



# Radioscapholunate Arthrodesis versus Radiolunate Arthrodesis in Dorsal Rheumatoid Wrist Surgery: Clinical Outcomes

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# Introduction

- Radiolunate (RL) arthodesis
  - 1980, Chamay: « providential fusion »
  - Acknowledged technique
- Radioscapholunate (RSL) arthodesis
  - Indications: radioscaphoid joint damage +/- radiolunate instability
  - Few publications
- Objective: To compare clinical outcomes for both arthrodesis



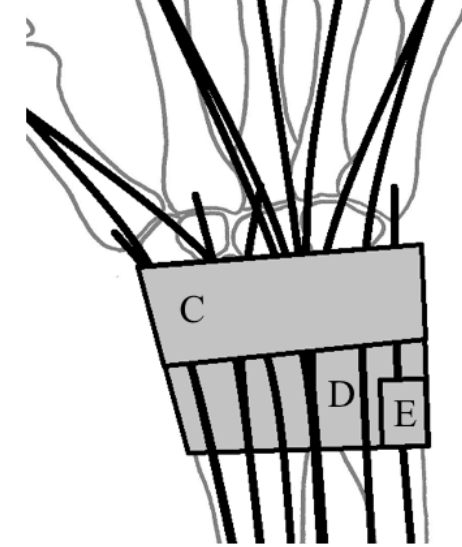
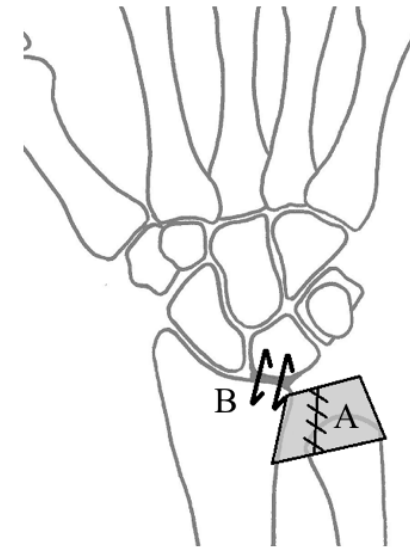
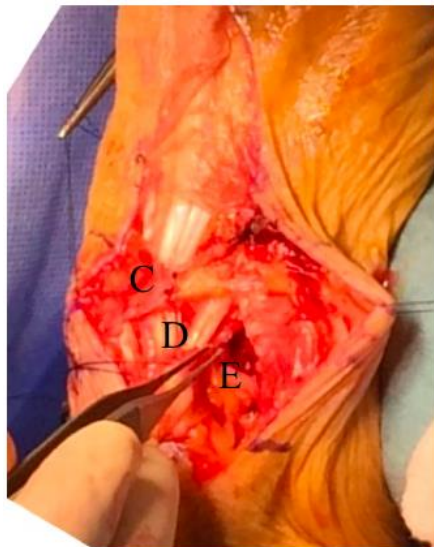
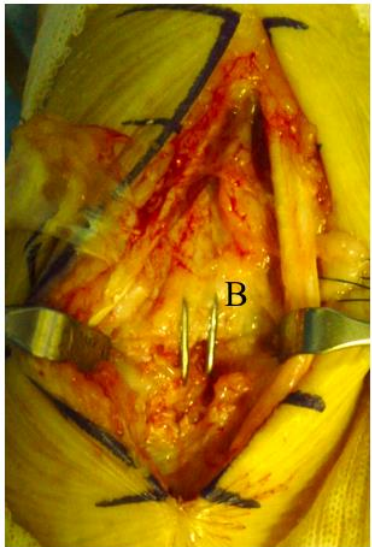
*Dorsal rheumatoid wrist with zigzag digital deformities*

# Methods: Study Design

- Monocentric
- Retrospective
- From 1993 to 2017
  
- Patients
  - Partial arthrodesis for dorsal rheumatoid wrist
  - 12 months minimal follow-up
  
- Comparative
  - Radiolunate partial arthrodesis: RL-A group
  - Radiosapholunate partial arthrodesis: RSL-A group

# Methods: Surgical Technique

- 1) Dorsal incision and tenosynovectomy
- 2) Ulnar head distal resection (A)
- 3) Partial radio-carpal arthrodesis (B)
- 4) Closure (A – C – D – E)



*Surgical technique: A – Capsular suture; B – Partial arthrodesis ; C – Extensor retinaculum; D – Retinaculum between radius and extensor tendons; E – ECU stabilization*

# Methods: Clinical Evaluation

Pain

Return to work

Grip strength

Wrist motion

DASH score

PRWE score

Complications

# Results: Patients

	RL-A	RSL-A	RL-A vs RSL-A p-value
<b>Wrist number (total = 127)</b>	<b>101</b>	<b>26</b>	
<b>Follow-up (months)</b>	134 (12 - 301 ; 87,5)	102 (12 - 269 ; 82,2)	NS
<b>Women percentage</b>	85,10 %	76,90 %	NA
<b>Age at surgery (years)</b>	52,4 (29 - 77 ; 12,9)	51,4 (29 - 70 ; 11,3)	NS
<b>Duration of disease (years)</b>	10,8 (0 - 46 ; 7,5)	10,8 (2 - 31 ; 6,7)	NS
<b>Working patients</b>	47,30 %	63,60 %	NS

Demographic results in RL-A and RSL-A groups

NS: non significant; NA: non analyzable

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# Results: Clinical Outcomes

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Pain	pre-op	5,3 (2 – 9 ; 1,7)	4,3 (0 – 8 ; 2,8)	NS
	post-op	1,9 (0 – 9 ; 2,4)	1,1 (0 – 5 ; 1,6)	NS
	reduction	- 3,7 *	- 2,9 *	
Ext / Flex (°)	pre-op	87 (15 – 180 ; 36,8)	81 (25 – 160 ; 38,0)	NS
	post-op	63 (0 – 130 ; 28,8)	50 (10 – 100 ; 28,5)	NS
	motion loss	-25° * (-29%)	-25° * (-33%)	
UI / RI (°)	pre-op	36 (15 – 65 ; 14,8)	55 (50 – 60 ; 7,1)	NS
	post-op	27 (0 – 60 ; 16,1)	15 (0 – 25 ; 7,6)	< 0,05*
	motion loss	-15° * (-51%)	NA	
Pro / Sup (°)	pre-op	145 (90 – 170 ; 21,7)	137 (60 – 165 ; 36,7)	NS
	post-op	152 (70 – 180 ; 17,4)	155 (120–180 ; 14,1)	NS
	motion gain	+ 7° * (+5%)	+ 22° (+16%)	

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<b>Post-op grip strength (kg)</b>	13 (0 – 40 ; 8,4)	14 (0 – 30 ; 9,2)	NS
<b>Return to work</b>	80,6 %	100 %	NS
<b>Time to return to work (weeks)</b>	22 (0 – 108 ; 28)	24 (12 – 44 ; 9)	NS
<b>Post-op DASH score</b>	42,9 (0,8 – 85,6 ; 23,3)	41,8 (2,5 – 96 ; 28,1)	NS
<b>Post-op PRWE score</b>	41,4 (0 – 86,5 ; 26,3)	20,6 (0 – 59 ; 20,4)	< 0,05*

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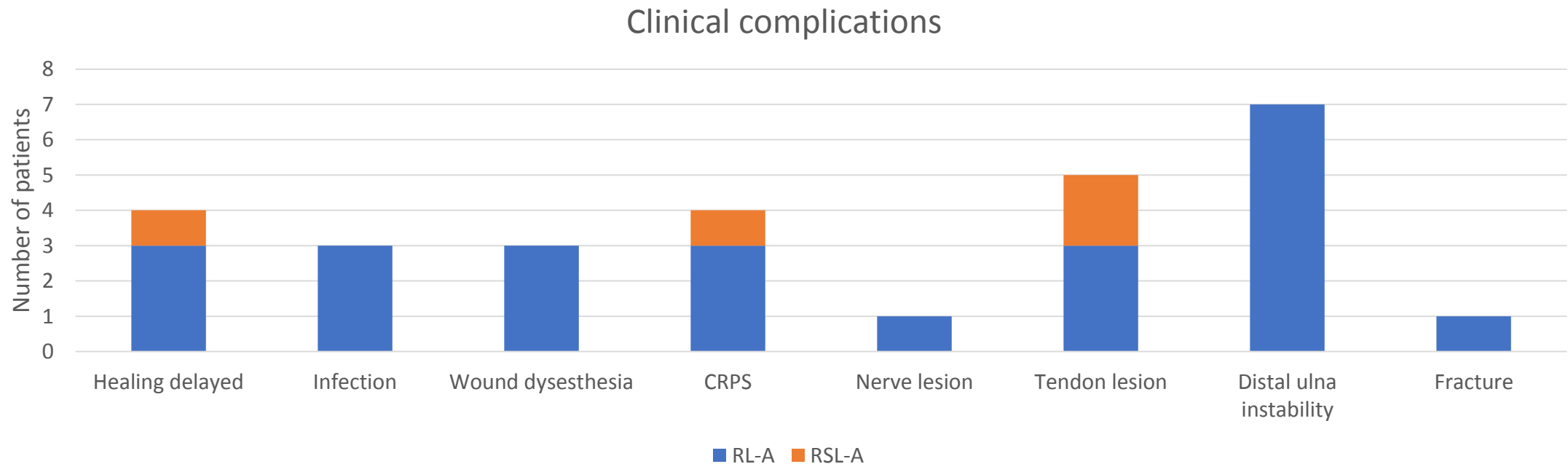
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# Results: Complications

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<b>Complications percentage</b>	18,81 %	11,54 %	NA
<b>Time of occurrence (months)</b>	5,0 (0,5 – 32 ; 8,2)	1,8 (0 – 3 ; 1,8)	NA
<b>Total arthrodesis</b>	2	0	

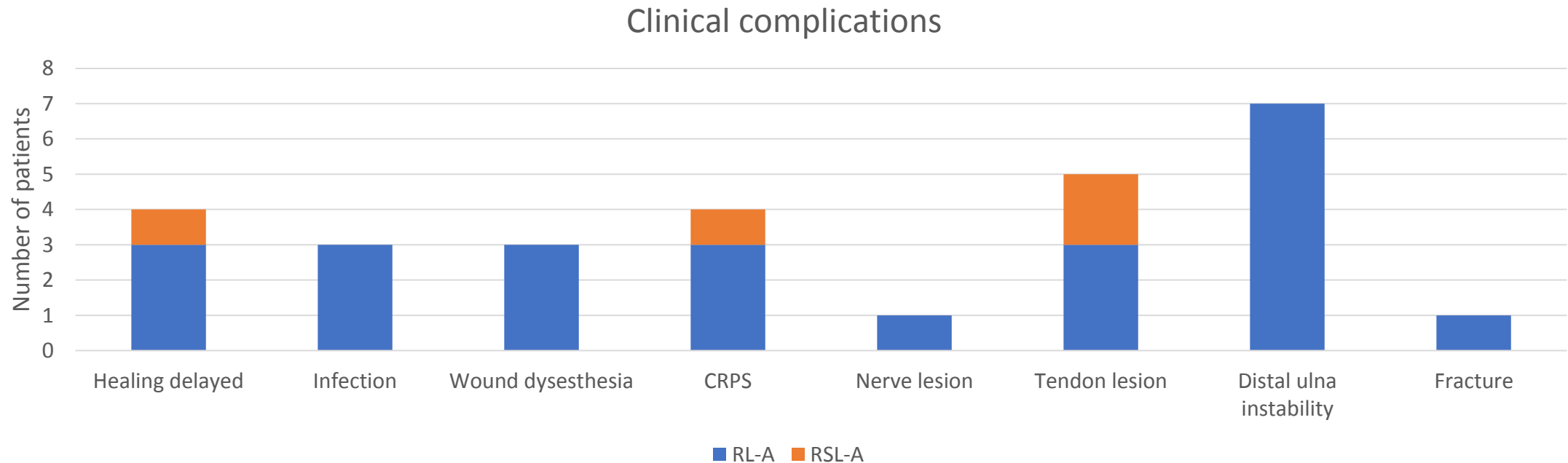
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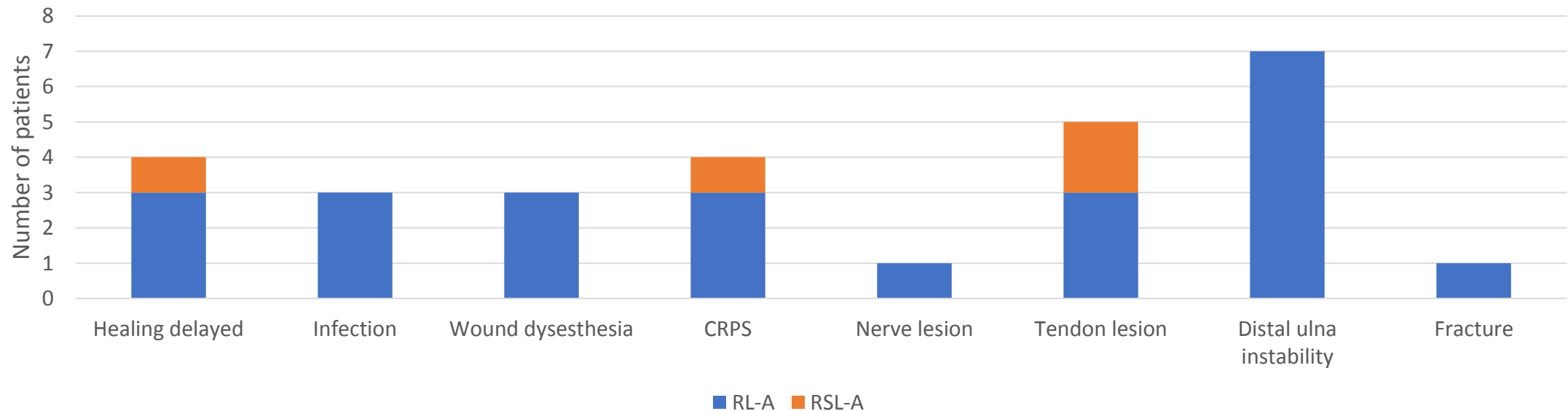


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Clinical complications

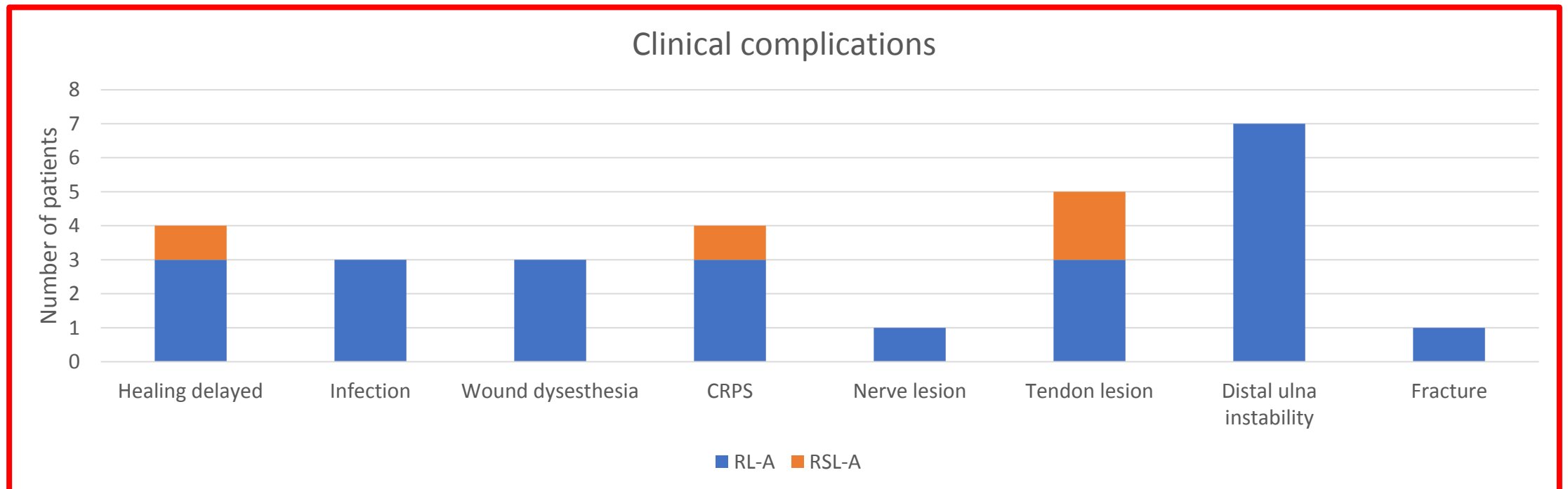




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# Discussion

- Strengths and Weaknesses

- +: Largest number of patients

- RL-A: Borisch, J Hand Surg Br, 2002: 91 patients

- RSL-A: Honkanen, J Hand Surg Eur, 2007 / Bain, Hand Surg, 2009: 7 patients

- -: Retrospective study

- Literature

- Similar results for both arthrodesis

- No clinical difference between RL-A and RSL-A: Honkanen, J Hand Surg Eur, 2007 / Raven, J Hand Surg Am, 2012

# Conclusion

- No difference between RL arthrodesis and RSL arthrodesis
  - Significant pain reduction
  - Significant loss of motion
  - Good functional recovery
- Dorsal rheumatoid wrist surgery: in case of medical treatment failure or contraindication
- Scaphoid: no excessive arthrodesis

# Thank you for your attention

