

cost and acceptable success rate, so that all group of people will be benefitted. With this background we did a study on glue embolisation of truncal varicosities. **Aim of the Study:** (1) To evaluate the success rate of adhesive embolisation using N Butyl 2 Cyanoacrylate. (2) To compare the occlusion rate with RFA. (3) To analyse the cost difference between both. **Method(s):** Study period: October 2017 to October 2018. Inclusion criteria: Incompetent SFJ with reflux into GSV. Exclusion criteria – Deep vein thrombosis. Glue embolisation of great saphenous vein (GSV) is planned atleast for thirty patients. The great saphenous vein in thigh was punctured directly with 21 G needle atleast at 7 - 10 sites with a gap of 5 cms and 0.1-0.2 ml of glue is injected at each sites. After injection, compression is done with ultrasound probe for 45 seconds at that site. The injection is started from the caudal to cranial direction. The procedure is performed without perivenous tumescence. The patients are advised to come for follow up at one week, one month and six months intervals. The Patients will be evaluated for occlusion of GSV as well as complications associated with it. The results are compared with the results of RFA of varicose veins in our institute. **Result(s):** (1) Glue embolisation occlusion rate at 6 months: 93%. (2) Comparable to RFA at 6 months gap. (3) Decrease in the cost by >300%. **Conclusion(s):** The efficacy of glue embolisation of varicose veins done with direct puncture is similar to RFA at 6 months follow up and it can be done with decreased cost (<1/4th of RFA).

#### OC4.8

### Use of Glue in Varicocele Embolization: A Single Centre Experience and Literature Review

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**Background:** The purpose of this study is to assess the patient's outcome from symptomatic varicocele treated with two methods of embolization techniques one with coils combined with sodium tetradecyl sulphate (STS) and the other technique with N-butyl-2-cyanoacrylate (Glue) in terms of immediate technical and clinical success, complications rates, procedure time, and assess any significance difference in the outcome between the 2 techniques. **Method(s):** A retrospective analysis of a consecutive series of varicocele embolization procedures performed between April 1st 2015 and July 22nd 2017 was undertaken. A total of 84 were included in our study, 41 using glue (48.8%, mean age of patients 31.98 years) and 43 using coils (51.2 %, mean age of patients 32.91 years). Demographic data, indications, complications and outcomes were compared. **Result(s):** A total of 32 procedures (38.1%) were motivated by infertility (glue = 15, coils + STS = 17), 33 (39.3%) by testicular pain (glue = 14, coils +STS = 19), and 19 (22.6%) by both (glue = 12, coils +STS = 7). Minor complications were observed in 2 cases (4.9%) in glue and in 5 cases after coil + STS embolization (11.6 %). Patients reported improvement in 65.9 % with glue sample, and 58.1% with coils + STS. Both agents showed similar success rates. The patients who were referred for testicular pain reported 89.5% improvement, while those patients referred for infertility reported 42.1 % improvement. **Conclusion(s):** Varicocele embolization is a safe and effective procedure. Embolization with glue gives a similar outcome compared with coils combined with STS.

#### OC4.9

### Early Portal Vein Thrombosis after Living Donor Liver Transplant: Interventional Radiology May be the Answer

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**Background:** Incidence of PVT is close to 4% in adult LDLT due to technical difficulties in PV reconstructions, mainly related to a shorter vessel pedicle and limited vessel graft. Most cases of PVT occur early (1 month from transplant) and the clinical presentation is severe acute liver insufficiency or graft failure. When it occurs late (more than 4 weeks) recurrence of portal hypertension is a dominant feature. Without treatment PVT is associated with poor survival. Therapeutic options for PVT range from systemic anticoagulation to interventional radiological (IR) treatment, to surgical revision to retransplantation. The IR options presented in the literature include thrombolysis, portal vein angioplasty, stent placement and shunt occlusion if present. The IR approach may be via percutaneous transhepatic (PT), via transjugular intrahepatic portosystemic shunt (TIPS) creation or transsplenic approach. **Method(s):** A total of 430 liver transplants were done at our institution between February 2017 and December 2018. Five cases of early PVT were referred to us for IR treatment. The diagnosis was initially made on colour Doppler ultrasound and findings confirmed on contrast CT. Portal vein access was taken by ultrasound guided direct percutaneous trans-hepatic approach in all but 1 case where percutaneous trans-splenic approach was taken. Urokinase (1 to 5 lac units) were used for thrombolysis, in 2 cases overnight urokinase infusion was used at 50,000 units/h. Balloon dilatation was done with a 6 mm diameter balloon. Portal flow steal by a large shunt was present in 2 cases which were closed by coils and covered stent respectively. **Result(s):** With IR treatment spontaneous portal vein flow was re-established in all but 1 patient [Table 2]. Long term follow up is available in 2 patients (7 and 9 months respectively) and they are doing well and shows excellent portal flow. The patient in whom spontaneous portal flow could not be established (s. no 3) was taken for surgical re-exploration after his liver enzymes increased remarkably next day. The surgical re-exploration revealed HAT in addition to PVT. There were areas of liver necrosis on gross inspection. Hepatic artery flow was re-established after thrombectomy. However only sluggish portal flow could be re-established. This patient expired 2 days later due to multi-organ failure. One patient (s. no. 1) had undergone surgical re-exploration for concomitant HAT and PVT one day before IR treatment. Another patient (s. no. 5) had surgical re-exploration for HAT on POD 1 and had HAT recurrence on POD 6. Hepatic artery thrombolysis was done successfully. However this patient had intracranial bleed on POD 8 likely due to thrombolysis and died of liver insufficiency and progressive neurological deterioration on POD 38. **Conclusion(s):** Evidence-based evaluation outcomes of surgical and IR techniques to manage PVT is made difficult by its low incidence, which has heretofore prevented the publication of prospective comparative trials and limited the publication of large, retrospective series. However, IR therapies promise to avoid the risks of re-do operations in select post-surgical patients, besides providing a fair idea of anatomic causes such as venous redundancy, kinking, stenosis, anastomotic size mismatch and presence of shunts. IR management may be safe in early PVT

and can often identify the anatomical cause of the PVT and corrective measures can be taken which might lead to long term improved results. However more studies with larger sample size are required to establish the safety and outcome of this approach. Our experience suggests that IR treatment is feasible and safe in early PVT in LDLT patients with good outcomes in cases where concomitant HAT is not present.

#### OC4.10

### Increasing Efficiency in the Interventional Radiology Division: Multiple Changes in Workflow from Patient Registration to Discharge

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**Background:** We aim to present our experience with measures resulting in increased workflow efficiency in our clinical practice, and to evaluate the effect of these changes on the time elapsed at each stage of the workflow process and how it impact overall workflow efficiency. **Method(s):** We implemented a set of changes at each stage of the workflow process from patient registration, pre-operative workup, procedure, post-operative care, and discharge. Average time for completion of each stage of the process was determined before and after implementing the changes. Weekly case volume (WCV), weekly mean overtime hours (WMOH) and monthly percentage of first case on time (FCOT%) were compared before and after the intervention. Patient profiles including age, sex, and BMI were tracked to account for confounding variables. Student's t-test was used to compare variables before and after intervention. F- test was used to compare variance before and after intervention. A p value of less than 0.05 was considered statistically significant. **Result(s):** No statistically significant difference was seen in the age, sex or BMI of patient population before and after intervention ( $p > 0.05$ ). There was a statistically significant 20% increase in WCV from 200 to 240, 45% decrease in WMOH from 10.8 hours to 4.9 hours and 25% increase in monthly FCOT% from 50% to 75% ( $p < 0.01$ ). **Conclusion(s):** Our workflow intervention resulted in better WCV, WMOH and FCOT%. Improved workflow efficiency is critical in the success of an interventional radiology department, and results in better patient care and overall patient satisfaction.

#### OC4.11

### Association of Concomitant Disease in the Profunda and Femoro-Popliteal Veins to Cumulative Patency and Re-Intervention Rates Following Ilio-Femoral Venous Stenting of Limbs with Postthrombotic Occlusion

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**Background:** Ilio-femoral stent patency is inferior in post-thrombotic disease compared with non-thrombotic venous obstruction. The aim of this study was to examine whether decreased inflow to the stent, caused by intraluminal obstructive disease, was associated with greater risk of re-intervention and inferior long-term patency outcomes. **Method(s):** Consecutive patients (2012-2017) receiving a nitinol venous stent for post-thrombotic disease were included for analysis. Pre-operative ultrasound was used to identify femoral vein (FV), profunda vein (PV), and/or popliteal vein (POPV) intraluminal scarring and/or residual thrombosis, and categorised into one of 3 groups: absence of disease; disease in a single inflow vessel; or disease in more than one inflow vessel. Stent patency was assessed using duplex ultrasonography post-intervention, and re-interventions performed when there was a reduction in stent diameter of  $>50\%$  or occlusion. **Result(s):** Of 164 patients treated, cumulative patency was 89% (median follow-up 2.4 yrs; range 46-308 wks). However, 70/164 (43%) patients required re-intervention to maintain patency (median number of re-interventions 2; range 1-6). The respective disease state of inflow vessels are shown in Table 1. Cumulative patency and re-intervention rates were significantly worse in patients with more than one diseased inflow vessel ( $P=0.47$ ,  $P=0.004$ , respectively). Disease in the FV+PV+POPV was associated with a higher risk of re-intervention (16/25 (64%); HR 2.76;  $P=0.009$ , 95% CI [1.29, 5.92]), and was a strong predictor of cumulative patency loss compared with patients that had no inflow vessel disease (18/25 (72%) HR 17.26;  $P=0.009$ , 95% CI [2.02, 147.07]). **Conclusion(s):** Maintaining stent patency in post-thrombotic limbs is influenced by the quality of inflow vessels. Patients with intraluminal scarring and/or residual thrombosis in the FV+PV+POPV should be counselled on their increased risk of patency loss.

#### P101

### Relative Atherosclerotic Sparing of the External Iliac Artery: Possibility of a Less Vasculopathic Arterial Graft Target

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**Background:** Calcified plaque build-up can increase the risk of subsequent vascular complications in pelvic solid organ transplantation and vascular bypass procedures. The purpose of this study was to assess the degree of atherosclerotic calcification in pelvic vessels. **Method(s):** We retrospectively reviewed the unenhanced computed tomography scans of 197 patients from August 2016 to March 2018. Using calcium-scoring software, we examined the distribution map of calcified plaques, focusing on four different arterial segments—the abdominal aorta, the common iliac artery (CIA), the EIA, and the common femoral artery (CFA)—to determine which one showed the least mural calcification. **Result(s):** A total of 197 patients (118 men, 79 women) with a mean age of  $61.19 \pm 10.8$  years were included in our study. The right EIA segment had the lowest average