64th Annual Orthopaedic Congress of Hellenic Association Athens 2008, Greece

Prospective randomized comparison of single row versus double row arthroscopic rotator cuff repair- An MRI controlled study

S.J. Lichtenberg, I. Gavriilidis, M. Wiedemann, P.Magosch,

P. Habermeyer

ATOS KLINIK HEIDELBERG

MATERIAL & METHODS

- ✓ Prospective, randomized cohort of 46 pat.
- ✓ 41 available for follow up (89%)
- ✓ FU 24 months
- ✓ 19 single row
- ✓ 22 double row
- ✓ MRI pre and post-op
- ✓ CS

MATERIAL & METHODS

	Total	SR	DR
Age	60(41-76)	60(41-72)	60(46-76)
Gender	M:71.9% F: 28.1%	M:74.1% F: 25.9%	M:70% F: 30%
Onset	T:40% D: 60%	T: 35% D: 65%	T: 45% D: 55%

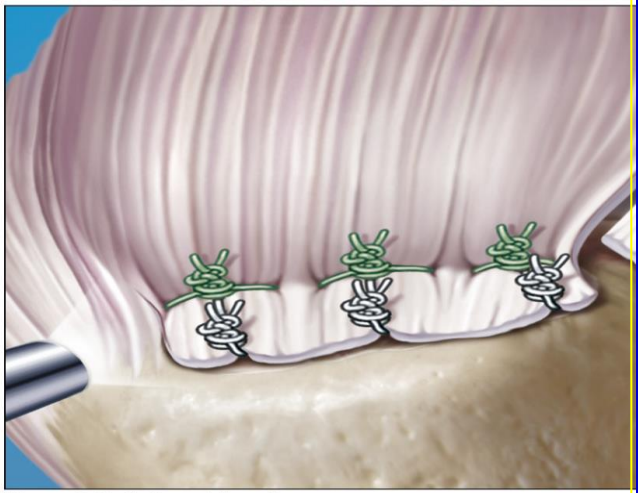
MATERIAL & METHODS

- ✓ **INCLUSION**
  - ✓ **SSP tear < 5 cm (Bateman III) incl. ISP delamination**
  - ✓ **Retraction ≤ III° (Patte)**
  - ✓ **Atrophy < III° (Zanetti)**

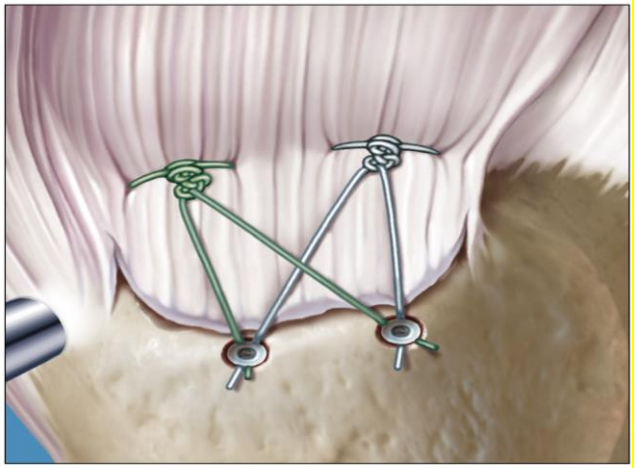
- ✓ **EXCLUSION**
  - ✓ **SCP involvement**
  - ✓ **Atrophy ≥ III°**
  - ✓ **Stiffness**
  - ✓ **AHD < 5mm**

TECHNIQUE

- ✓ SINGLE ROW
  - ✓ Anchor in the middle of foot print (Mason-Allen)
- ✓ DOUBLE ROW
  - ✓ Suture anchor at osteochondral margin
  - ✓ Knotless anchor lateral cortex



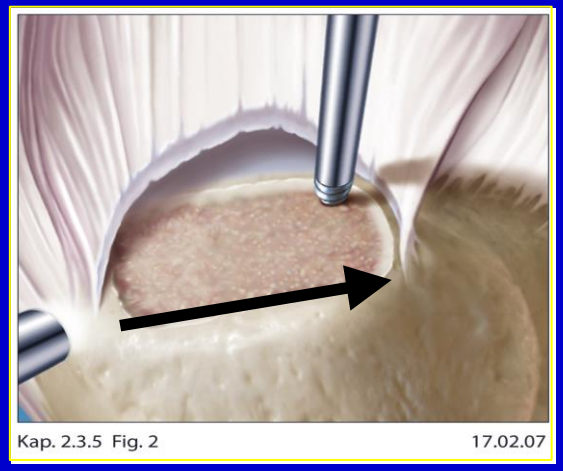
Kap. 2.3.6.4 Fig. 4

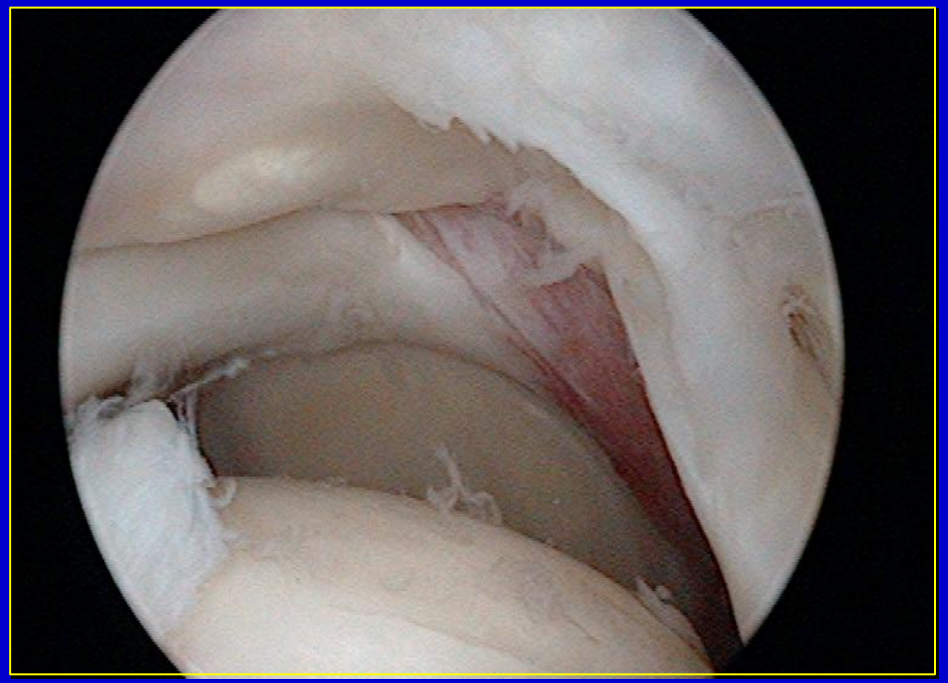


Kap. 2.3.5 Fig. 6c 17.02.07

TEAR SIZE

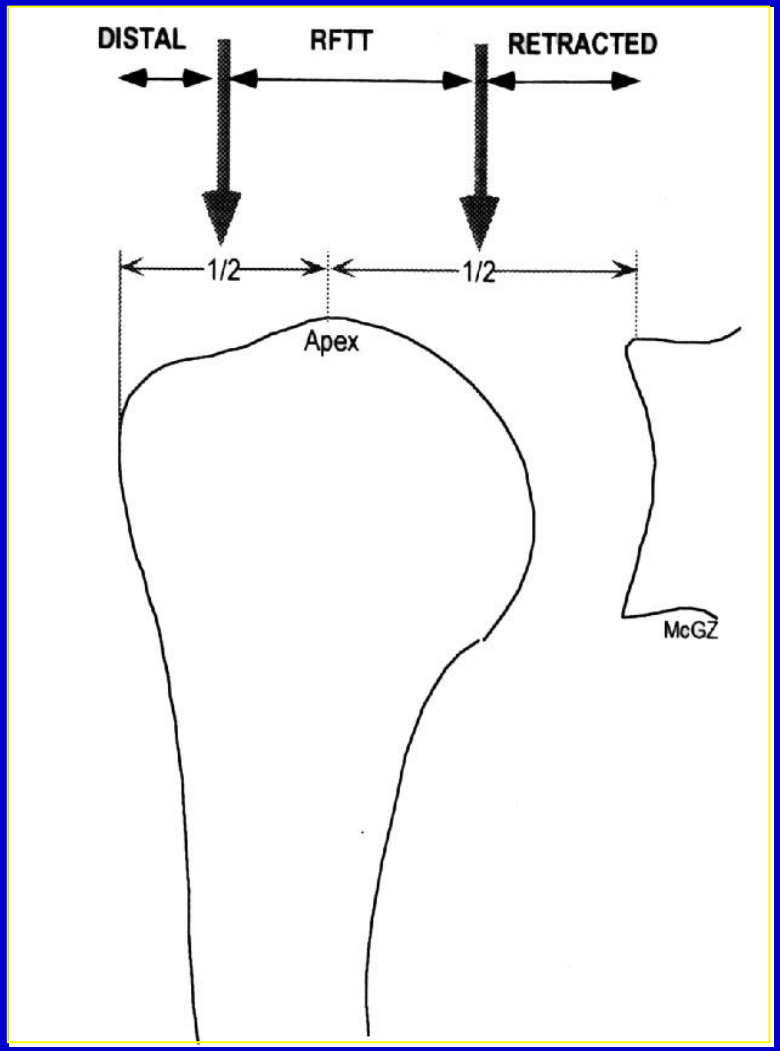
- ✓ **Bateman I: 9.8%**
  - **0-1cm**
- ✓ **Bateman II: 24.4%**
  - **1-3 cm**
- ✓ **Bateman III: 65.8%**
  - **3-5 cm**



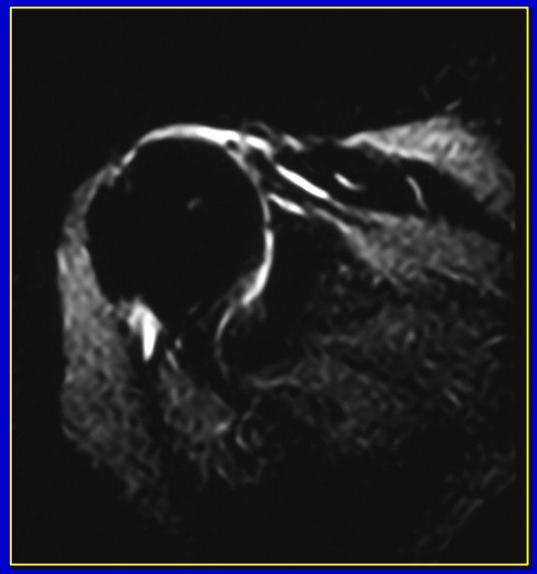


RETRACTION- PATTE

- ✓ Grade I: 14.3%
- ✓ Grade II: 80.4%
- ✓ Grade III: 5.4%



RETEAR



- ✓ fluidlike signal intensity on T2-weighted
- ✓ nonvisualization of a portion of the rotator cuff

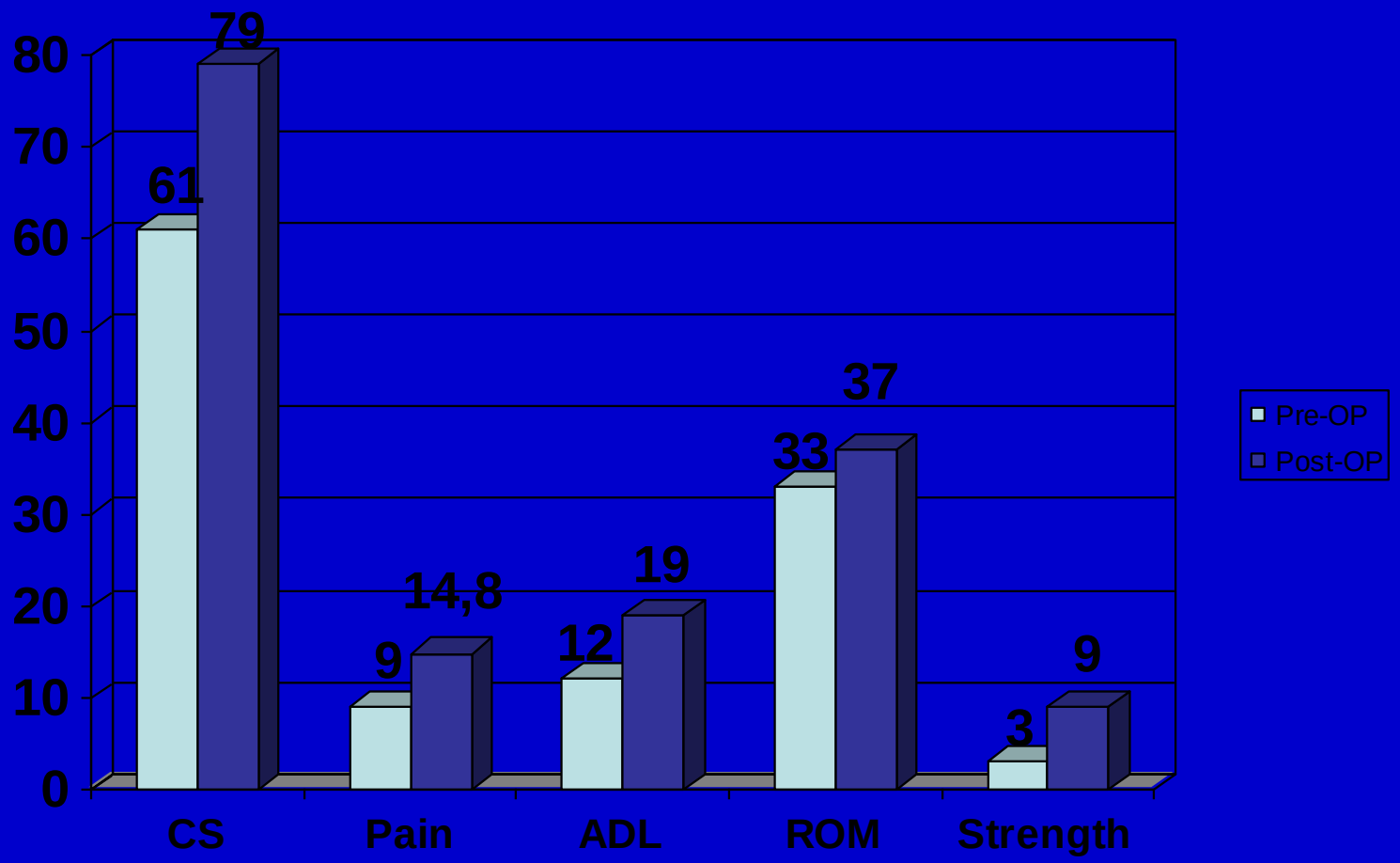
Retear rate

- ✓ Single row: 26.3%
- ✓ Double row: 21.7%
- ✓ Overall: 23.8%
- ✓ P= 0.342

Owen et al. Radiology 1993

RESULTS

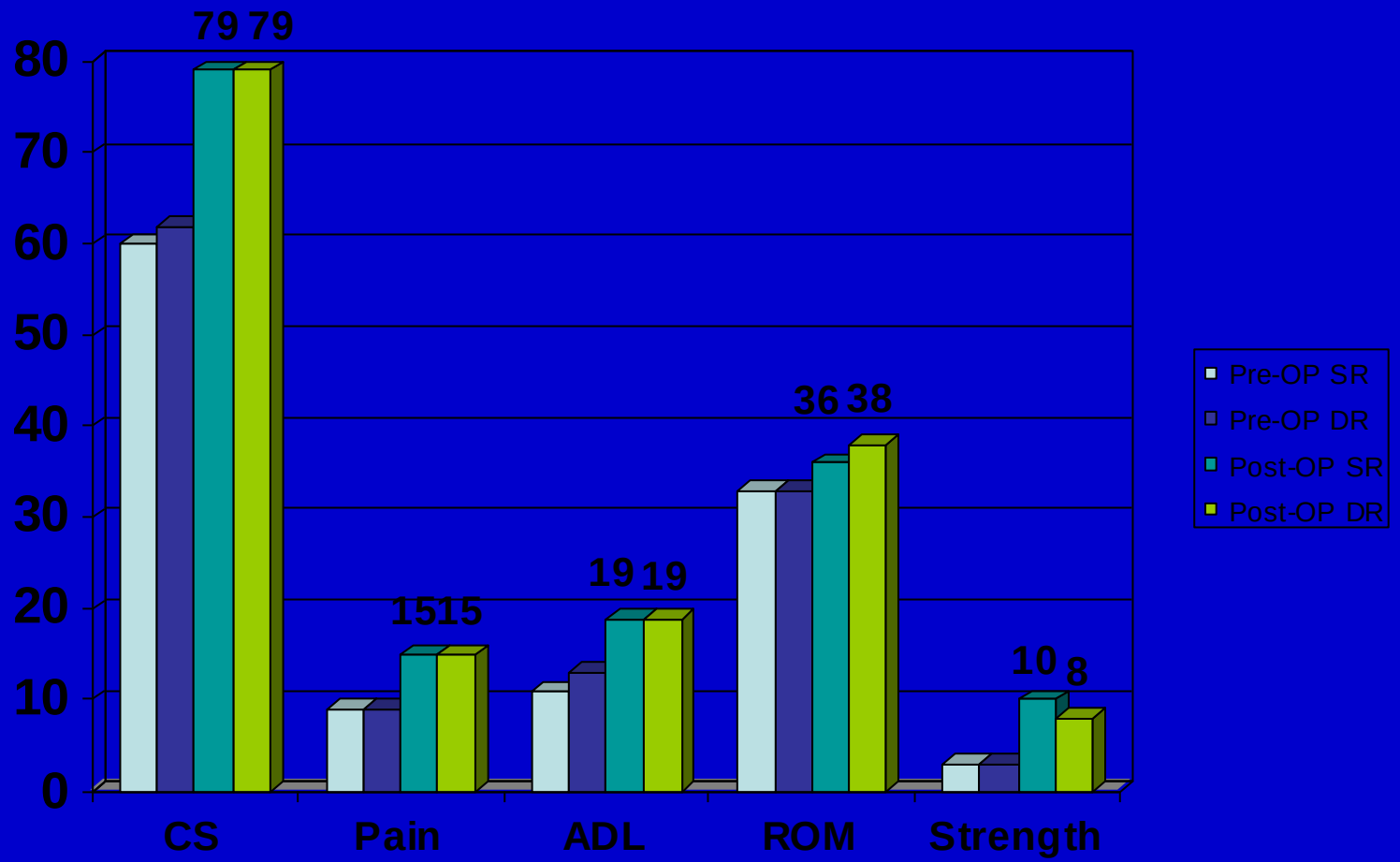
Constant-Score pre- vs. post-OP



Significant difference pre- to post-OP (p<0.0001)

RESULTS

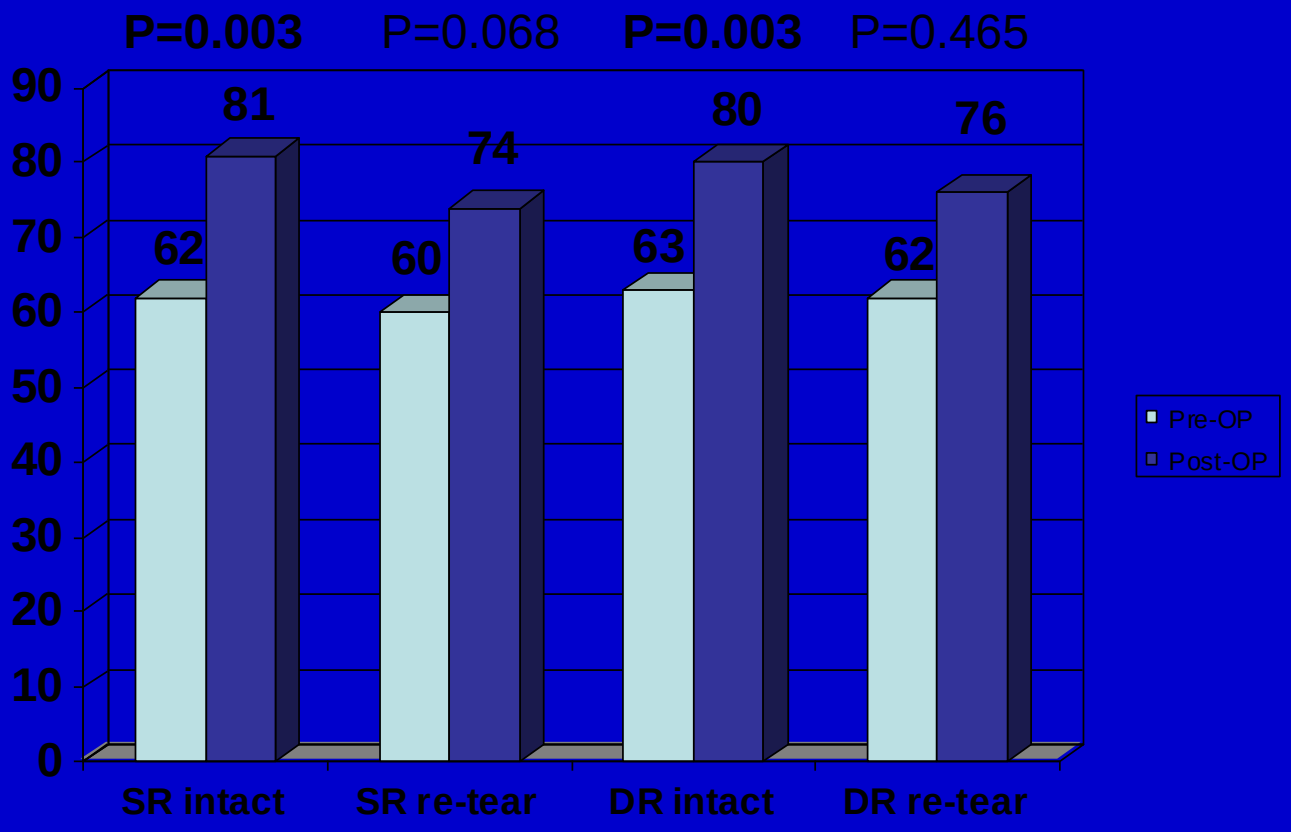
Constant-Score pre- vs. post-OP



No significant difference between DR vs SR

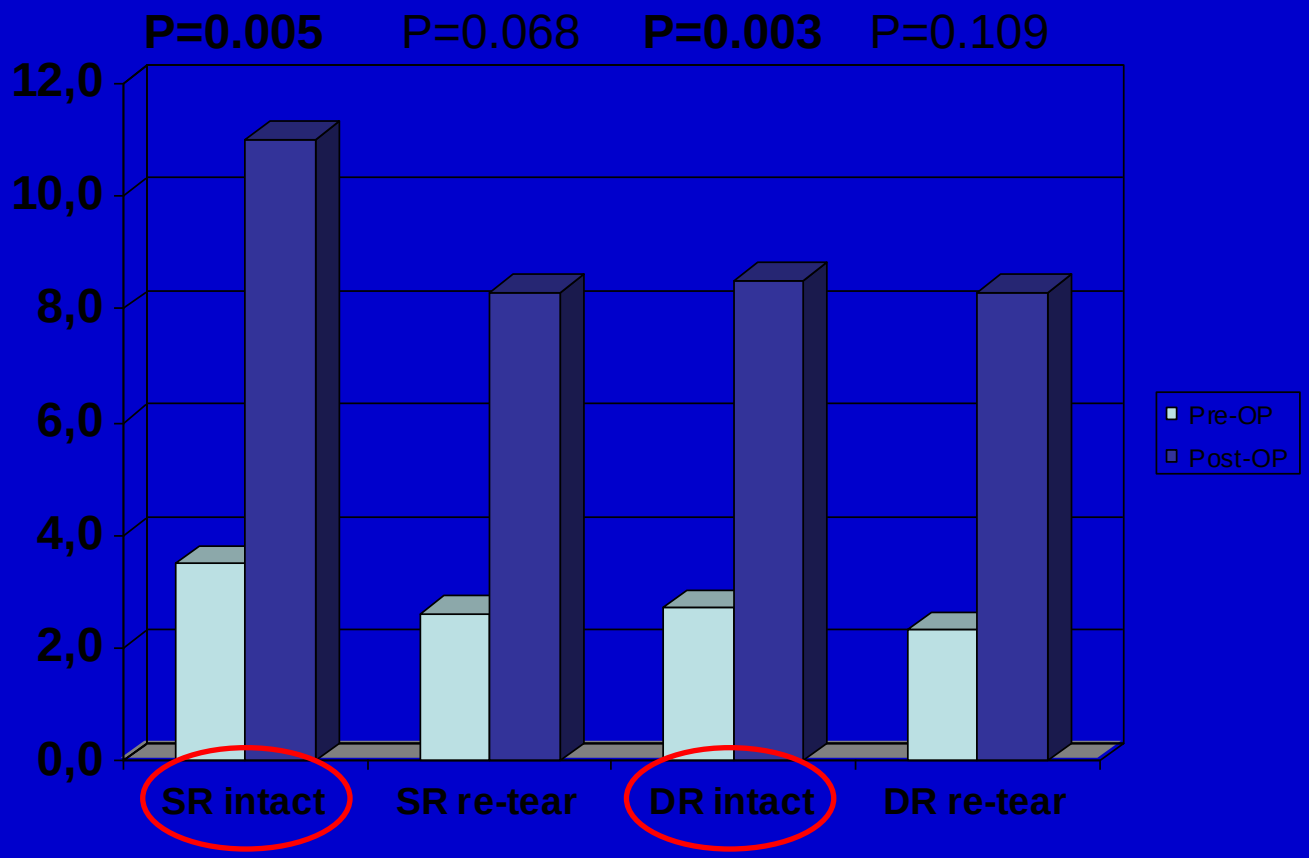
RESULTS

Constant-Score re-tear vs. intact



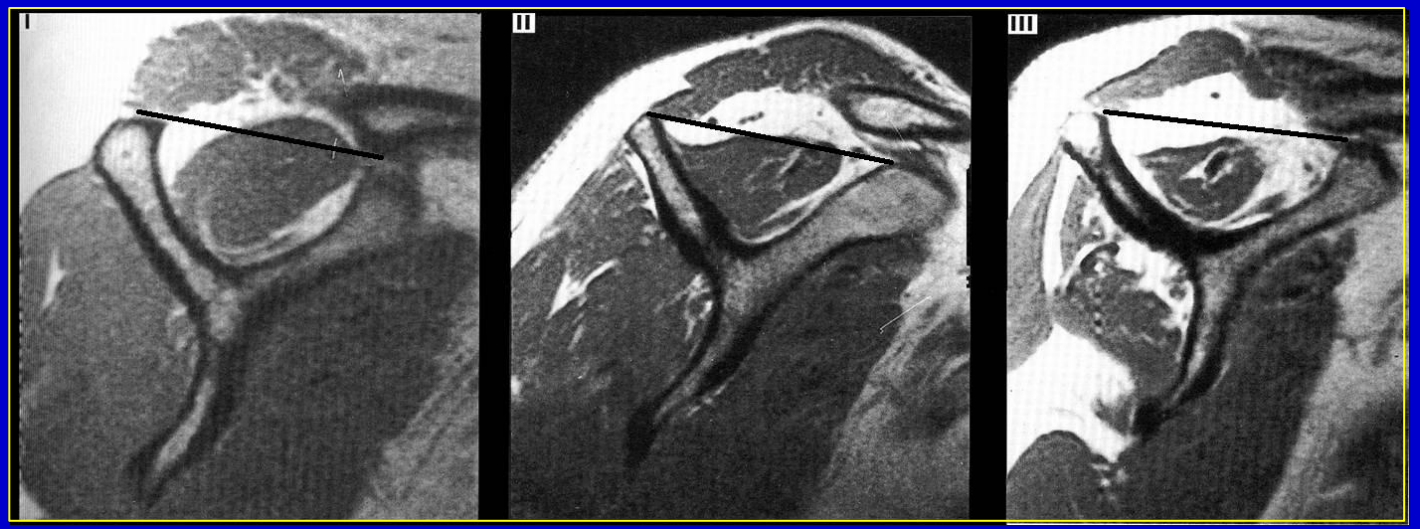
RESULTS

STRENGTH



No difference between SR vs DR

ATROPHY (Tangent sign)



no atrophy	45.2%	2.4%	2.4 %
50%			
20%	68.3%	5.0%	6.7%

Zanetti et al. Invest Radiol. 1998

RESULTS

Atrophy:

- ✓ **Post-OP atrophy significantly greater (p= 0.002)**
- ✓ **No difference between SR or DR neither pre-OP nor post-OP (p= 0.578; p= 0.573)**
- ✓ **Atrophy sign. higher in re-tears (p= 0.004)**
- ✓ **Stage of pre-OP atrophy negatively influences integrity post-OP = higher re-tear rate with higher degree of pre-OP atrophy (p= 0.003)**

DISCUSSION

Re-tear and clinical outcome

Author	N	Tear size	FU	Re-tear	Clinical
Sugaya et al Arthroscopy 2007	SR 39 DR 41	Small 20% Med. 43% Large 37%	35 months	SR 26% DR 10% Sign.	No difference
Franceschi AJSM 2007	SR 26 DR 26	Large to massive	24 months	SR 7.7% DR 3.8% Ns	No difference
Park et al. AJSM 2008	SR 40 DR 38	Med. 59% Large 41%	24 months	?????	DR sign better in large tears
Lichtenberg ASES 2008	SR 19 DR 22	Large 66% Med. 24% Small 10%	24 months	SR 26.3% DR 21.7% Ns	No difference

DISCUSSION

ATROPHY

- ✓ **Shen et al. JSES 2007:**
  Positive correlation of atrophy on functional outcome
- ✓ **Liem et al. JBJS 2007:**
  Less atrophy pre-op less post-op re-tears
  FI stage II pre-op showed more pos-op re-tears
- ✓ **Lichtenberg et al. ASES 2008:**
  The more pre-op atrophy, the higher the risk to experience re-tear post-op

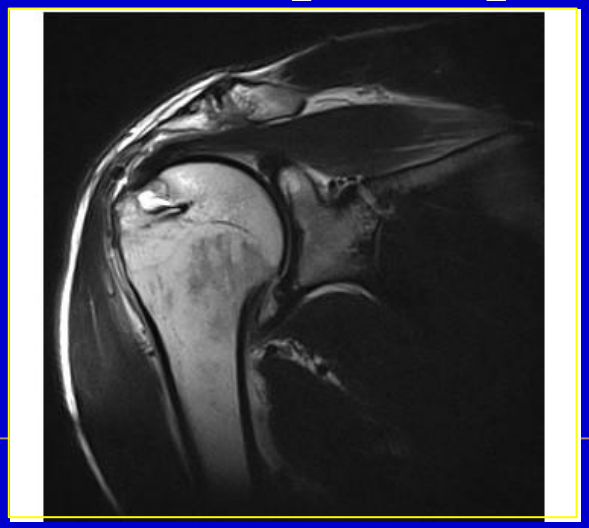
CONCLUSION

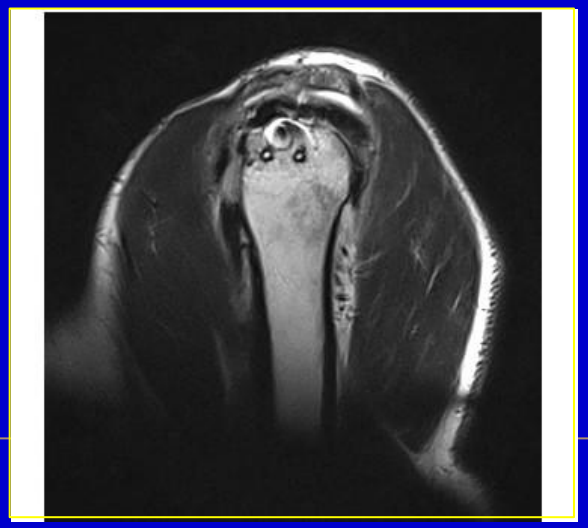
DR vs SR

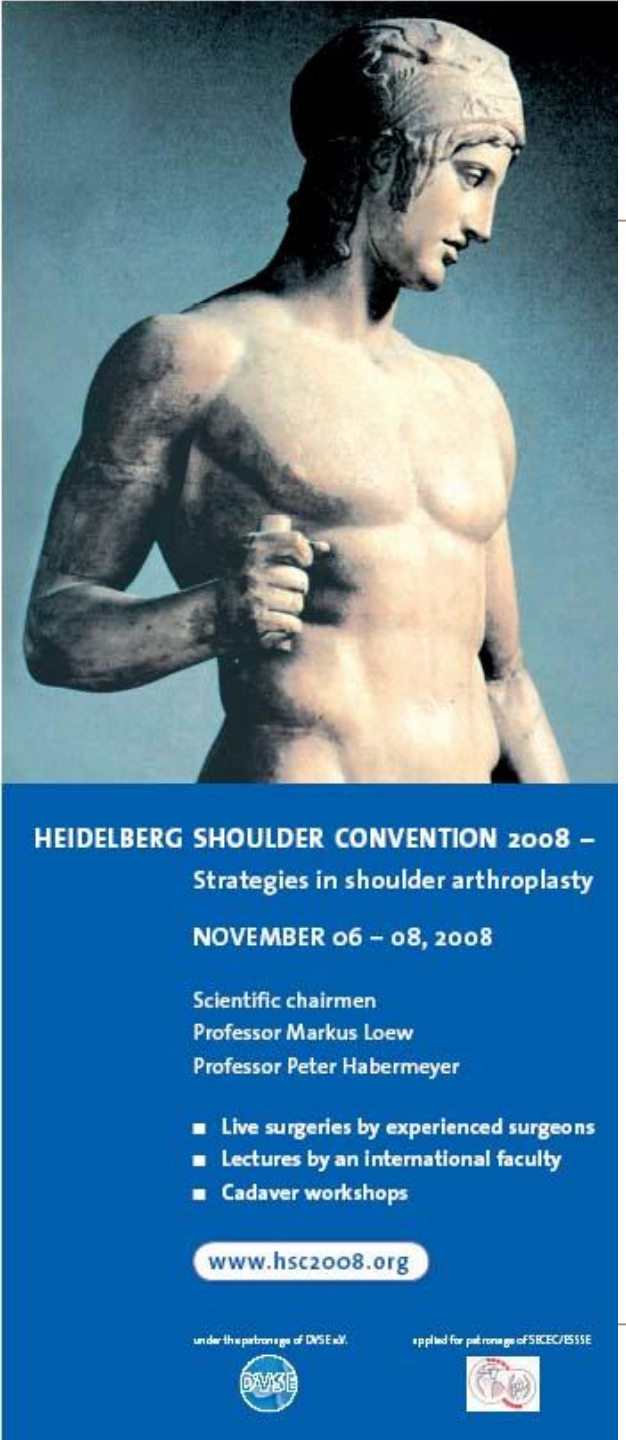
- ✓ NO significant difference in clinical outcome
- ✓ Trend towards lower re-tear rate (21.7% vs 26.3%)

Atrophy

- ✓ Pre-op atrophy influences post-op re-tear rate negatively







ATOS
PRAXISKLINIK HEIDELBERG

HEIDELBERG SHOULDER CONVENTION 2008

STRATEGIES IN SHOULDER ARTHROPLASTY

06. – 08. NOVEMBER 2008


THANK YOU!