Supplement 1. Logistic regression model for predicting osteoporosis.

To evaluate the potential of Pauwels angle as an independent predictor of osteoporosis, a multivariate logistic regression model was constructed. The dependent variable was the presence of osteoporosis. Independent variables included Pauwels angle, sex, age, height, body weight, body mass index, American Society of Anesthesiologists score, Charlson Comorbidity Index score, smoking status, alcohol use, and preinjury walking ability. A stepwise selection method was used to identify statistically significant predictors. Model performance was assessed using the area under the receiver operating characteristic curve (AUC) for discrimination and calibration plots incorporating apparent and bias-corrected curves. Internal validation was performed with 1,000 bootstrap resamples. Bias-corrected AUC was 0.841, which closely aligned with the apparent AUC of 0.839, indicating good internal validity and model generalizability. A nomogram was developed to visually represent the final predictive model. Statistical analysis, nomogram construction, and calibration curve generation were performed using R software ver. 4.1.0 (The R Project for Statistical Computing). The statistical significance was set at $P<0.05$.