

Supplementary table A

Specification of ultrasound equipment

Name of the scanner	Transducer specifications	Manufacturer
Sonoline Antares	VFX13-5 linear; 8.5 to 11.5 MHz	Siemens Medical Systems, Germany
GE Logiq S8	ML6-15D linear; 4 to 15 MHz	General Electric Healthcare, UK
Samsung HS 60	LA3-14AD linear; 3 to 14 MHz	Samsung Medison, Korea
Aplio a450	PLT-1005BT linear; 7 to 14 MHz	Canon medical systems, Japan

Supplementary table B

Results from the per protocol analysis of the OSS at 4 month follow-up. Values are mean (SD) score

	Lavage+steroid* (n=69)	Sham lavage+steroid* (n=71)	Sham* (n=62)	Between-group difference (95% CI) [†]		
				Lavage+steroid v Sham	Sham lavage+steroid v Sham	Lavage+steroid v Sham lavage+steroid
Baseline	29.8 (7.6)	29.7 (7.7)	31.0 (5.8)			
4 months	33.4 (8.7)	35.5 (7.9)	33.8 (8.3)	0.32 (-2.14 to 2.78)	2.50 (0.05 to 4.94)	-2.18 (-4.55 to 0.19)
				P=1.0 [‡]	P=0.14 [‡]	P=0.21 [‡]

Results from the per protocol analysis of the OSS at 24 month follow-up. Values are mean (SD) score

	Lavage+steroid* (n=27)	Sham lavage+steroid* (n=20)	Sham* (n=25)	Between-group difference (95% CI) [†]		
				Lavage+steroid v Sham	Sham lavage+steroid v Sham	Lavage+steroid v Sham lavage+steroid
Baseline	29.6 (8.1)	31.4 (7.7)	31.9 (6.1)			
24 months	40.0 (6.9)	38.6 (8.2)	42.6 (7.3)	-1.62 (-5.52 to 2.29)	-3.96 (-8.16 to 0.24)	2.34 (-1.80 to 6.48)
				P=1.0 [‡]	P=0.21 [‡]	P=0.81 [‡]

CI=confidence interval; OSS=Oxford Shoulder Score; n=number of per protocol patients at 4 month and 24 month follow-up; SD=standard deviation.

*The values are raw measurement data.

[†]The values are adjusted for baseline measurements of the variable. Positive values indicate a better result for the first group in the comparison.

[‡]P values are adjusted according to Bonferroni.

Supplementary table C

Supplementary treatment measures in the three treatment groups over time. The number of treatments exceeds the number of patients who have received supplementary treatment because more than one supplementary treatment may have been given to one patient.

Treatment group	Time when supplementary treatment was given			
	Between baseline and 4 months (No of treatments)	Between 4 and 8 months (No of treatments)	Between 8 and 12 months (No of treatments)	Between 12 and 24 months (No of treatments)
Lavage+steroid	N=4 Steroid injection (4)	N=42 Physiotherapy (20) Steroid injection (7) Physiotherapy+steroid injection (7) Re-lavage (3) Surgery* (4) Other (1)	N=6 Steroid injection (2) Physiotherapy+steroid injection (1) Re-lavage (2) Surgery† (1)	N=4 Physiotherapy (2) Steroid injection (1) Surgery† (1)
Sham lavage+steroid	N=3 Steroid injection (2) Lavage (1)	N=52 Physiotherapy (17) Steroid injection (10) Physiotherapy+steroid injection (5) Lavage (19) Surgery‡ (1)	N=12 Physiotherapy (1) Steroid injection (2) Lavage (3) Surgery† (4) Other (2)	N=11 Physiotherapy (1) Steroid injection (3) Physiotherapy+steroid injection (1) Lavage (6)
Sham	N=8 Physiotherapy (1) Steroid injection (4) Physiotherapy+steroid injection (2) Not treated (1)	N=37 Physiotherapy (13) Steroid injection (6) Physiotherapy+steroid injection (6) Lavage (11) Surgery§ (1)	N=7 Steroid injection (4) Lavage (3)	N=8 Steroid injection (2) Lavage (1) Surgery# (4) Other (1)

N=Total number of supplementary treatments per study group and time interval.

*Two by acromioplasty alone, 2 by acromioplasty and deposit removal.

†By acromioplasty alone.

‡By deposit removal alone.

§By acromioplasty and deposit removal.

#Three by acromioplasty alone, 1 by acromioplasty and deposit removal.

Supplementary table D

Exploration of the impact of the treatment group on the result on the OSS in patients with deposit sizes of <12.5 mm and ≥12.5 mm on sonography

Sonographic deposit size at baseline	Treatment group (No of patients)	Mean (SD) OSS		P values†
		baseline	4 months	
<12.5 mm	Lavage+steroid (36)	29.9 (6.8)	31.3 (8.7)	0.03§
	Sham lavage+steroid (30)	29.3 (7.8)	36.9 (7.0)	
	Sham (26)	29.5 (6.9)	34.3 (9.3)	
≥12.5 mm	Lavage+steroid (37)	29.5 (8.0)	35.8 (8.2)	0.48
	Sham lavage+steroid (44)	29.9 (7.5)	34.3 (8.4)	
	Sham (43)	31.4 (5.8)	33.5 (8.8)	
P values‡				
Interaction treatment group x deposit size		0.03		
Main effect treatment group		0.30		
Main effect deposit size		0.77		

ANOVA= analysis of variance; OSS=Oxford Shoulder Score; SD=standard deviation.

† P values derived from one-way ANOVA for the effect of treatment group on OSS at 4 months, depending on the deposit size at baseline.

‡ P values derived from two-way between-groups ANOVA for the individual and joint effect of treatment group and deposit size on the outcome on the OSS.

§ Post hoc analyses by one-way ANOVA showed a significant difference only between the lavage+steroid group and the sham lavage+steroid group with a superior result for the latter with 5.70 points on the OSS (95% confidence interval 0.76 to 10.61; P=0.02).

Supplementary table E

Comparison of results depending on the changes of radiographic deposit appearance from baseline to 4 month follow-up across treatment groups

Treatment group	Radiographic change of deposit appearance from baseline to 4 month follow-up (No of patients)	Mean (SD) OSS at baseline (points)	Mean (SD) OSS at 4 month follow-up (points)
Lavage+steroid	unchanged† (11)	32.9 (4.0)	35.0 (5.8)
	changed but still visible‡ (28)	30.2 (7.0)	31.8 (7.8)
	disappeared§ (33)	28.2 (8.3)	34.5 (10.1)
Sham lavage+steroid	unchanged† (57)	29.6 (8.0)	35.4 (8.3)
	changed but still visible‡ (7)	28.7 (6.2)	31.9 (4.8)
	disappeared§ (6)	30.8 (4.3)	37.5 (6.2)
Sham	unchanged† (42)	30.9 (6.3)	34.2 (8.1)
	changed but still visible‡ (9)	29.6 (5.5)	28.7 (13.0)
	disappeared§ (15)	30.3 (6.4)	35.9 (8.0)
P values#			
Interaction treatment group x change of appearance		0.86	
Main effect treatment group		0.63	
Main effect change of deposit appearance		0.03*	

ANOVA=analysis of variance; OSS=Oxford Shoulder Score; SD=standard deviation.

† Unchanged means unchanged compared to x-ray at baseline.

‡ Changed but still visible means changed in size and/or density but still visible compared to x-ray at baseline.

§ Disappeared means no longer visible on x-ray at four months.

P values derived from two-way between-groups ANOVA for the individual and joint effect of treatment group and deposit appearance on the outcome on the OSS.

*Pairwise post hoc tests between the three groups of deposit appearance showed no outcome difference between the unchanged and the disappeared group, but a significantly better results for the unchanged group compared to the changed but still visible group (difference 3.78 points, 95% confidence interval 0.22 to 7.33; P=0.03) and for the disappeared group compared to the changed but still visible group (difference 4.06, 95% confidence interval 0.02 to 8.11; P=0.05).

Supplementary table F

Exploration of the impact of the treatment group on the result on the OSS depending on the patients' daybook reported adherence to the program of **home exercises**

Percentage of scheduled exercises performed	Treatment group (No of patients)	Mean (SD) OSS		P values†
		baseline	4 months	
≥80	Lavage+steroid (46)	29.7 (7.1)	33.9 (8.8)	0.86
	Sham lavage+steroid (38)	29.2 (7.2)	34.4 (8.0)	
	Sham (36)	30.1 (7.1)	33.3 (9.7)	
<80 or did not return the daybook	Lavage+steroid (27)	29.7 (7.9)	33.0 (8.6)	0.27
	Sham lavage+steroid (36)	30.1 (8.0)	36.3 (7.9)	
	Sham (33)	31.3 (5.3)	34.3 (8.1)	
P values‡				
Interaction treatment group x exercises performed		0.63		
Main effect treatment group		0.36		
Main effect exercises performed		0.57		

ANOVA=analysis of variance; OSS=Oxford Shoulder Score; SD=standard deviation.

†P values derived from one-way ANOVA for the effect of treatment group on OSS at 4 months, depending on the reported adherence to the program of home exercises.

‡P values derived from two-way between-groups ANOVA for the individual and joint effect of treatment group and patient reported adherence to the program of home exercises on the outcome on the OSS.

Supplementary table G

Reported adverse events. Values are number of patients

	Lavage+steroid		Sham lavage+steroid		Sham	
	Early*	Late†	Early*	Late†	Early*	Late†
Dizziness‡	1				1	
Nausea‡	1				1	
Headache‡					1	
Hematoma at injection site‡	2				1	
Increasing shoulder pain‡	2	2	4	1	2	1
Sense of «heavy» arm‡			1			
Swelling of the shoulder‡		1				
Capsulitis						1
Total number of events	6	3	5	1	6	2
Number of participants afflicted	4	2	5	1	4	2

*Directly after treatment or during the first week.

†From the second week to four months.

‡Of short duration, treated symptomatically.

Supplementary table H

Use of prescription analgesics during the last month before the 4 month follow-up. Values are number of patients (%)

Treatment group	Use of prescription analgesics at 4 month follow-up			
	Every day	Not every day but every week	Not every week but every month	Never
Lavage+steroid (n=73)	7 (10)	11 (15)	6 (8)	49 (67)
Sham lavage+steroid (n=71)	5 (7)	9 (13)	5 (7)	52 (73)
Sham (n=67)	4 (6)	10 (15)	7 (10)	46 (69)

Use of prescription analgesics during the last month before the 24 month follow-up. Values are number of patients (%)

Treatment group	Use of prescription analgesics at 24 month follow-up			
	Every day	Not every day but every week	Not every week but every month	Never
Lavage+steroid (n=67)	3 (5)	4 (6)	3 (5)	57 (85)
Sham lavage+steroid (n=71)	5 (7)	5 (7)	4 (6)	57 (80)
Sham (n=63)	0 (0)	5 (8)	3 (5)	55 (87)

n=Number of patients.

Supplementary table I

Effect of blinding directly after treatment was given

		Patient believe			
		Values are number of patients (%)			
		Lavage+steroid	Sham lavage+steroid	Sham	Do not know
Treatment group	Lavage+steroid (n=73)	51 (70)	7 (10)	2 (3)	13 (18)
	Sham lavage+ steroid (n=74)	37 (50)	7 (10)	4 (5)	26 (35)
	Sham (n=70)	31 (44)	10 (14)	4 (6)	25 (36)

Effect of blinding 2 weeks after treatment was given

		Patient believe			
		Values are number of patients (%)			
		Lavage+steroid	Sham lavage+steroid	Sham	Do not know
Treatment group	Lavage+steroid (n=73)	48 (66)	10 (14)	4 (6)	11 (15)
	Sham lavage+ steroid (n=74)	30 (41)	14 (19)	17 (23)	13 (18)
	Sham (n=70)	28 (40)	7 (10)	25 (36)	10 (14)

Effect of blinding 6 weeks after treatment was given

		Patient believe			
		Values are number of patients (%)			
		Lavage+steroid	Sham lavage+steroid	Sham	Do not know
Treatment group	Lavage+steroid (n=73)	38 (52)	15 (21)	4 (6)	16 (22)
	Sham lavage+ steroid (n=74)	27 (37)	16 (22)	15 (20)	16 (22)
	Sham (n=69)	24 (35)	7 (10)	26 (38)	12 (17)

n=Number of patients.