

Poster 1

Multiyear analysis of complex EVAR cases at a UHCW: Outcomes and performance

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Background:

Analysis of intervention and outcome of complex EVAR patients with particular focus on sac regression post operatively.

Method:

Retrospective data collection from IPM of all recorded complex EVAR cases (TEVAR, FEVAR, Branched and Chimney) between 1st January 2011 – 31st December 2021. Patients individually screened with CRRS. Patients with aneurysmal disease with pre-operative CT angiogram and 12month CT angiogram follow-up had sac size comparison and Mann-Whitney U-test performed to assess for significant difference in sac size post operatively.

Results:

292 patients returned of which 90 (64 elective, 36 emergency) patients had Complex EVAR (25 FEVAR, 24 TEVAR for aneurysm, 16 TEVAR for traumatic dissection, 13 TEVAR for type B dissection, 7 Branched, 3 TEVAR for rupture, 1 Chimney, 1 F-TEVAR). 47 patients entered routine surveillance. 11 patients required further intervention within 5 years. 1 patient was referred for cardiothoracic further input. 30 day mortality rate 8% (elective 3.12%, emergency 16.6%), paraplegia rate 2% (elective 1.5%, emergency 2.7%). 38 cases had aneurysmal disease and a pre-operative and 12month CT angiogram. Average sac change was statistically significant -63mm ($p=0.020$), 55% of patients had sac regression >5mm.

Conclusion:

Sac regression of >5mm is an independent factor for good long term post-operative outcome. More than half of complex EVAR patients treated at UHCW have >5mm sac regression supporting the plan for further growth of endovascular treatment within the department.

Poster 2

Aortic Dissection management since "Think Dissection" pathway enabled at UHCW: Treatment and outcome

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Background:

Analysis of aortic dissection patients. Particular focus on management as per "Think Dissection" pathway

Method:

Retrospective collection from IPM of all recorded aortic dissection cases between 1st January 2016 – 31st December 2021. Patients individually screened via CRRS.

Results:

143 patients returned of which 65 patients had Type B dissections, 23 acute and 42 chronic.

Acute Management:

11 medically managed, 9 surgically managed: 6 TEVAR only, 1 TEVAR + open AAA repair, 1 TEVAR + SMA bypass, 1 TEVAR + right hemicolectomy, 2 palliated. Nil acute procedure had prophylactic spinal drain or debranching.

Outcome:

Medically managed patients: 1 died, 1 referred to specialist centre, 7 under surveillance, 3 discharged. Surgically managed patients: 4 died post-operatively (3 of which were 'TEVAR +' patients), 1 paraplegic, 4 under surveillance. 30 day mortality 45%, paraplegia 9%, stroke 0%.

Chronic Management:

32 medically managed, 8 surgically managed: 2 TEVAR only, 6 TEVAR with pre-operative debranching surgery and spinal drains peri-operatively, 2 palliated

Outcome:

Medically managed patients: 20 under surveillance, 10 discharged, 2 left the area. Surgically managed patients: 4 under surveillance, 2 died with type A dissection post TEVAR, 1 died with ruptured AAA, 1 required subclavian artery embolisation due to backbleeding. 30 day mortality rate 6.2%, paraplegia 3.1%, stroke 0%.

Conclusion:

All patients medically managed for dissection had blood pressure control in a monitored bed within CCU or GCU. Surgical outcomes improved with pre-operative debranching and spinal drain insitu but not always appropriate/available in acute setting. Patient outcomes better in chronic setting than acute as expected.

Poster 3

The Use of Dermal Substitutes for the Management of Diabetic Foot Ulcers in Patients with Critical Limb Ischaemia: A Systematic Review

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Background:

Diabetic foot ulcers (DFU) are one of the most common complications of diabetes. The use of dermal substitutes in the management of non-healing DFUs in patients with an adequate blood supply is well reported. Diabetic patients often have concomitant peripheral vascular disease. We wanted to establish the role of these dermal substitutes in patients with DFU and critical limb ischemia (CLI).

Methods:

A systematic review was performed in February 2022, utilising MEDLINE, EMBASE, PubMed and Google Scholar. All studies including patients with DFUs and evidence of CLI (determined by ABPI, toe pressure or TcPO₂) and patient related outcomes (limb salvage and wound healing) were included. PRISMA guidelines were adhered to throughout.

Results:

Most of the screened studies, which evaluated the use of dermal matrices in patients with DFUs, excluded patients with inadequate peripheral vascular supply. Overall, three studies which met the inclusion criteria were identified. One study found even in cases of 'no option' CLI the use of a dermal substitute significantly improved limb salvage and wound healing. The other two studies demonstrated the role of revascularisation in patients with CLI and showed timely wound healing and the potential for limb salvage in these patients with the use of dermal substitutes.

Conclusion:

The evidence for use of dermal substitutes to treat patients with DFUs and concomitant CLI is limited. Further research is needed to evaluate the perfusion targets for these patients as this could have the potential to influence clinical practice and patient outcomes in patients with CLI.

Poster 4

An endovascular-first approach to popliteal artery injuries resulting from traumatic knee injury.

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Background

Popliteal artery (PA) injury is an uncommon but devastating consequence of traumatic knee dislocations or knee replacements (1). Current treatment standards favour open surgery with direct repair or bypass. Endovascular techniques are increasingly used in trauma and several case-series have been published showing acceptable results for the PA (1-6). Advantages of an endovascular approach include decreased operating time and physiological insult as well as avoiding further iatrogenic injury due to distorted anatomy. A case series of 46 patients undergoing endovascular repair for isolated PA injuries published secondary patency rates of 89% at 2 years (5).

Methods

We describe our experience with an endovascular-first approach to PA injuries. In three cases, we successfully re-established flow using endovascular techniques. In the fourth, it was necessary to proceed to bypass.

Results

Four patients (30-85 years; male:female 1:1) presented with injuries to the PA (two knee dislocations, 2 knee surgery). Diagnostic angiography was performed with a 4Fr ante-grade sheath. In three cases the PA occlusion was crossed and angioplastied, restoring flow. In one case, the angiogram showed a complex dissection and multilevel occlusions and it was not possible to cross the lesion. A lower limb bypass was undertaken. All patients were amputation-free at discharge.

Conclusion

These results add to the growing body of evidence that an endovascular-first approach should be considered for trauma to the PA to restore blood flow and salvage limbs.

Poster 5

Assessment of Available Information on the World Wide Web for Patients Taking Statin Therapy

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Background:

To determine the quality and educational content of statin focused sites both on the World Wide Web and YouTube videos.

Methods:

We interrogated the three most popular search engines by market shares (Google, Yahoo! and Bing) for the term "statin". The first 50 results for each search engine were assessed for quality and readability.

Website quality was independently assessed by two authors using the University of Michigan Consumer Health Web site Evaluation Checklist. Content was determined using a custom designed assessment tool. Readability was calculated using the Flesch Reading Ease score.

Videos were identified on YouTube using the term "statin" with the first 20 hits screened. Reliability was scored against the JAMA benchmark criteria (maximum score 4). Overall educational quality was assessed using the Global Quality Score (maximum score 5). A specific scoring system evaluated statin relevant content.

Results:

Website analysis: Of 150 hits, 38 unique sites were assessed. Median Michigan score was 36 (range 24-59; overall quality weak). Median FRE score was 57.5 (range 38.3-87.5; difficult text requiring above-average reading level). Interobserver agreement was good (ICC=0.968).

YouTube: 11 videos were assessed. Median JAMA score was 2 (range 1-3). Median GQS score was 2.5 (Range 1-5 – generally poor quality). Evaluation of content score was 2.5 (Range 1-5). Overall ICC scores 0.746 – 0.946.

Conclusions:

The current quality and readability of online patient information for statins is poor. Clinicians should be aware of the limitations of the available patient information and new content designed to be more patient friendly.

Poster 6

Long-term effects of acute kidney injury in patients undergoing Endovascular treatment for peripheral arterial disease

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Background:

To examine the association between acute kidney injury (AKI) severity and duration with cardiovascular mortality.

Methods:

Retrospective analysis of data obtained between 2014 and 2019 from three vascular centres. Primary outcomes were the hazard ratios for cardiovascular death (AKI patients vs no AKI; no AKI vs stage 1 AKI vs stage 3 AKI; and no AKI vs transient AKI vs established AKI). Propensity score matched analysis was used to establish whether developing AKI, in patients with similar demographics and procedural characteristics, is associated with a higher risk of cardiovascular death.

Results:

Overall 239 pts developed AKI, and this was associated with an increased risk of cardiovascular mortality (Hazard Risk (HR): 4.3, 95% Confidence Intervals (CI): 2.1 – 6.8, pairwise comparison p – value =0.006). This was dependent severity AKI severity (HR 5.4, 95% CI: 2.4 – 7.3, pairwise comparison p-value=0.01) and duration (HR 4.2, 95% CI: 2.3 – 6.2, pairwise comparison p-value=0.04). Propensity score matched analysis showed that even when patients are matched for comorbidity and procedural characteristics, AKI confers an increased risk of mortality (p = 0.04).

Conclusions:

Acute kidney injury is common after femoropopliteal endovascular therapy. It confers an increased risk of long-term cardiovascular mortality, which is still present when renal decline is transient, and highest for patients with established decline in renal function.

Poster 7

Current evidence does not support the concept of smoking impacting durability of peripheral angioplasty and stenting: A meta-analysis

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Background

Smoking is a major risk factor in the development of peripheral arterial disease (PAD) and its impact on durability of arterial bypasses has been demonstrated in previous literature. The impact of continued smoking on peripheral angioplasty is less clear. We sought to estimate this effect by performing a systematic review and meta-analysis.

Methods

A literature search was performed of studies including patients whom had undergone peripheral angioplasty or stenting for management of PAD. Studies which looked specifically at the influence of smoking on primary patency were also included. Demographic, anatomical and outcome data was recorded including primary patency, re-intervention and adverse limb events. Meta-analysis was performed.

Results

30 eligible studies were included totalling 8310 patients and consisting of 10 prospective, 19 retrospective and 1 randomised trials. Mean follow up ranged from 6 to 120 months. Smoking had no significant effect on overall primary patency OR 1.18 (0.73-1.88; P=0.48). This lack of effect persisted even after analysis by length of follow up. Smoking reduced primary patency in the fem-pop region OR 2.00 (1.02-3.96; P=0.04) but not in the aorto-iliac. Smoking was however associated with higher rates of re-intervention (HR 1.34 and 2.70) and adverse limb events (HR 1.40 and 2.03) respectively.

Conclusions

This contemporary meta-analysis demonstrates that smoking may increase rates of re-intervention and adverse limb events, however its effect on durability of peripheral interventions is less clear. More distal arterial segments may be more at risk from continued smoking than proximal segments.