

Table S3: The reported clinical outcomes in case reports and case series

Study	Instrumentation	Time to implant removal	Pre-removal	Segmental Motion Angle	Post-removal Pain	Post-removal Kyphosis Deformity	Removal Complications	Post-removal Follow-up
Vanichkachorn et al. ^[30] 1997	Short segment fixation with fusion	18 months	Symptomatic (pedicle screw was broken)	—	—	—	Inadvertent screw migration into the retroperitoneal space	—
Waelchli et al. ^[31] 2002	Short segment fixation with fusion	18 months	Symptomatic (local discomfort presumably due to mechanical irritation)	—	Persistent severe back pain	Kyphosis deformity of 28° on POD 3	Acute T12 compression fracture	—
	Short segment fixation with fusion	12 months	Symptomatic (mild occasional back pain due to putative local irritation of the implant)	—	Increased back pain than preoperative	Kyphosis deformity of 22°	Acute L1 compression fracture	—
Cappucciet al. ^[32] 2015	Short segment fixation without fusion	9 months	Symptomatic (local pain, presumably due to mechanical irritation)	—	Completely pain-free 1 year later	No further progression of kyphosis deformity on POD 2	Acute fracture of the superior plate on L1	12 months
Takeda et al. ^[33] 2022	Short segment fixation with fusion and converted to long segment fixation on POD 22	21 months	Asymptomatic	—	—	Obvious loss of lordosis was observed, and local kyphosis angle increased from 28° to 40°	—	27 months
Kim et al. ^[34] 2008	Long segment fixation with fusion	15 (range 11-24) months	Symptomatic (recurrent or persistent back pain)	—	Significant pain relief (pain score from 6.4 to 2.6)	5.9° of sagittal correction loss	No major complications	18 (range 12-25) months
Wang et al. ^[35] 2008	Short segment fixation with fusion	12.5 (range 10–42) months	Asymptomatic (only 2 of 27 patients occasionally need analgesic)	—	—	11.5°±5.4° (2°~22°) of sagittal correction loss	—	2.7 (range 2-4.5) years
Toyone et al. ^[36] 2013	Short segment fixation without fusion	12 months	Asymptomatic (no failures of posterior instrumentation)	—	—	—	Three reported occasional minimal pain (score 2), and 1 reported moderate pain	>10 years
Axelsson et al. ^[37]	3 Short/4 Long	18 months	Symptomatic (implant-related)	Improved	1 patient residual pain,	1 patient progressive	1 patient the threaded parts	3 months

2016	segment fixation with fusion	back pain)	1 patient unchanged or worse pain	kyphosis deformity 35° and 20° scoliosis; 2 patients had a minor kyphosis of <20°	of the screws were left
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Abbreviations: POD, Postoperative day; —, Not Reported.