sought to compare the thrombus composition between proximal vs distal occlusion.

Materials and Methods We performed single-center, retrospective review of prospectively collected thrombi from consecutive AIS-LVO patients. Patients were categorized into two groups (proximal vs distal) based on the site of occlusion. Distal occlusion was defined as any occlusion involving any segment of the anterior cerebral artery (ACA), posterior cerebral artery, or occlusion at or distal to the middle cerebral artery (MCA). Two groups were formed based on the site of occlusion: (1) proximal and (2) distal occlusions. Thrombi were histologically analyzed using Martius Scarlet Blue (MSB) and immunohistochemistry staining for von Willebrand Factor (vWF), CD42b (platelet marker), anti-citrullinated H3 (H3Cit; NETs [neutral phosphatase extravascular traps] marker). Extracted thrombus area (ETA) was measured on gross photos. vWF/ CD42b thrombus-type were defined poor (first tertile), Mix (second tertile), and rich (third tertile). Additionally, we calculated the area of each component by multiplying the component percent by ETA. We used inferential statistics to interpret the data.

Results A total of 138 thrombi were included for this study. The overall average percentage of red blood cells (RBC), white blood cells (WBC), fibrin, platelet/others, H3Cit, CD42b, and vWF components in thrombi was 46.37%, 3.27%, 25.62%, 24.31%, 23.29%, 24.15%, and 23.79%, respectively. Distal occlusions had similar component compositions compared to proximal occlusions in terms of RBC (p = 0.15), WBC (p = 0.78), Fibrin (p = 0.57), Platelets/others (p = 0.13), vWF (p = 0.78), CD42b (p = 0.64), and H3Cit (p = 0.52) (Figure 1). Additionally, vWF/CD42b thrombus-type was not different between proximal and distal occlusions (p = 0.87 for vWF thrombus-type; p = 0.1 for CD42b thrombus-type). ETA was significantly different between two groups. Area of component was significant for RBC and PLT/others (p values 0.03 and 0.04, respectively).

Conclusion We found that proximal and distal occlusions have mostly similar thrombus compositions however the area of thrombus was different with two major components showing difference as well.

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