INTRODUCTION OF THE KANEKA I-ED COIL SYSTEM – AN INITIAL SINGLE-CENTER EXPERIENCE

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Introduction/Purpose The Kaneka i-ED coil system offers 5 coil types of varying softness (standard, medium, soft, extra soft, and silky soft) and 3 different shapes from low-memory to a high-volumetric filling coil (i-ED Complex coil, i-ED Complex-Infini coil and i-ED 14-Infini). Some of the coils can be delivered and detached through a 0.013-inch microcatheter. The monopolar detachment system indicates with a light and sound signal when the best detachment position for the coil is reached, eliminating the need for a 2-marker microcatheter. We here present our initial experience with use of the Kaneka coils for treatment of intracranial aneurysms.

Materials and Methods We reviewed our neurointerventional database and identified all patients who underwent coil embolization for intracranial aneurysm treatment between January and February 2023. We then reviewed the procedural data and included all patients in whom Kaneka i-ED coils were used. Patient characteristics and procedural data were collected.

Results The Kaneka i-ED coils were used in 4 patients (1 female) with mean age of 65 years (range 49-69 years). The aneurysms were unruptured and located at the MCA bifurcation (n=2), anterior communicating artery (n=1) and basilar tip (n=1). Mean largest aneurysm diameter was 4.2 mm (range 3.3 mm to 5.8 mm). Two aneurysms were previously treated (Y-stent coil and coiling) requiring re-treatment. Y-stenting in combination with Kaneka coils was performed in one case given the wide neck of the aneurysm. Coil systems used included the Complex SilkySoft coils in 3 cases and Complex Infini coil in 1 case. All coils were delivered and deployed with a Headway Duo microcatheter (Microvention) either 156 cm length with 2 marker tips or 167 cm length with 1 marker tip. Coil deployment and detachment was successful in all cases. In previously treated cases, the coils found open space within the aneurysm without moving/dislodging existing coil loops.

Conclusion The Kaneka i-ED coil system offers a versatile portfolio of different coil types, lengths, and profiles to treat and re-treat a large variety of intracranial aneurysms. Our initial experience with these coils has been very promising. Patient follow-up and additional cases are needed to further evaluate this new coil system.

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USE OF 10:1 GLUE HYPER-DILUTION IN MIDDLE MENINGEAL ARTERY EMBOLIZATION FOR CHRONIC SUBDURAL HEMATOMAS: EXPERIENCE IN 46 CONSECUTIVE CASES

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Introduction/Purpose Middle meningeal artery (MMA) embolization for the treatment of chronic subdural hematomas (cSDH) is becoming an alternative or adjunct to surgical intervention. Recent literature suggests distal embolic penetration beyond visible MMA branches achieves optimal cSDH devascularization. Here we discuss the efficiency and technical advantage of a 10:1 glue hyper-dilution for enhanced embolization of non-visible dural vasculature.

Materials and Methods A prospectively-maintained IRB-approved institutional database of the senior authors was retrospectively reviewed to identify consecutive cases where patients underwent MMA embolization with a 10:1 glue dilution paradigm with TRUFILL™ n-BCA liquid embolic.

Results The technique of 10:1 glue dilution in MMA embolization was performed for 23 patients, in 46 consecutive cases over a 5-month period (September 2022 to February 2023). Average patient age was 74 +/- 10 years (range 51-90 years), 56.5% female. Patients presented after a ground level fall (41%, n=19), with headache (13%, n=6), trauma (9%, n=4), and altered mental status (9%, n=4). Fifty-two percent of cases presented in the setting of antiplatelet or anticoagulant regimens (n=26): aspirin (30%, n=14), therapeutic anticoagulation (17%, n=8), or other antiplatelet agents (4%, n=2). On presentation, recurrent cSDHs were seen in 18 cases (40%) consisting of patients previously managed conservatively (50%, n=9), with prior burr holes (44%, n=8), versus craniotomy (5%, n=1). Average admission cSDH thickness was 10 ± 5 mm (SEM 0.89) with an average midline shift of 3 ± 3.5 mm (SEM 0.63) and right-sided laterality in 48% of cases (n=22). Bilateral embolization was performed in 91% of patients (n=21). Embolized branches of the MMA included 11 (24%) anterior, 9 (20%) posterior, and 26 (57%) both. One postprocedural complication was noted, a unilateral partial facial palsy (House-Brackmann 2), since improving on discharge with mRS 0. The technique was successfully carried...
out in 46/46 (100%) cases without need for periprocedural rescue surgery.

Conclusion Embolization of the middle meningeal artery with n-BCA glue is an emerging treatment strategy for cSDHs. Here we demonstrate the use of a 10:1 glue dilution for enhanced embolization of non-visible MMA branches as a treatment paradigm for thorough glue penetration and extensive embolization. Further randomized studies across embolic substances and techniques will delineate optimal cSDH treatment effects.

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