



Abstract E-038 Figure 1

Purpose To ensure effective therapeutic management of sacroiliac (SI) joint pain, precise needle placement during diagnostic SI joint injection is essential. The reported accuracy of diagnostic SI pain assessment using single or dual blocks is highly variable, with false positive rate of 10–30%. CT guidance for sacroiliac joint injection has been the preferred imaging technique for needle guidance due to the complex 3 dimensional anatomy of the SI joint, frequent encounter of covering osteophytes and occasionally encountered extremely narrowed SI joint. However, the technique has been challenged due to relatively prolonged procedure time and risk of increased radiation exposure. We evaluated the technical feasibility of the 3D-CBCT guided diagnostic SI joint injection technique.

Materials and methods Four patients (5 SI joints) with clinically suspected SI joint pain syndrome were enrolled. The procedure was performed under local anesthesia in a bi-plane neuroangiography suite (AlluraXper[®], Philips, Netherlands), but only AP plane was used for the procedure. Using the integrated image guidance system (XperGuide[®], Philips, Netherlands), the target and needle trajectory were selected based on 3D-CBCT images. Subsequently, the selected images were fused with real-time fluoroscopy for the needle guidance. Post needle placement and post contrast injection 3D-CBCTs were also obtained before the injection of local anesthetics (approximately 0.5–1.0 ml) into the target SI joint.

Results The needle placement and diagnostic injection for the target SI joint were successful in all 4 cases (5 SI joints). Median fluoroscopy time per SI joint was 5.2 min (range: 4.6 min – 6.7 min) and total DAP was 87,445.2 mGycm² (range: 32,864 mGycm² – 199,303 mGycm²). Pre-procedure mean pain level was 7.5/10 and immediate post-procedure mean pain level was 0/10.

Conclusion 3D-CBCT guided diagnostic SI joint injection is technically feasible, effective, reasonably fast and can be performed with relatively low radiation exposure. In addition, the real-time, interactive nature of the guidance system may provide more confidence to the operator.

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E-039 COMPARISON OF MEDICAL THERAPY VS. INTRA-ARTERIAL THERAPY FOR ACUTE VERTEBROBASILAR STROKE

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Introduction/purpose We present a consecutive retrospective cohort of patients treated at an academic stroke center for

acute ischemic stroke from large vessel occlusion of the verte-brobasilar circulation. We describe prognostic factors and out-comes for patients receiving medical and/or intra-arterial therapy (IAT) over a 12 year period.

Materials and methods We treated 87 patients (medical therapy N = 44 and IAT = 43) between 2004–2015 for acute posterior circulation infarct with verte-brobasilar occlusion at our institution. Patients were dichotomized by modified Rankin Score (mRS) to good outcome defined as mRS 0–2 or poor outcome defined as mRS 3–6. Multiple characteristics were compared including age, gender, NIHSS, infarct volume, posterior ASPECTS, thrombus location, hconversion and treatment modality (medical therapy or IAT). Categorical variables were compared using Chi-square statistic, and continuous variables were compared using t-test and Mann-Whitney statistics. The study was conducted with IRB approval.

Results Major etiologies of acute basilar occlusion included atrial fibrillation, PFO, vertebral artery dissection with distal embolus, and intracranial atherosclerosis (ICAD). Poor outcomes were associated with higher NIHSS, lower ASPECTS and extensive brainstem involvement on DWI. IAT patients presented with more severe deficit (NIHSS 21) compared to patients treated medically (NIHSS 14). Rates of good outcomes (mRS 0–2) were equivalent between the IAT (21/43, 49%) and medically treated cohort (21/44, 48%). When ICAD patients were excluded from analysis, results were similar with 50% of the IAT patients (18/36) and 43% of medically treated patients (15/35) having a good outcome. This time period spans major changes in endovascular techniques ranging from urokinase and wire manipulation to current devices. ADAPT or stentrievors were only uin ten cases.

Conclusion Compared to medical trials in 2015, which demonstrate clinical benefit for IAT over medical therapy for acute ischemic stroke of the anterior circulation, the posterior circulation is less well studied. Important prognostic factors for stroke due to large vessel occlusion of posterior circulation include posterior ASPECTS score and infarct volume in the brainstem. In this small retrospective study, patients treated with IAT had greater stroke severity than the medical cohort, yet they had similar rates of good functional outcome. Parameters of this retrospective analysis may be used to improve tri-age and treatment of patients with acute verte-brobasilar occlusion for thrombectomy using current technology.

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E-040 FIVE-YEAR SINGLE CENTER EXPERIENCE OF INTRACRANIAL ANEURYSM TREATMENT WITH THE PED IN PATIENTS OF DIFFERENT AGE GROUPS

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Purpose To evaluate safety and efficacy of the pipeline embolization device (PED) in patients of different age groups and with incidentally found or recanalised (previously coiled or clipped) aneurysms.

Materials and methods All patients with an incidentally found or recanalised aneurysm and treated with the PED at our institution between 2011 and 2016 were included. We then divided the patient cohort into three age groups representing young (Y, ≤ 45 years), middle age (M, 46- <65 years) and older (O, ≥ 65 years) individuals. Information on patient's vascular risk factors, presenting symptoms and mRS on admission was collected. Follow-up imaging was evaluated for aneurysmal occlusion and the presence of intimal hyperplasia. Patient clinical outcome at discharge, 6 and 12 months was documented.

Results We included 140 patients harboring 164 aneurysms with 20 patients in the young age group, 88 in the middle age and 32 in the older age group. Male to female ratio was approximately 1:4 overall and interestingly in all age groups as well. The majority of aneurysms were located in the anterior circulation (94.5%) and found incidentally (75%). Twenty-four aneurysms had been previously treated (12 ruptured and 12 unruptured). Smoking, hypertension and dyslipidemia were the most frequently encountered vascular risk factors in all age groups, with smoking being most common in the young, hypertension the most common in the middle age and hypertension/dyslipidemia the most common in the older age group. Median mRS on admission and discharge was 0 for all age groups. The median mRS remained 0 at 6 and 12 month follow-up. Overall mortality and morbidity rate was 2.1% (3/140, M = 2 and O = 1), Complete aneurysm occlusion at 6 and 12 months was seen in 77% (78/101) and 80% (52/65), respectively. Mild intimal hyperplasia was seen in 18 cases total (18%) with 2 cases in the young, 11 in the middle age and 5 in the older age group. Moderate and severe intimal hyperplasia was found in one case each (young and older age group). No retreatment was required.

Nine aneurysms (Y = 3, M = 5 and O = 1) which demonstrated near complete occlusion at 6 months showed complete occlusion in 2 cases (M = 2) and stable near complete occlusion in the remaining 7 at the 12 month mark. For aneurysms demonstrating partial occlusion at 6 months (Y = 2, M = 5, O = 3), 12 months follow-up showed progression to complete or near complete occlusion in 1 case each (Y = 1 and M = 1) and stable partial occlusion in 3 cases (M = 3).

Available 12 months follow-up for mild intimal hyperplasia detected at 6 months showed resolution in 4 cases (M = 1 and O = 3) and stable mild hyperplasia in 5 cases (Y = 1

and M = 4). One case of moderate intimal hyperplasia at 6 months (young age group) improved to mild hyperplasia at 12 months follow-up.

Subanalysis of treatment outcome of incidentally found aneurysms compared to unruptured pretreated or ruptured pretreated aneurysms showed no difference of flow diverter performance between the different aneurysm groups or among the different patient age groups.

Conclusion PED placement is feasible and safe in patients of different age groups and with incidental or recanalised aneurysms.

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E-041 ENDOVASCULAR TREATMENT OF INTRACRANIAL ANEURYSMS WITH BARRICADE COILS: SAFETY AND EFFICACY IN A PROSPECTIVE SERIES

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Purpose The superiority of endovascular treatment versus surgery in the management of intracranial aneurysms was initially demonstrated in ISAT, endovascular treatment being performed using bare platinum coils. Despite the appearance of new endovascular techniques (stenting, flow diversion, flow disruption), coiling still is the first-line treatment singularly for ruptured aneurysms. New coils are usually not evaluated except if they are surface-modified. However as new bare coils have also different characteristics, it is important to evaluate their safety and efficacy.

Materials and methods Patients with intracranial aneurysms treated between October 2013 and December 2015 in Reims University Hospital by simple coiling or balloon-assisted coiling with Barricade Coils (Blockade Medical, Irvine, California, USA) were prospectively included in a database and retrospectively studied. Patients treated with other devices (stents, flow diverters, flow disrupters) were not included in these series. For all included patients, medical charts, imaging studies and initial and follow-up imaging examinations were reviewed by an independent practitioner that made a comprehensive evaluation of the procedural and post-procedural complications, morbidity and mortality rates, one month clinical follow-up, and anatomical results.

Results From October 2013 to December 2015, 98 patients having 110 saccular intracranial aneurysms were treated with Barricade coils (Blockade Medical, Irvine, California, USA). Ten patients with 13 aneurysms adjunctive devices and were