

Online Table S2: Study characteristics. Quality was assessed by the McMaster criteria.

Study	Country	Design	N	Period	Outcome measurements	2D or 3D	Quality
Aibinder et al. 2018 (Aibinder et al., 2018)	NS	Case control	11	NS	ROM, VAS	2D	57%
Andreasson et al. 2020 (Andreasson et al., 2020a)	Sweden	Case study	37	2007 – 2014	PROMs, ROM, complications	2D	75%
Andreasson et al. 2020 (Andreasson et al., 2020b)	Sweden	RCT	38	2014–2018	PROMs, ROM, complications	2D	94%
Athlani et al. 2020 (Athlani et al., 2020)	France	Cohort study	16	2016 – 2019	PROMs, VAS, complications	3D	67%
Bauer et al. 2017 (Bauer et al., 2017)	Switzerland	Case control study	31 2D 25 3D	2003 – 2015	ROM, complications	Both	71%
Bhatia et al. 2022 (Bhatia et al., 2022)	India	Cohort study	15	NS	PROMs, ROM, VAS, complications	2D	58%
Bilgin et al. 2012 (Bilgin and Armangil, 2012)	Turkey	Case study	11	2002 – 2009	Complications	2D	58%
Buijze et al. 2012 (Buijze et al., 2012)	NS	Case study	18	1998 – 2009	PROMs, ROM, VAS, complications	2D	67%
Buijze et al. 2018 (Buijze et al., 2018)	USA & Europe	RCT	17 2D 20 3D	2010 – 2015	PROMs, ROM, VAS, complications	Both	100%
Capo et al. 2010 (Capo et al., 2010)	USA	Case study	13	2004 – 2007	PROMs, ROM, complications	2D	67%
Cha et al. 2021 (Cha et al., 2021)	South-Korea	Case study	13	2000 – 2018	PROMs, VAS, complications	2D	75%
Delclaux et al. 2016 (Delclaux et al., 2016)	France	Case study	12	2005 – 2012	PROMs, ROM, VAS, complications	2D	42%
De Oliveira et al. 2012 (de Oliveira et al., 2012)	Brazil	Case study	20	2002 – 2009	ROM, VAS, complications	2D	50%
Dobbe et al. 2021 (Dobbe et al., 2021)	The Netherlands	Cohort study	10	2017 – 2019	VAS, complications	3D	83%

Estermann et al. 2022 (Estermann et al., 2022)	Switzerland	Case study	14	2012 – 2020	PROMs, ROM, VAS, complications	3D	67%
Elmi et al. 2014 (Elmi et al., 2014)	Iran	Case study	14	2005 – 2011	ROM, VAS, complications	2D	42%
Fok et al. 2015 (Fok et al., 2015)	Switzerland	Case study	12	2003 – 2011	ROM, complications	2D	33%
Gaspar et al. 2017 (Gaspar et al., 2017)	NS	Case study	39	2008 – 2014	PROMs, VAS, complications	2D	67%
Gradl et al. 2013 (Gradl et al., 2013)	NS	Case study	18	1999 - 2007	PROMs, VAS, complications	2D	67%
Haghverdian et al. 2019 (Haghverdian et al., 2019)	USA	Case study	60	2007 – 2015	Complications	2D	92%
Hsieh et al. 2010 (Hsieh et al., 2010)	China	Case study	12	2002 – 2007	PROMs	2D	50%
Huang et al. 2019 (Huang et al., 2019)	Taiwan	Case study	10	2014 – 2016	PROMs, VAS, complications	2D	42%
Izmalkov et al. 2022 (Izmalkov et al., 2022)	Russia	Case study	32	2008 – 2018	PROMs, VAS, complications	2D	83%
Kilic et al. 2011 (Kiliç et al., 2011)	Turkey	Cohort study	17	2005 – 2009	PROMs, ROM, complications	2D	92%
Konul et al. 2012 (Konul and Krimmer, 2012)	NS	Case study	19	2005 – 2008	PROMs, ROM	2D	92%
Lee et al. 2022 (Lee et al., 2022)	South-Korea	Case study	22	2006 – 2018	PROMs, complications	2D	83%
Lozano et al. 2010 (Lozano-Calderón et al., 2010)	The Netherlands & USA	Case study	22	1980 – 2000	PROMs, ROM	2D	100%
Mahmoud et al. 2012 (Mahmoud et al., 2012)	Egypt	Cohort study	19	2004 – 2009	PROMs, ROM, VAS, complications	2D	83%
Michielsen et al. 2018 (Michielsen et al., 2018)	Belgium	Cohort study	30	2009 – 2014	PROMs, ROM, VAS, complications	3D	50%

Miyake et al. 2011 (Miyake et al., 2011)	Japan	Case study	10	2008 – 2009	ROM, complications	3D	75%
Miyake et al. 2012 (Miyake et al., 2012)	Japan	Cohort study	20; 13 ≥ 16y	2002 – 2009	ROM, complications	3D	58%
Mulders et al. 2017 (Mulders et al., 2017)	The Netherlands	Case study	48	2009 – 2016	PROMs, ROM, VAS, complications	2D	83%
Oka et al. 2017 (Oka et al., 2018)	Japan	Case study	28	2003 – 2013	Complications	3D	92%
Oka et al. 2019 (Oka et al., 2019)	Japan	Cohort study	16; 11 forearm	2015 – 2017	PROMs, ROM, VAS, complications	3D	83%
Opel et al. 2013 (Opel et al., 2014)	UK	Case study	20	NS	PROMs, ROM, complications	2D	58%
Ozasa et al. 2013 (Ozasa et al., 2013)	Japan	Case study	19	2000 – 2010	PROMs	2D	83%
Pace et al. 2021 (Pace et al., 2021)	Italy	Case study	32	NS	PROMs, ROM, VAS, complications	2D	83%
Park et al. 2012 (Park et al., 2012)	South-Korea	Case study	14	2001 – 2008	ROM, VAS, complications	2D	83%
Pecache et al. 2021 (Pecache and Calleja, 2020)	Philippines	Case study	13	NS	PROMs	2D	42%
Pillukat et al. 2013 (Pillukat et al., 2013)	Germany	Cohort study	34	1999 – 2004	PROMs, ROM, VAS	2D	67%
Pillukat et al. 2014 (Pillukat et al., 2014)	Germany	Cohort study	17	1992 – 2003	PROMs, ROM, VAS	2D	67%
Pillukat et al. 2018 (Pillukat et al., 2018)	Germany	Cohort study	19; 15 with follow-up	2013 – 2016	PROMs, ROM, VAS, complications	2D	75%
Robinson et al. 2021 (Robinson et al., 2022)	USA	Case study	12	2016 – 2019	ROM, complications	2D	50%
Roner et al. 2020 (Roner et al., 2020)	Switzerland	Case study	37	2008 – 2016	ROM, complications	3D	50%

Rothenfluh et al. 2013 (Rothenfluh et al., 2013)	Switzerland	Case study	22	1999 – 2009	PROMs, ROM, VAS, complications	2D	67%
Schurko et al. 2020 (Schurko et al., 2020)	USA	Case study	53	2005 – 2017	PROMs, complications	2D	100%
Shintani et al. 2018 (Shintani et al., 2018)	Japan	Case study	19	NS	ROM, complications	3D	50%
Singh et al. 2022 (Singh et al., 2022)	Switzerland	Case study	15	2008 – 2015	PROMs, ROM, VAS, complications	3D	75%
Stirling et al. 2020 (Stirling et al., 2020)	UK	Case study	89	2010 – 2018	PROMs, complications	2D	83%
Tarallo et al. 2014 (Tarallo et al., 2014)	Italy	Cohort study	20	2005 – 2012	PROMs, ROM, VAS, complications	2D	75%
Tiren et al. 2014 (Tiren and Vos, 2014)	The Netherlands	Case study	11	2009 – 2011	PROMs, ROM, complications	2D	92%
Wu et al. 2017 (Wu, 2017)	Taiwan	Case study	41	2005 – 2014	PROMs, ROM, complications	2D	75%
Zhang et al. 2022 (Zhang et al., 2022)	China	Case study	17	2016 – 2018	PROMs, complications	2D	83%

RCT: Randomized Controlled Trial; PROMs: Patient-Reported Outcome Measurements; ROM: Range of motion; VAS: Visual analogue scale for pain; NS: Not stated