PURPOSE: To evaluate corneal parameters of patients with ankylosing spondylitis (AS) by Scheimpflug imaging and also to clarify the associations between disease severity and clinical status of AS and corneal parameters.

METHODS: Fifty-seven patients with AS and 57 healthy subjects were included in this cross-sectional study. All participants underwent a detailed ophthalmological evaluation. Corneal parameters were measured by Pentacam. In addition, Schirmer test, tear break-up time (TBUT), corneal fluorescein staining, and Ocular Surface Disease Index (OSDI) scores were evaluated. Duration of disease and scores of Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) and Ankylosing Spondylitis Quality of Life scale (ASQoL) of the patients were recorded. The laboratory evaluation consisted of human leukocyte antigen (HLA)-B27, erythrocyte sedimentation rate (ESR), and C-reactive protein (CRP).

RESULTS: Corneal parameters were significantly different between patients with AS and healthy controls. The mean central corneal thickness (538 ± 26 µm versus 569 ± 27 µm, p < 0.001) and the mean corneal volume (59.8 ± 3.33 mm³ versus 62.3 ± 3.40 mm³, p < 0.001) were reduced significantly in AS patients compared to those in healthy controls. The values of TBUT and Schirmer test scores were significantly lower in AS patients than in controls. Also, corneal fluorescein staining and OSDI scores were higher in AS patients than in controls. Factors related to the corneal parameters were dry eye tests (TBUT, Schirmer test, corneal fluorescein staining), OSDI score, and CRP (p < 0.05 for all).

CONCLUSION: The AS patients have thinner corneas compared to control subjects, which may be affected by tear disfunction and inflammatory processes.