



Supplementary Fig. 1. Representative case for UIV screw pullout without TP hook and non-pullout with TP hook in mid-range pedicle HU group ($156.03 \leq \text{UIV pedicle HU} < 243.43$). A : The immediate post-operative X-ray of a patient without TP hook, the patient is 70-years-old female who underwent spinal deformity correction surgery. In pre-operative evaluation, UIV HU pedicle value was 182.3, BMI was 30.6 and BMD was -2.5. B : After 1 year of follow-up, UIV screw was pulled out. C : The immediate post-operative X-ray of a patient with TP hook, the patient is 72-years-old female who underwent spinal deformity correction surgery. In pre-operative evaluation, UIV HU pedicle value was 176.2, BMI was 22.6 and BMD was -2.6. D : After 1 year of follow-up, UIV screw was not pulled out. UIV : upper instrumented vertebra, TP : transverse process, HU : Hounsfield unit, BMI : body mass index, BMD : bone mineral density.