The registered study (10 hospitals) received ethics/health research approvals, supported by UK's National Institute of Health and Care Research.

Results Average standard-selected FD length was 19.54mm vs. 18.61mm with PreSize. In 45% of cases, standard-selected FD length was different vs. PreSize-selected (mostly PreSize-selected length was shorter, by up to 20mm).

Average standard-selected FD diameter was 4.17mm vs. 4.33mm (PreSize). In 31% of cases, standard-selected FD diameter was different to PreSize-selected (mostly diameter increase, by up to 1mm). In all but 6 cases, device chosen was based directly on PreSize simulation; in only 3 cases balloon angioplasty was performed; in 88% of cases, only 1 device was deployed (1.1 device/patient); prospective simulation accuracy was evaluated 95% (mean).

Conclusion First-of-its-kind trial presents prospective data on impact of planning simulation on clinical practice, demonstrating pre-deployment real-time planning with PreSize changes device selection from current practice.

Other

3.1. Innovation

O21 SAFETY OF INTRACRANIAL ANEURYSM TREATMENT BY ROBOTICALLY ASSISTED FLOW DIVERTER IMPLANTATION

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Introduction Intraprocedural intracranial aneurysm rupture is one of the most critical possible complications during endovascular treatment.

Aim of Study The aim of this study was to evaluate the risk of intracranial aneurysm rupture during robotically assisted flow diverter implantation, using the CorPath GRX robotic system.

Methods From February 1, 2022 to March 20, 2024, 65 target aneurysms (45 saccular) were treated by robotically assisted flow diverter implantation. The most common location of the target aneurysm was ICA (33), followed by AComA (17), MCA (8), ACA (1), AChoA (1), basilar artery (2), PCA (2), and VA (1).

Results Only one (1.5%) intraprocedural aneurysm rupture was recorded, without the need for manual conversion. Aneurysm rupture was detected on angiogram after microcatheter navigation through aneurysm sac, before flow diverter implantation. No signs of continuous extravasation were visible after the implantation of the flow diverter. The patient recovered completely.

Conclusion The risk of intraprocedural intracranial aneurysm rupture during robotically assisted flow diverter implantation is low. The results of this study confirmed an acceptable risk of robotically assisted procedures.

Haemorrhagic

1.1. Aneurysms

O22 FLOW DIVERSION VERSUS INTRA-SACCULAR FLOW DISRUPTION TECHNIQUES FOR THE TREATMENT OF UNRUPTURED CAROTID OPHTHALMIC ANEURYSMS

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Introduction Intra-saccular flow disruptors (ISFD) have not yet been routinely used for internal carotid artery (ICA) para-ophthalmic aneurysms. However, flow diverter stents (FDS) have been considered the first-line treatment of these aneurysms with optimal occlusion rates.

Aim of Study This single-center study aims to assess the safety and efficacy of ISFD compared to FDS for para-ophthalmic aneurysm treatment.

Methods We retrospectively reviewed consecutive patients with para-ophthalmic aneurysms treated with either ISFD or FDS at our institution from January 2011 to March 2023. We collected demographics, technical success, complication rates, and angiographic outcomes.

Results We identified 46 patients (median age: 50.4) with 51 unruptured saccular ICA para-ophthalmic aneurysms. The mean aneurysm size was 6.2 mm, including 55% of wide-necked lesions (neck size >4mm). The treatments included WEB or CONTOUR devices in 17 cases and FDS in 34 cases. At the latest follow-up (FU) available, aneurysms treated by FDS demonstrated adequate occlusion (defined as complete occlusion or presence of a neck remnant) in 92.9% (mean FU time 59 months). Those treated with ISFD showed comparable results, with 94.1% (p=0.8) achieving adequate occlusion (mean FU 26 months). Thromboembolic events occurred in 5.8% of patients in each group. No mortality was observed, one patient in the FDS group experienced permanent morbidity following parenchymal hematoma (hemiparesis and aphasia).

Conclusion ISFD offers a safe and effective alternative for FDS in para-ophthalmic aneurysm treatment. Its benefits include reduced peri-operative anti-platelet administration with potential application in emergency settings.