

**Vascular Access management by nephrologists in Japan: –Endovascular approach to vascular access thrombosis–**

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In Japan, approximately 325,000 patients received chronic dialysis till the end of the fiscal year 2015, and the mean age of patients with newly initiated dialysis and that of patients already on dialysis at the end of the year were 69.2 and 67.9 years, respectively, with a trend towards an increase in age with time. Diabetic nephropathy is the most common primary underlying disease in incident dialysis patients, with an incidence rate of 43.7%. However, the incidence has almost reached a peak. On the other hand, nephrosclerosis is an emerging underlying disease with an incidence rate of 14.2%. The management of 97% patients undergoing hemodialysis, despite an aging patient population and an increased likelihood of vascular function deterioration caused by underlying diseases such as diabetes and hypertension, in Japan is considered the best in the world and is also a characteristic of Japan. In other words, vascular access (VA) management is of great significance in daily dialysis practice. In fact, physicians make every effort for the early detection of VA dysfunction through inspection, palpation, and auscultation at the beginning and end of dialysis. In recent years, the additional use of ultrasonography for surveillance/monitoring has enabled the objective assessment of VA function, allowing physicians to determine the need for therapeutic intervention for stenotic lesions before the development of thrombotic occlusion. However, approximately 25% patients with VA dysfunction have presented at our hospital with thrombotic occlusion, and 83% of these patients have undergone surgical thrombectomy, and 16.7% have received percutaneous intervention, including percutaneous thrombolysis in 6.3% and percutaneous thrombus aspiration in 10.4%.

At our hospital, surgeons work 6 days per week, but it is unfortunate that percutaneous treatment is provided only for 2 days per week, suggesting that this working style may lead to surgical thrombectomy of the majority of occlusive lesions. However, a review of thrombectomy procedures revealed the absence of differences in clinical outcomes between surgical thrombectomy and transcatheter thrombus aspiration or thrombolysis, indicating that procedures for stenotic lesions causing occlusion (culprit lesions) determine the clinical outcome. In addition, a review of treatment procedures for stenoses showed that the patency rate increased in the following order: bougie dilatation,

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balloon dilatation, and surgical reconstruction/repair. Therefore, besides surgical reconstruction/repair of culprit lesions, surgical or percutaneous thrombectomy plus balloon dilatation is considered the first-line procedure for thrombotic occlusion. This highlights the requirement for a therapeutic environment that allows these treatments to be provided on a daily basis. Considering these factors, we aim to establish a new access center in this fiscal year. This center will provide an institutional environment wherein surgical procedures and percutaneous procedures can be performed on the same floor on a daily basis.