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positive association was highlighted with distal landing in zone 4 (OR 0.2; \( p = 0.036 \)) and GEN4 (OR 0.1; \( p = 0.012 \)). Overall survival was 75.3%, 44.4%, 27.2%, and 17.6% at one, five, 10, and 15 years, respectively. Survival distinguished as non-related versus aortic related was 86.7% versus 23.5%, 52.7% versus 9.8%, 32.9% versus 2.0%, and 21.2% versus 0% at one, five, 10, and 15 years, respectively (\( p < 0.000; \) Fig. 2).

**Conclusion:** Potentially, half of patients could develop an endoleak at 15 years, highlighting the importance of lifelong radiological follow-up after thoracic stent grafting. Newer stent graft generation demonstrated better long term endoleak results, despite an increasing indication of more challenging aortic morphology, as well as to extensive pathology (arch and/or thoraco-abdominal), during the 25 years analysed. This real world TEVAR study over a considerable time span yielded the conclusion that the older generation should be followed up strictly. Likewise, landing in the most extreme zones (e.g., proximally in zone 1 and distally in zone 5) required special attention owing to their higher tendency to leak. The efficacy of TEVAR was confirmed in preventing long term aortic mortality, with most deaths occurring within 30 days.

**Abstracts**

**P-172**

**Microcirculatory Predictors of Thrombosis in Patients After COVID-19**

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**Introduction:** The lack of a history of the course of a new coronavirus infection and the lack of data from randomised trials makes it difficult to choose the right treatment tactics and prescribe adequate prophylaxis in patients who have suffered from COVID-19.
COVID-19. Comorbid patients with cardiovascular diseases and endothelial dysfunction have a high risk of a severe course of COVID-19 and subsequent thrombotic complications, which manifest clinically as cardiomyopathy; venous thromboembolism (deep vein thrombosis and pulmonary embolism); pulmonary thrombosis in situ; stroke; arterial thrombangiitis; rarely, arterial peripheral thrombosis and microvascular thrombosis, in the lungs, liver, kidneys, brain, etc.; and mild disseminated intravascular coagulation syndrome. The role of endothelial dysfunction in the development of severe complications is underestimated. In the pathogenesis of COVID-19, the defeat of the microcirculatory bed plays a crucial role. The SARS-CoV-2 virus causes associated endotheliitis damage to the endothelium due to virus entry and cytokine storm. Endotheliitis leads to the release of tissue factor, which leads to the formation of an excess of thrombin and fibrin; the body tries to cover the virus with these and prevent its spread, which entails negative side effect such as thrombosis.

**Methods:** Sixty-six patients who had COVID-19 were examined (42 women and 24 men; mean age 48 years [range 20 – 80 years]). Patients complained of a feeling of paraesthesia, mainly in the lower extremities, a feeling of heaviness, stiffness in the popliteal region, an increased vascular pattern on the entire surface of the skin, a burning sensation in all vessels, and a feeling of weakness. Ultrasound colour duplex scanning showed no signs of thrombosis in the large vessels. Using a high frequency ultrasound Doppler and a 25 MHz sensor, the nailbed of the first finger of the upper limb was examined. The microcirculatory images were analysed by the shape and spectrum of the curves. Twenty patients received prophylaxis with rivaroxaban 10 mg daily (group 1) and 46 patients did not (group 2). The control examination was carried out four weeks after the start of therapy: sulodexide one capsule twice daily. The coagulogram parameters were also studied.

**Results:** A depletion in spectral characteristics was seen in patients after COVID-19 disease, in comparison to microcirculatory images recorded in healthy individuals. Predominantly, the red part of the spectrum was recorded in patients after COVID-19, the lighter part of the spectrum was not recorded. Group 1 patients had higher amplitude parameters than group 2, but they also registered a depletion in spectral characteristics. Soluble fibrin monomer complexes were increased 4 – 5 times, D-dimer 2 – 2.5 times, and antithrombin III 1.5 times. The international normalised ratio, activated partial thromboplastin time, fibrinogen, prothrombin according to Quick, prothrombin time, clotting time, and bleeding time were within the reference intervals both before and after treatment. Upon repeat examination four weeks after the course of sulodexide therapy, the spectral characteristics were normalised, and the coagulogram parameters were also normalised.

**Conclusion:** The red part of the spectrum, according to the Doppler criteria, corresponds to the fastest particles moving in the middle of the stream. The lighter part of the spectrum corresponds to particles moving more slowly. The reduction in spectral characteristics in patients after COVID-19 disease corresponds to parietal stasis and readiness for thrombosis, which was confirmed by the coagulogram data. Examination of the nailbed using high frequency ultrasound Doppler in patients who have COVID-19 allows the identification of stasis of the parietal blood flow, which corresponds to a prethrombotic state. The prescription of sulodexide allows for an improvement in the condition of patients and normalisation of microcirculation indicators.

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**P-175**

**Outcome of Lower Limb Ischaemia Following Traumatic Lesions of the Popliteal Artery: A Single Centre Experience**

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**Introduction:** Traumatic injury of the popliteal artery is accompanied by a high risk of limb loss. The aim of this study was to evaluate outcomes after reconstruction of the popliteal artery and to evaluate the influence of trauma severity and localisation to defined study endpoints.

**Methods:** This was a retrospective study of all patients treated for traumatic lesions of the popliteal artery at our institution since January 1990. Study endpoints were rates of peri-operative death (30 day mortality); limb salvage rates; and rates of vascular and non-vascular re-interventions. MESS (Mangled Extremity Severity Score) was used for trauma severity classification (MESS > 7 is associated with increased risk of amputation) and trauma localisations were classified into supragenual and infragenual lesions, to determine the influence of these parameters on patient outcome.

**Results:** Fifty patients (38 males; median age 35.7 years [inter-quartile range 21.8 – 54.4 years]) with a majority of blunt injuries (47 patients [94%]) were included in the analysis. In 31 patients (62%), the popliteal artery was dissected with subsequent occlusion, whereas complete transaction was observed in 19 patients (38%). In 36 patients (72%) the popliteal lesion was located at the supragenual level. Surgical procedures for arterial reconstructions included 47 interposition grafts (46 venous, one polytetrafluoroethylene), two primary anastomoses, and one venous patch angioplasty. Fasciotomy was performed in 39 (78%) patients. In five patients (10%) vascular re-interventions with thrombectomy and revision of the arterial reconstruction was necessary. None of the patients died within 30 days and the limb salvage rate was 88% (44 patients). A MESS score > 7 was recorded in 28 patients (56%) with higher rates of complete transections of the popliteal artery (14 patients [50%]; p < .05) and higher rates of performed fasciotomies (26 patients [93%]; p < .01). Limb salvage rates were not lower within this group [24 patients [86%]; p = .58]. Interestingly, in patients with infragenual involvement of arterial lesions and subsequent need of crural anastomosis of vascular grafts, primary graft patency was 100% with limb salvage rates of 72%, whereas in supragenual lesions, the vascular re-intervention rate was 14% with limb salvage rates of 92% (p = .21).

**Conclusions:** Emergency repair of popliteal artery injuries is associated with considerable risk of limb loss. With increased trauma severity, fasciotomy is performed with a higher percentage without having an impact on limb salvage rates. Supragenual...