Muller-Weiss Disease: The Survivorship of Conservative Treatment to 5-year Follow-up

Thos Harnroongroj, MD, Bavornrit Chuckpaiwong, MD

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Introduction/Purpose: Numerous surgical treatments for Muller-Weiss Disease(MWD) have been reported. However, up to presence, there is no study about the natural history of the conservative treatment in MWD. Our objective is to provide the survival analysis of the conservative treatment in MWD to 5-year follow up and to identify the factors that correlated to the failure of conservative treatment.

Methods: This retrospective cohort review examined 32 MWD patients, age > 18 and at least Maceira's stage 3, received conservative treatment with follow-up period to 5 years. Demographic data; pretreatment visual analogue scale(VAS) for pain on walking; foot and ankle outcome scores(FAOS); and radiographs were reviewed. A survival analysis of successful conservative treatment was done using Kaplan-Meier Curve. The "starting-point" was the time started conservative treatment. The "end-point" was the time converted to surgery. "Failure of conservative treatment" was defined as conversion to surgery due to significant pain and disability within 5-Year follow up. Patients were divided into "Successful conservative group"(A) and "Conversion to surgery group"(B). The comparison of variables between 2 groups were done to identify the factor correlated to failure of conservative treatment.

Results: Mean age was 57.5±10.4 years. Average body mass index was 24.3±3.4. According to survival analysis, mean follow up period was 43.1±21.0 months . Fourteen patients(43.75%) required subsequent conversion to surgery. Survivorship of conservative treatment was 56.3%(95%CI, 47.5- 65.1) with mean survival time of 43.1 months(95%CI, 35.9- 50.3). VAS of pain on walking, FAOS in subscale of pain and quality of life(QoL) were 6.2±2.5, 58.1±24.7 and 52.8±16.6, for group A; 7.9±1.6, 33.5±16.6 and 28.9±19.0, for group B. There were significant worse of both clinical scores in group B compared to A($p<0.05$). The radiographic anteroposterior Meary angle in group A and B were abducted 4.8±12.6 and 13.7±10.0. The statistical analysis showed significant more midfoot abduction in group B than A, hazard ratio 1.056(95% CI,1.003-1.111, $p=0.04$).

Conclusion: Survivorship of conservative treatment in MWD is only 56.3 % at 5-year follow up. The failure of conservative treatment associates with degree increment of midfoot abduction.

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