİ*
[12] *NİĞDE EĞİTİM VE ARAŞTIRMA HASTANESİ*

Özet:

A New Scoring System for Predicting Clinical Outcomes in Acute Posterior Circulation Ischemic Stroke: Modified Posterior Circulation Alberta Stroke Program Early CT Score (mpc-ASPECTS)

Introduction

Although posterior circulation ischemic strokes are less common than anterior circulation strokes, they are associated with higher rates of mortality and morbidity(1). Recent randomized controlled trials have demonstrated that endovascular treatment (EVT) within the first 24 hours is as effective in basilar artery occlusion as in anterior circulation strokes (2, 3). However, due to the complex anatomy of the posterior circulation, rapid and accurate assessment remains challenging.

The posterior circulation ASPECTS (pc-ASPECTS), developed by Puetz et al. in 2008, has been used to evaluate lesion burden, showing better functional independence in patients with pc-ASPECTS >8 (4). Nevertheless, it has been criticized for insufficiently reflecting bilateral involvement and the clinical impact of brainstem lesions (5). Thus, pc-ASPECTS may be inadequate for predicting functional outcomes in posterior circulation strokes.

This study proposes a novel scoring system, the modified posterior circulation ASPECTS (mpc-ASPECTS), which provides a more detailed assessment of the posterior circulation by assigning higher weights to bilateral lesions and functionally subdividing the brainstem.

Methods

In this multicenter retrospective study, 53 patients with acute posterior circulation ischemic stroke treated with EVT between January 2020 and January 2025 were included. Inclusion criteria were: basilar or vertebral artery occlusion, EVT within 12 hours, availability of CTA, age 18–80, baseline mRS ≤2, NIHSS ≥10, and pc-ASPECTS >6. Successful recanalization was defined as mTICI 2b–3 (6).

The mpc-ASPECTS was calculated on CTA source images using a 20-point scale, considering thalamus, cerebellum, occipital lobes, and brainstem regions according to their functional significance. Bilateral involvement was weighted more heavily. Imaging was independently reviewed by two blinded interventional neurologists, and inter-rater reliability was assessed.

Clinical outcomes were evaluated at 90 days using the modified Rankin Scale (mRS), with 0–3 classified as favorable and 4–6 as poor outcomes (7).

Results

The mean age of patients (n=53) was 62.15 ± 13.57 years, and 37.7% were female. Favorable outcome was observed in 52.8% (n=28). There were no significant differences between favorable and poor outcome groups regarding age, NIHSS, DWI pc-ASPECTS, puncture time, or mpc-ASPECTS scores ($p>0.05$), except for symptom-to-puncture time, which was significant ($p=0.041$).

Correlation analysis showed a positive correlation between baseline NIHSS and mRS, and negative correlations between 24-hour NIHSS, symptom-to-puncture time, and mRS. Neither mpc-ASPECTS nor DWI pc-ASPECTS correlated significantly with mRS.

Logistic regression identified symptom-to-puncture time as an independent predictor of favorable outcome. Neither DWI pc-ASPECTS ($p=0.441$) nor mpc-ASPECTS ($p=0.227$) reached significance as independent predictors.

In ROC curve analysis, AUC values were 0.608 for DWI pc-ASPECTS and 0.629 for mpc-ASPECTS, suggesting comparable predictive performance.

Discussion

Predicting clinical outcomes in posterior circulation strokes is more challenging than in anterior circulation due to involvement of vital brainstem structures, where even small lesions may cause severe deficits (8). Thus, imaging-based scoring systems should incorporate functional considerations.

While pc-ASPECTS remains a fundamental tool, its limitations in accounting for bilateral and brainstem lesions have been recognized (4, 5). The proposed mpc-ASPECTS was designed to address these shortcomings by providing a more detailed functional assessment.

Our findings showed that mpc-ASPECTS demonstrated slightly higher AUC values than DWI pc-ASPECTS, indicating potential utility. However, as neither score emerged as an independent predictor, time-to-treatment and clinical parameters remain the key determinants of outcome, consistent with previous studies (2).

In conclusion, mpc-ASPECTS may serve as a supportive tool in clinical decision-making, but it is not sufficient as a standalone predictor. Further large-scale, prospective, multicenter studies are warranted to validate its utility and reliability.

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EP-11 CLİNİCAL FOLLOW-UP OF CAVERNOUS MALFORMATİONS ACCORDİNG TO THEİR RADİOLOGİCAL APPEARANCE

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ESKİŞEHİR OSMANGAZİ ÜNİVERSİTESİ BEYİN VE SİNİR CERRAHİSİ A.B.D.

Özet:

Introduction

Cavernous malformations are clusters of hyalinized capillaries separated by sinusoidal vascular channels, notably lacking intervening brain parenchyma. Their incidence is estimated at 0.4–0.8%. They are typically diagnosed in adolescence or middle age, with approximately 75% located supratentorially, most often in the frontal and temporal lobes. This study aimed to investigate the clinical course and radiological features of cavernous malformations in our cohort, classified according to the Zabramski system.

Materials and Methods

A retrospective cohort of 96 patients diagnosed with cavernous malformations between 2015 and 2025 was analyzed. Patients were classified based on MRI findings according to the Zabramski classification. Clinical presentation and neurological examination findings at admission were also assessed.

Results

The mean age at diagnosis was 42 years. Cavernous malformations were supratentorial in 75% of cases (most commonly frontal and temporal), and infratentorial in 25%. According to Zabramski classification, 29 patients had type I, 41 had type II, 16 had type III, and 7 had type IV lesions. During follow-up, three patients demonstrated transformation from type II to type I.

- Treatment: 26 patients (27%) underwent surgery immediately after diagnosis; 61 patients (63.5%) were managed conservatively; 6 patients (6.3%) received Gamma Knife radiosurgery. Additionally, three patients with type II lesions that progressed to type I underwent surgery during follow-up.
- Neurological status: All patients with type IV lesions showed no deficits and were followed conservatively. The highest rate of neurological deficits was observed in type I lesions. Among 44 patients with type II lesions, 3 (6.82%) transformed into type I.
- Symptoms: The most frequent presenting complaints were headache and seizures.

Conclusion

In our series, the majority of patients requiring surgery had Zabramski type I and type II lesions. These findings highlight the usefulness of the Zabramski classification in guiding follow-up strategies and treatment planning for patients with cavernous malformations.

EP-12 DYNAMİC ANGİOGRAPHİC FEATURES OF CEREBRAL MYCOTİC ANEURYSMS DUE TO INFECTİVE ENDOCARDİTİS

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Özet:

Background:

Mycotic aneurysms are arterial wall dilatations caused by infectious processes. Their diagnosis is often challenging because it may be angiographically hidden in the initial stages and evolve dynamically. In our case, we aimed to discuss the natural course and treatment options of mycotic aneurysms showing dynamic changes angiographically and clinically.

Case Presentation:

A 27-year-old man presented with severe headache, nausea, and vomiting. He had also been complaining of fatigue and myalgia for a week. He had a history of acute rheumatic fever in his medical history at age 9. Noncontrast head computed tomography (CT) showed large right temporal lobe hemorrhage. Brain CT angiography was negative for any vessel abnormality. Digital subtraction angiography (DSA) determined areas of a small saccular aneurysm in the right P4 segment of the posterior cerebral artery (PCA) suggestive of mycotic aneurysm. Transesophageal echocardiography revealed a fibrillar vegetation on the mitral valve. The blood cultures grew methicillin-resistant *Staphylococcus aureus* within a day. Medical management with antibiotics was recommended given the risk of surgical/endovascular treatment and because cardiac surgery was not imminent. As long as the patient had renal failure as a result of antibiotic therapy, they were unable to take an adequate dose of antibiotics and underwent temporary aphasia two weeks later. Magnetic resonance imaging of the brain identified a new intraparenchymal hemorrhage within the left posterior temporo-occipital area. During hospitalization, his medical therapy was adjusted and continued. Repeated cerebral angiography 2 weeks later was stable, however, repeat cerebral angiography 4 weeks from the first angiogram showed the right P4 segment of the posterior cerebral artery (PCA) had completely resolved whereas a new irregular fusiform aneurysm of the left MCA M4. The DSA images performed after the medical treatment period was completed had similar results.The left MCA aneurysm was treated with coiling. Aortic valve replacement was scheduled for the following week. He underwent aortic valve replacement the next week. Follow-up angiography a month after treatment showed no residual or new aneurysms.

Conclusion:

MAs are dynamic lesions with a likelihood of rapid change. Furthermore, the diagnostic algorithm and treatment methods of mycotic aneurysms are still uncertain. Therefore, individualized treatment should be performed according to the location and shape of the aneurysm, the patients comorbidities, and the presence of intracerebral hemorrhage.

Preferably, cerebral angiography should be performed as a vascular imaging modality for initial evaluation and follow-up.

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EP-13 CASE SERIES OF THROMBECTOMY AFTER 24 HOURS

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Özet:

ABSTRACT

Purpose:The timing of endovascular treatments (EVT) for acute ischemic stroke has varied over the years. Clinical deterioration can sometimes occur more than 24 hours after the first symptom. There is very limited data in the literature regarding EVT in this patient group.

Methods: A total of 6 cases who underwent EVT after 2022 from 2 centers with high stroke patient volume and whose data were available were examined.

Findings: Of the six patients who underwent successful recanalization, four had posterior system strokes and two had anterior system strokes. One died during hospitalization. One patients 3-month mRs was 4, and the other four patients were 0-1.

Results: In selected cases, EVT can be successfully performed even at later times. Because of the long-term benefits, time-independent applications can be crucial in appropriate patients.

EP-14 CAROTİD WEB, A RARE CAUSE OF İSCHEMİC STROKE: REPORT OF TWO CASES

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SANCAKTEPE İLHAN VARANK EĞİTİM VE ARAŞTIRMA HASTANESİ

Özet:

Abstract

Background: Carotid web (CaW) is an uncommon but increasingly recognized vascular abnormality that predisposes patients to ischemic stroke, often in the absence of conventional vascular risk factors. It is characterized by a thin shelf-like intraluminal projection arising from the posterior wall of the internal carotid artery (ICA) bulb, causing altered flow dynamics and thromboembolism.
Methods/Case Presentation: We report two cases of ischemic stroke attributed to carotid web. Case 1 involved a 59-year-old man with hypertension, diabetes mellitus, and smoking history, previously treated for ischemic stroke, who presented with radiological findings suggestive of CaW during routine follow-up. Case 2 a 78-year-old man with coronary bypass surgery, Parkinson's disease, and hyperlipidemia, who experienced recurrent ischemic events despite antiplatelet therapy. Digital subtraction angiography (DSA) confirmed carotid web, and the patient underwent successful carotid stenting.
Results: Case 1 was managed conservatively due to absence of recurrent ischemic events, while Case 2 underwent revascularization following recurrent strokes despite medical therapy. Both patients demonstrated stable neurological status during follow-up.
Conclusion: Carotid web remains underdiagnosed, yet it carries a substantial risk of recurrent ischemic stroke, particularly under medical management alone. Our cases support the growing evidence favoring interventional strategies, such as stenting or carotid endarterectomy, over antiplatelet therapy in symptomatic patients.

Introduction

Cryptogenic stroke remains a diagnostic challenge, particularly in younger or atypical patients without traditional vascular risk factors. Carotid web (CaW) has emerged as a distinctive, though rare, etiology of ischemic stroke. Radiographically, CaW manifests as a thin, shelf-like projection extending into the ICA lumen, most commonly from the posterior wall of the carotid bulb. Unlike classical atherosclerotic disease, CaW is neither inflammatory nor degenerative, but rather a suspected variant of intimal fibromuscular dysplasia.

Hemodynamically, the shelf-like morphology of CaW promotes localized flow stasis and turbulence, fostering thrombus formation and subsequent embolization. Although the degree of luminal narrowing may be modest, the resulting stroke risk is disproportionately high compared with conventional carotid stenosis.

Recent meta-analyses have highlighted the limitations of antiplatelet therapy in preventing recurrence. Patel et al. (2022) demonstrated recurrence rates as high as 39% at 10 years among medically managed patients, whereas no recurrent strokes were reported following revascularization. Similar findings were replicated in more recent pooled analyses, reinforcing the argument for early intervention.

Herein, we describe two patients with symptomatic carotid web, illustrating distinct clinical courses under medical versus interventional management.

Case Presentations

Case 1

A 59-year-old male with known diabetes mellitus, hypertension, and active smoking presented for routine neurological follow-up. Two years prior, he had experienced left-sided numbness lasting several days, attributed to ischemic stroke, and was maintained on daily acetylsalicylic acid (100 mg).

Computed tomography angiography (CTA) of the head and neck demonstrated approximately 50% stenosis with saccular aneurysmal dilation in the right ICA and 25–30% stenosis in the left ICA due to fibrocalcific plaque. Echocardiography and electrocardiography were unremarkable.

Subsequent digital subtraction angiography (DSA) confirmed the right ICA lesion to be consistent with carotid web. Diffusion-weighted MRI revealed an old encephalomalacic lesion in the right temporal lobe, without evidence of acute ischemia. Neurological examination was normal. Given the absence of recurrent ischemic events and stable status under aspirin therapy, the patient was managed conservatively.

Case 2

A 78-year-old male with a history of coronary artery bypass grafting (CABG), Parkinson's disease, and hyperlipidemia presented with recurrent transient neurological symptoms, including left-sided facial asymmetry. He reported four episodes over three years, two of which required hospitalization, despite adherence to aspirin (100 mg daily).

In the neurological examination of the patient, it was observed that the patient could close the left eyelid less than the right side and there was erasure in the left nasolabial groove, and the external examination was evaluated as natural. Diffusion MRI revealed a lacunar infarct near the posterior horn of the right lateral ventricle. CTA showed a double-lumen appearance and severe stenosis in the right ICA bulb. DSA confirmed the diagnosis of carotid web.

Given recurrent ischemic events despite best medical therapy and absence of cardioembolic sources (sinus rhythm on holter monitoring; normal transthoracic echocardiogram), revascularization was pursued. Endovascular intervention involved deployment of a 7×30 mm Wall stent and a 6×8×30 mm Protégé stent across the web, achieving complete resolution of the lesion and restoration of normal ICA flow. The patient tolerated the procedure without complication and remained stable at follow-up.

Discussion

Carotid web represents a rare but clinically significant cause of ischemic stroke, particularly in patients with cryptogenic presentation. Its pathogenesis is debated, with leading hypotheses including intimal fibromuscular dysplasia and congenital anomalies of carotid embryogenesis. While the prevalence is low, the diagnostic challenge lies in its subtle imaging features, often mistaken for atherosclerotic plaque or dissection.

Our first case underscores that not all CaW require immediate intervention, particularly when patients remain asymptomatic or stable under medical therapy. However, as illustrated in the second case, recurrent ischemic events despite antiplatelet therapy strongly favor procedural intervention.

Evidence consistently indicates that revascularization, either via carotid stenting or endarterectomy, eliminates the risk of recurrence. Meta-analyses published in 2022 and 2025 demonstrated zero recurrence among intervention arms, compared with 26–39% recurrence at long-term follow-up under medical management. Moreover, early recurrence within 30 days carries significant morbidity and mortality, highlighting the need for timely identification and treatment.

From a therapeutic standpoint, the choice between stenting and endarterectomy remains individualized, depending on anatomical considerations, comorbidities, and institutional expertise. In our second case, stenting provided durable patency and prevented further ischemic events.

Conclusion

Carotid web is an underrecognized but important cause of ischemic stroke, often masquerading as cryptogenic stroke in patients with otherwise negative evaluations. Diagnosis requires high clinical suspicion and careful imaging interpretation.

Our two cases highlight divergent outcomes: one patient remained stable under medical therapy, whereas another required revascularization due to recurrent strokes. The accumulating evidence strongly supports interventional management in symptomatic cases, as medical therapy alone is associated with substantial recurrence risk.

Future prospective studies are needed to establish standardized management guidelines. Until then, individualized risk–benefit assessment remains crucial, with early consideration of intervention in patients with recurrent ischemic events.

EP-15 RESCUE STENTİNG FOR ACUTE TANDEM OCCLUSİONS İN ANTERİOR CİRCULATİON STROKE: A SİNGLE-CENTRE EXPERİENCE

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SBÜ ŞEHİT PROF DR İLHAN VARANK SANCAKTEPE EĞİTİM VE ARAŞTIRMA HASTANESİ

Özet:

Objective

Tandem occlusions in anterior circulation stroke refer to the simultaneous presence of a severe stenosis or occlusion in the cervical internal carotid artery (ICA) and an occlusion in an intracranial artery, such as the middle cerebral artery (MCA).This condition is a particularly challenging type of large vessel occlusion (LVO) and is associated with poorer outcomes compared to isolated intracranial occlusions. For anterior circulation tandem occlusions, the optimal management strategy for extracranial carotid lesions is controversial. We aimed to compare the efficacy and safety of acute stenting (AS) with balloon angioplasty (BA) and delayed carotid endarterectomy.

Methods

Clinical data were collected from 58 patients with anterior circulation tandem occlusion who underwent endovascular treatment at our center over two year period. Of these patients, 40 and 18 were assigned to the AS and delayed endarterectomy groups, respectively. The clinical characteristics and outcome data of the 2 groups were analyzed and compared.

Results

The proportion of patients with good outcomes was 60.2%. The AS group had a higher rate of successful recanalization (97.4% vs. 81.4%, $P = 0.007$) and a lower rate of occlusion of the responsible vessel at 90 days (15.1% vs. 33.4%, $P = 0.039$) than the endarterectomy group. The AS group was also significantly better than the endarterectomy group in terms of good outcomes (68.2% vs. 45.1%, $P = 0.027$), but there was no significant difference between the 2 groups in terms of 90-day mortality (5.3% vs. 7.8%, $P = 0.691$) and asymptomatic intracranial hemorrhage (7.3% vs. 5.9%, $P = 1.000$). Lower baseline National Institutes of Health Stroke Scale scores were associated with good outcomes ($P < 0.001$), and the presence of symptomatic intracranial hemorrhage was associated with 90-day mortality ($P = 0.004$).

Conclusions

Acute stent placement in patients with acute ischemic stroke due to anterior circulation tandem occlusion may have a better outcome than BA and delayed carotid endarterectomy , and the safety of both approaches is comparable.

EP-16 ABNORMAL EXTERNAL CAROTİD ARTERY ANASTOMOSİS

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ŞİŞLİ HAMİDİYE ETFAL TRAİNİNG AND RESEARCH HOSPİTAL

Özet:

INTRODUCTION: The anastomosis of the external carotid artery (ECA) with the internal carotid artery (ICA) and vertebral artery (VA) is a rare variant. Previous cases have demonstrated anastomoses with the middle cerebral artery (MCA) and ICA via the facial and maxillary arteries, with the MCA via the middle meningeal artery, and with the VA via the occipital artery. We aimed to present a case in which the right ECA, identified through digital cerebral angiography (DSA), was the sole artery supplying the brain due to its anastomosis with the MCA and VA.

CASE: A 63-year-old male patient with a history of known hypothyroidism, diabetes mellitus, and right hip prosthesis, who was on dual antiplatelet therapy, presented to the outpatient clinic with complaints of positional vertigo. Neurological examination revealed a pathological right-sided ataxic gait. Cranial MRI showed multiple hyperintense lesions in the bilateral cerebral and cerebellar areas on T2 FLAIR sequences. Both ICAs were observed to be occluded in cranial and cervical CT angiography, and DSA was performed. The DSA revealed occlusion of the left subclavian artery, occlusion of both right and left ICAs, and no flow was detected beyond the right VA from the V1 segment. Flow was observed from the right ECA to the bilateral MCAs, anterior cerebral arteries, posterior cerebral arteries, and the basilar artery.

CONCLUSION:This rare abnormality has not been previously reported as a case. The reported cases pertain to anastomoses between the ECA and MCA, with only four documented cases, all of Central Asian origin. Due to the very limited number of cases, no definitive cause has been established. As DSA becomes more widespread in the future, the relationship with genetic factors, age, gender, and other reasons may become clearer.


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