

THE RESULTS OF SPINAL DEFORMITY SURGERY IN PATIENTS WITH PARKINSONS DISEASE

Ari Demirel, M.D.¹, Kestutis Valancius, M.D.¹, Kristian Hoey, M.D.¹, Peter Helmig, M.D., PhD¹, Haisheng Li, M.D., PhD¹, Cody Eric Bunger, Prof, M.D., PhD¹, Ebbe Stender Hansen M.D, PhD¹

**¹Department of Orthopaedics, Aarhus University hospital
Aarhus, Denmark**

INTRODUCTION

- **Parkinsons disease (PD) is the second most common neurodegenerative disorder.**
- **Truncal dystonia in long standing PD often causes loss of spinal balance**
- **The literature on deformity surgery in patients with PD is remarkably scarce with many reports of complications and failures, and it is still unclear weather patients with spinal deformity due to PD benefit from operative treatment.**

METHODS

All Parkinsons patients who had extensive deformity and spinal fusion surgery from 2002 to 2016 were investigated retrospectively.

- Patients answered PDQ-39, SRS-22, EQ-5D, SF-36 questionnaires.**
- Pre- and postoperative radiographs were analysed by plumb line displacement.**
- Complications and revision surgeries were noted.**

METHODS

In addition the question;

“If you had the knowledge that you have today, would you have said yes to your first operation”

had been asked.

RESULTS

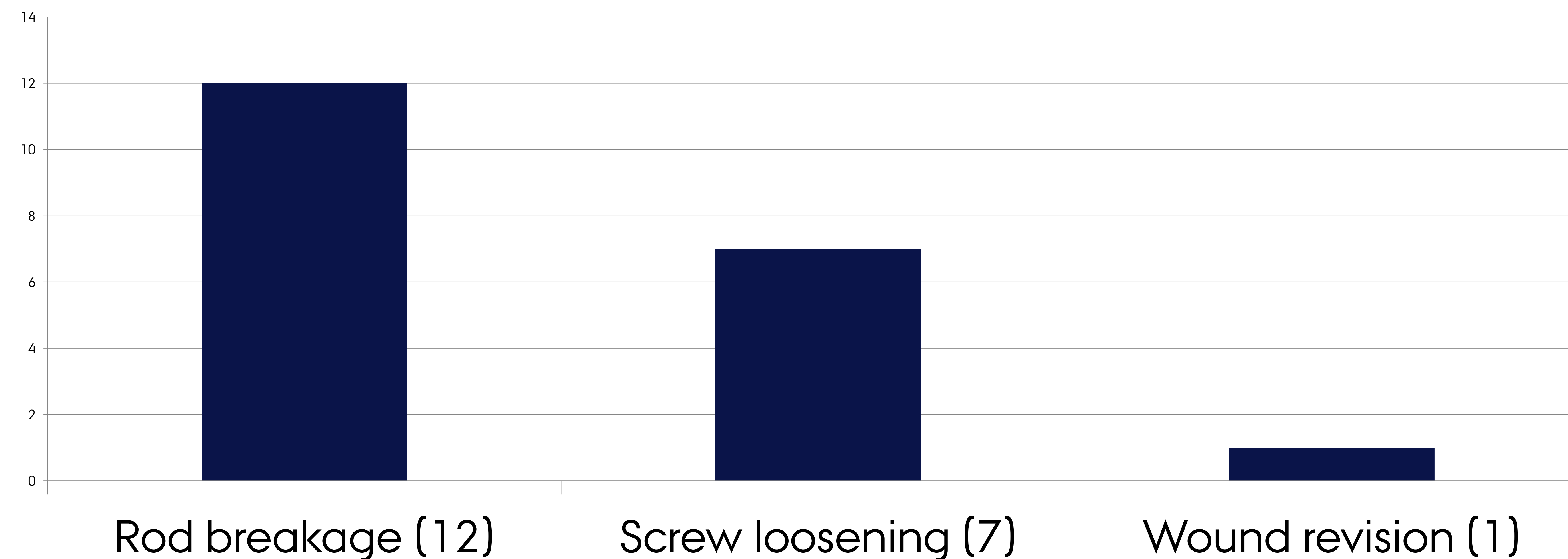
-
- 18 patients – 13 men and 5 women
 - Mean age 71,7 (SD 4,5)
 - Median follow up: 2 years (Range 1 to 12 years)
 - According to questionnaires: **High social and emotional parameters**
Low mobility and functional parameters
 - **No chronic worsening of Parkinsons symptoms**

RESULTS FOR SATISFACTION

- **Satisfaction score in SRS-22: 4,07 (SD 0,8) out of 5.**
- **16 patients said yes to our final question: "If you had the knowledge that you have today, would you have said yes to your first operation"**

RESULTS OF REVISION SURGERY

- Revision surgeries were frequent but declined with learning
- Reasons for revision surgery:



PLUMB LINE DISPLACEMENT (CM) PRE- AND POSTOPERATIVELY, REVISIONS

Patient	Prior (Coronal-sagittal)	After(Coronal-Sagittal)	Revision per patient
1	0-0	1-0	0
2	10-14	0-0	0
3	5-30	0-5	0
4*	-	-	5
5	9-9	4-2	1
6	13-15	0-6	2
7	0-21	0-6	3
8	0-23	0-0	0
9**	0-0	0-0	0

* initial radiographs not available

** Cervical operation for drop head

PLUMB LINE DISPLACEMENT (CM) PRE- AND POSTOPERATIVELY, REVISIONS

Patient	Prior (Coronal-sagittal)	After(Coronal-Sagittal)	Revision per patient
10	40-17	1-0	3
11	8-10	0-4	0
12***	10-12	6-7	0
13	21-20	4-2	0
14	2-16	4-0	1
15	2-6	2-4	4
16	0-6	0-3	0
17	12-6	3-0	1
18	6-12	0-7	0

*** Local repair of non-united thoracolumbar fracture, advanced disease, extensive correction not attempted

CONCLUSION

- **Deformity surgery in PD must be extensive with restoration of sagittal and coronal balance and fusion to the ileum**
- **Instrumental complications and revisions must be expected.**

CONCLUSION

- **The satisfaction level of Parkinson patients operated on for spinal deformity appears high despite frequent instrumental problems and revisions.**
- **Prospective studies comparing life quality before and after surgery and health economics are warranted.**

DISCLOSURE

Our presentation has no potential conflict of interest disclosure.