cases reported with sudden death. The first line of the treatment is anticoagulants and blood thinning medications. Some neurological and cardiovascular conditions limit the efficacy of anticoagulants. Therefore, IVC filters are used as second-line treatment. In 1973, the first filter was used to replace surgical interventions to prevent thrombosis. The IVC filter has a conical shape ending with hooks to anchor it to the IVC wall. An effective filter has easy placement and can trap all thrombi to prevent new or recurrent PE without migration or perforation of IVC. IVC filter is mainly indicated when anticoagulation therapy is not effective, as in patients with trauma, hemorrhage, and other cardiac problems. However, it cannot be used in severe uncorrectable coagulopathy, prothrombotic state, and active bacteremia. IVC filters are designed with different durability, permanent, and retrievable, according to the patients' conditions. Permanent filters were mainly used in the past until retrievable filters were approved by the Food and Drug Administration (FDA) in 2003. Although retrievable filters are designed to be removed, in some cases, they become permanent due to lack of patient's compliance or poor monitoring. In Wellington Hospital, out of 5000 patients with IVC filters only 12%–45% of filters were retrieved. No local studies, in Saudi Arabia, are available. Leaving the filter longer than necessary may lead to several complications. The longer the filters are left in the body, the greater the chances that migration and malposition will occur. This tilting, or malpositioning, can result, in less common cases, in filter fracture. Failed retrieval can also be caused by a trapped clot. When more than 25% of the filter is filled with a clot, it cannot be removed. Instead, the patient is given anticoagulants for the following 1–2 months, the filter removal attempt is then repeated. Other long-term complications include IVC perforation, IVC occlusion, and developing DVT. To prevent further long-term placement complications that counter-affect the main purpose of inserting filters, the FDA urged health institutions to maximize the retrieval rates. At King Abdulaziz Medical City, the Vascular and Interventional Radiology department established a departmental form in January 1, 2015, to improve retrieval rates of IVC filters. The purpose of the study to compare retrieval rates before and after implementing the form to access its effectiveness. **Methods:** This is a case–control retrospective study of all patients who had retrievable IVC filter insertion 2 years before and after implementation of a departmental follow-up from June 2015. The departmental follow-up form includes the following information: Patient's name, age, sex, and medical record number. It also contains most responsible physician badge number and pager. IVC filter date of insertion and removal, filter type, and implementing physician name are also included. Subjects were retrospectively analyzed based on age, gender, indication, type of filter, date of filter insertion, location of insertion, date of retrieval, dwelling time, and previous attempts of retrieval. **Results:** Between June 2013 and May 2017, a total of 307 filters were inserted in 183 males (59.61%) and 124 females (40.39%) with mean age of 59 (SD 17.24). Of these filters, 296 (96.42%) were placed in an infrarenal location and 11 (3.58%) were placed as suprarenal filters. The types of the filters were as follows: 167 Optease (54.40%), 33 Option Elite (10.75%), 78 Denali (25.41%), 2 Capturex (0.65%), and 27 Celect (8.79%). A total of 148 (48.21%) filters were inserted before establishing the follow-up form, and 159 (51.79%) were inserted after the form. A total of 53 (35.81%) of those filters inserted before the form were retrieved, while 61 filters (38.36%) of those inserted after the form were. The mean dwelling time of retrieved filters before the form was 32 days and 48 days for the 2 years after the form implementation, with a standard deviation

of 49.42. This increase was explained by the use of filters with longer dwelling time. Filter retrieval was successful in 110 patients (96.49%) from the first attempt and four patients (3.51%) required more than one attempt **Conclusion:** The departmental follow-up of patients who undergo IVC filters results in improvement of the retrievability rates.

OC405

Pharmacomechanical Thrombolysis with Liberal Use of Stenting Reduced Postthrombotic Syndrome in Iliofemoral Deep Vein Thrombosis: Single-Center Experience

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Background: Postthrombotic syndrome is common after deep vein thrombosis despite anticoagulant therapy. The symptoms range between leg heaviness and itching to venous ulcer and major disability. This syndrome is more likely to develop with more severe degree of deep vein thrombosis. Pharmacomechanical thrombolysis for treatment of deep vein thrombosis is act to rapidly remove thrombus and hence reduce the severity of deep vein thrombosis. Hence, it may reduce the incidence of postthrombotic syndrome. This study describes a single-center experience in the treatment of deep vein thrombosis to see whether pharmacomechanical thrombolysis for proximal iliofemoral deep vein thrombosis would reduce the incidence of postthrombotic syndrome compared to the historical data for patient receiving anticoagulation only. **Methods:** A retrospective data collection for patients underwent pharmacomechanical thrombolysis were performed for iliofemoral Deep vein thrombosis in a single center (Alrayyan Hospital, Riyadh). A demographic-, clinical-, procedural-, and postprocedural-related data were collected including 24-month incidence of postthrombotic syndrome were collected. A comparison of postthrombotic syndrome incidence for iliofemoral deep vein thrombosis using pharmacomechanical thrombolysis with liberal use of stenting compared to anticoagulation alone using historical data. **Results:** Fourteen patients underwent pharmacomechanical thrombolysis to treat iliofemoral deep vein thrombosis between May 2015 and July 2017. The average age is 39 years of age (22–67 years of age), eleven females and three males. Eight out of fourteen cases were identified to be May-Thurner syndrome either by computed tomography or intravascular ultrasound. Two patients were postpartum deep vein thrombosis. Eleven patients had left-sided iliofemoral deep vein thrombosis. All patient underwent 24 h thrombolysis, but two patients required 48 h thrombolysis as per a protocol for none of the patients developed major bleeding. Eleven patients underwent stenting, and ten patients had retrievable inferior vena cava filter, who are all retrieved within 1 month, except one retrieved after 6 months. Twelve patients were adherent to compression stocking with instructions of 8–12 h daily use for 2 years' duration. Among the 14-patient cohort, only one patient (7%) developed postthrombotic syndrome. The historical and contemporary incidence of postthrombotic Syndrome is 50% with the use of anticoagulation for all comers of deep vein thrombosis. **Conclusion:** This is a single-center experience of treatment of Iliofemoral deep thrombosis with liberal use of venous stenting. This study reports the incidence of postthrombotic syndrome is

reduced markedly to 7% as compared to the use of anticoagulation alone in a contemporary data is 50%.

OC406

Variations in Sapheno-Popliteal Junction Anatomy

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Background: Varicose veins are also common in short saphenous vein territory which has most variable anatomy in lower extremity. Variations in the veins of the lower limb are very common. This may be due to the anomalous involvement of the main trunks of the veins or their tributaries alone. Detailed knowledge regarding the anatomical variations such as reduplication of vein and unusual course and termination of the vein is a prerequisite in the diagnosis and management of vascular diseases. **Methods:** Included in the study were 626 Limbs. They were referred to radiology department by physicians, surgeons, and orthopedicians for investigation of clinically detected superficial varicosities and suspected chronic venous disease. The examination includes history, clinical examination, and detailed duplex scanning of lower limb veins. Study data were based on the detailed examination and reporting of anatomic variation of termination of the short saphenous vein (SSV). Duplex scanning of lower limb veins was performed with the patient standing on low stool. Body weight was on placed on a contralateral limb which enabled examined side to be relaxed, slightly flexed, and externally rotated position. The popliteal fossa and calf venous system were evaluated with particular attention to termination of SSV. A real time B-mode zoom facility enabled optimal anatomic delineation of the SSV and Giacomini vein. The termination of SSV is variable and three patterns have been defined. **Results:** Following important observations was made: 410 out of 620 (65%) lower extremities shows the prevalence of Giacomini vein. In 45 out of 620 (7.2%) lower extremities, the SSV terminated into popliteal vein with further extension into thigh. In 171 out of 620 (27%) lower extremities, the SSV terminated into popliteal vein. **Conclusion:** A proper knowledge about the anatomy of the short saphenous vein and its communications with other veins and mode of termination of short saphenous vein is mandatory for a safe and successful intervention. The variant termination of the small saphenous vein may contribute to recurrent varicose veins in this territory; this aspect generally makes the subject of interest in the view of varicose vein operations.

OC407

Treatment of Incompetent Perforators in Recurrent Venous Insufficiency with Adhesive Embolization and Sclerotherapy

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Background: Recurrent lower limb venous insufficiency is often a challenge in clinical practice and is most commonly due to incompetent perforators. Many of these patients do not have

adequate symptom relief with compression and require some form of treatment for incompetent perforator interruption. The various treatment methods have been tried with different efficiencies. To evaluate the feasibility, efficiency, and safety of an outpatient combined cyanoacrylate adhesion-sodium tetradecyl sulfate sclerotherapy for the treatment of patients with symptoms of persistent or recurrent lower limb venous insufficiency secondary to incompetent perforators. **Methods:** Eighty-three limbs of 69 patients with symptoms of persistent or recurrent lower limb venous insufficiency secondary to incompetent perforators were treated with cyanoacrylate embolization of incompetent perforators and sclerotherapy of dilated collateral veins (surface branch varicose veins). Technical success, procedural pain, perforator occlusion, venous occlusion, clinical improvement, and ulcer healing were assessed. The follow-up was done 3- and 6-month postprocedure. **Results:** The procedure could be successfully performed in all patients. One hundred and ninety-one perforators were treated in total. Perforator and varicose veins occlusion rate was 100%. Deep venous extension of cyanoacrylate occurred in 4 (4.8%) patients, with no adverse clinical outcome. Venous clinical severity score improved from a baseline of 8.18 ± 3.60 – 4.30 ± 2.48 on 3-month follow-up and 2.42 ± 1.52 on 6-month follow-up ($P < 0.0001$). All ulcers showed complete healing within 3 months. Significant prolonged thrombophlebitis occurred in 38.5% of limbs. **Conclusion:** Combined cyanoacrylate adhesion and setrol sclerotherapy is technically easy, has a lot of advantages including being an outpatient procedure and highly efficacious but with a guarded safety profile.

OC408

Adhesive Embolization: Can it Replace Thermal Ablation for Truncal Varicosities?

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Background: Among the endovascular treatment, thermal ablation is one of the effective and acceptable methods of treatment. However, in a developing country like India, cost of the procedure is one of the main factors which determines the nature and type of the treatment. If a procedure can be done with one-fourth of the cost of thermal ablation for varicose veins with an equivalent result, it is beneficial to the patient. **Methods:** A prospective study is done to evaluate the occlusion and recanalization rate of cyanoacrylate embolization of trunk with foam sclerotherapy of varicosities and asses the cost benefits compared to the radiofrequency ablation of trunks with foam sclerotherapy of varicosities. Twenty patients in each group are randomly selected and underwent the procedure in the past 1 year. The patients are followed at least for 6 months (1 week, 1 month, 3 months, and 6 months), and the results are compared. **Results:** We are able to achieve technical success in 100% of patients. The occlusion rate for trunks is around 94% at 6 months for glue embolization compared to 94% for RF ablation at 6 months. There were no case with significant deep vein thrombosis in both groups. There is a significant improvement in venous clinical severity score with an ulcer healing rate more than 95% is noted in both groups. The cost of the Glue embolisation is cheap (at least one-fourth) compared to thermal ablation. **Conclusion:** Adhesive embolization