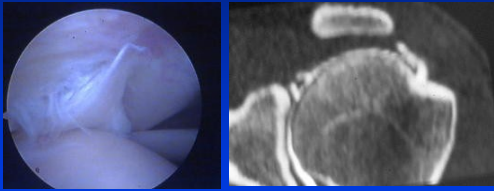


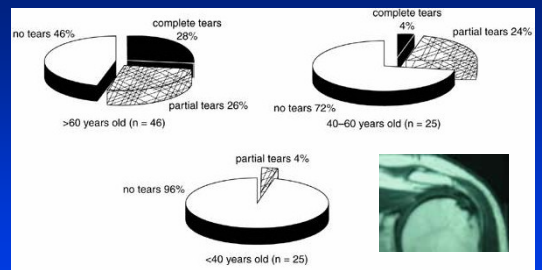
PARTIAL ARTICULAR SIDE TEAR OF THE CUFF



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PREVALENCE IRM STUDIES

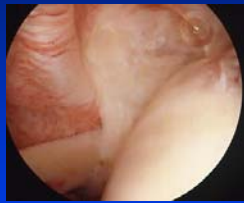


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CHALLENGE

- ETIOLOGY
- VARIOUS CLINICAL SYMPTOMS
- ARTHROSCOPIC DISCOVERY
- NATURAL HISTORY
- TREATMENT

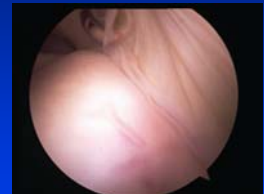


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ETIOLOGY

- MULTIFACTORIAL
- INTERNAL IMPINGEMENT
- GLENOHUMERAL INSTABILITY
 - LIGAMENTOUS LAXITY
 - GLENOHUMERAL ROTATION CENTER
- TENDON DEGENERATION
 - HYPOVASCULARITY
 - OVERUSE

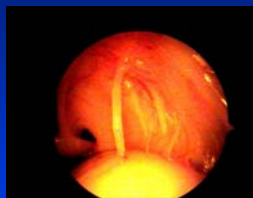


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NATURAL HISTORY

- PARTIAL TEAR WITH NO CLINICAL SYMPTOMS
- EVOLUTION
 - FULL THICKNESS TEAR
 - HEALING

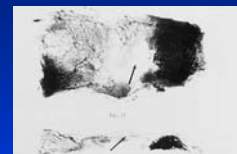
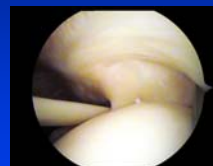


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VASCULARIZATION

- DISTAL/PROXIMAL
- CRESCENT

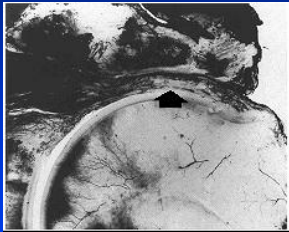


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VASCULARIZATION

- BURSAL/ARTICULAR SIDE

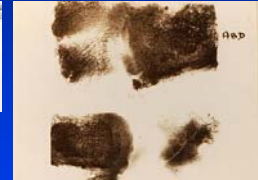
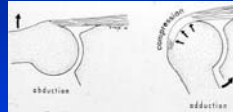


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VASCULARIZATION/OVERUSE

- COMPRESSION
- ABDUCTION/ADDUCTION

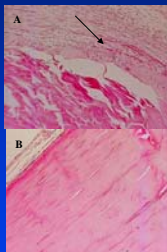


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OVERUSE

- TENDINOSIS
- HYPOVASCULARISATION
- DECREASE Vascular Endothelial Growth factor (VEGF)

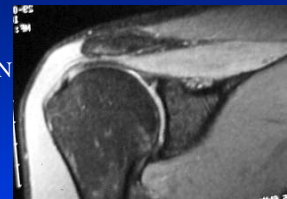


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DEGENERATION

- SENESCENT CHANGES
- MORE FREQUENT IN OLDER
- 40 to 60

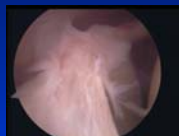


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INTRAARTICULAR IMPINGEMENT

- INTERNAL IMPINGEMENT
- ANTEROSUPERIOR
 - SUBSCAPULARIS
 - C.GERBER
- POSTEROSUPERIOR
 - SUPRASPINATUS
 - G.WALCH
 - C.JOBE

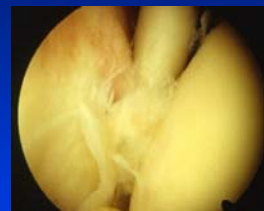


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INTRAARTICULAR IMPINGEMENT

- NO SYMPTOMS
- VARIOUS TENDONS
 - SUPRASPINATUS
 - INFRASPINATUS
 - SUBSCAPULARIS
- VARIOUS ASPECTS
 - DEEPNESS
 - ABRASION
 - FLAP
 - LOCATION
 - MEDIAL/LATERAL

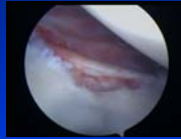


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INTRAARTICULAR IMPINGEMENT

- PRIMARY/SECONDARY
- CUFF OVERUSE
- JOINT LAXITY/INSTABILITY

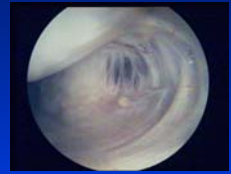


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TREATMENT

- CONSERVATIVE
- PREOPERATIVE EVALUATION
- PRIMARY/SECONDARY
- TRUE OBJECTIVE SIGN OF LAXITY/INSTABILITY
 - APPREHENSION IS NOT ENOUGH
 - RX A°CT A°SCOPY



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TREATMENT

- REHABILITATION
- TENDON
 - DEBRIDEMENT < 50%
 - EXCISION REPAIR
 - ARTHROSCOPIC
 - MINIOPEN
 - DECOMPRESSION

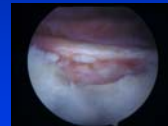
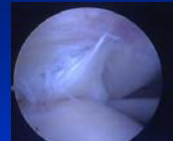


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TREATMENT

- SECONDARY INTERNAL IMPINGEMENT
 - DEBRIDEMENT + INSTABILITY
 - OBJECTIVE SIGNS
- PRIMARY INTERNAL IMPINGEMENT
 - DEBRIDEMENT

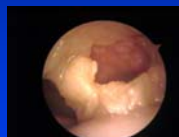


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TREATMENT

- ISOLATED ARTICULAR PARTIAL TEAR
 - DEBRIDEMENT < 50%
 - ACROMIOPLASTY IF ARTHROSCOPIC SIGN OF SUBACROMIAL IMPINGEMENT
 - EXCISION REPAIR > 50%
 - SYSTEMATIC ACROMIOPLASTY

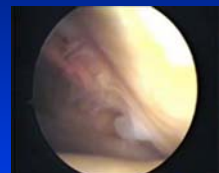
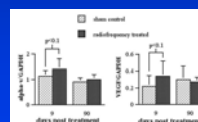


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TREATMENT

- CAN WE INFLUENCE NATURAL HISTORY
- RADIOFREQUENCY CUFF TENDINOSIS
- EXPERIMENTAL



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Material and methods : inclusion criteria



- Retrospective multicentric
- Patients operated for a PASTA lesion
- ArthroCT / MRI / Arthro MRI pre-op
- Clinical evaluation pre and post-op (Constant)
- Minimum Follow-up 12 months

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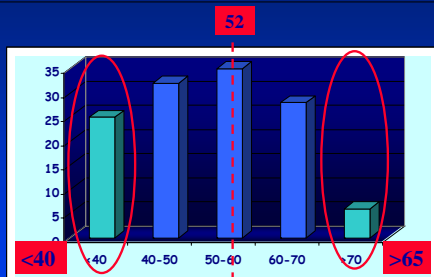
126 patients

- Age: 52 years (29-76)
- 70 % male
- dominant: 74 %
- 54 % manual worker
- 14 % Work Comp

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Patients Age



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- Associated pathologies:
 - 31% cervical pain
- Duration of symptoms :
26 months [16-240]
- Type :
 - 24% Trauma
 - 66% Progressive



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- Normal active ROM: 82%
Flex=161°, ERIA=46°, IR=L3
- Limited passive motion: 6%
Flex=164°, ERI=51°
- Painful AC joint: 22%
- Impingement sign: 58%
- JOBE+ in 63% (5,9kg versus 8,9kg)



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CONSTANT score pre-op:
TOTAL: **53,9** [20-88]

Pain 3,9/15

Activity 9,5/20
Mobility 30,3/40
Force 10,7/25

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Radiological Analysis

- AHH: 10,1 mm [\pm 1,7]
- Acromial hook: 1/2
- Pathological A-C joint: 19%
- Bigliani
 - type I: 11%
 - type II: 51%
 - type III: 38%

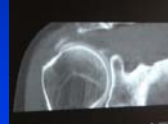


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Preoperative explorations

- ArthroCT: 86 cases (68%)
- MRI: 52 cases (41%)
- Arthro-MRI: 7 cases (5%)



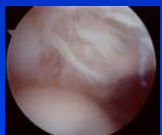
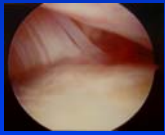
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Arthroscopic features

- 6 isolated subscap tear
- 120 supraspinatus tendon tears
 - fraying
 - Rupture < 50%
 - Rupture > 50%

54	45%
44	37%
22	18%

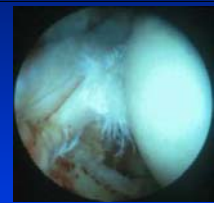


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Associated lesions

♦ Biceps 20,1%



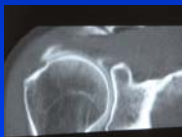
♦ Infrapinatus 9% (n=12)

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Comparison ArthroCT-Arthroscopy

- 42% correct
- 16% overestimated tears
- 42% underestimated tears

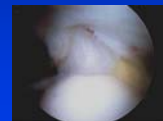


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MRI-arthroscopy

- 58% correct
- 31% underestimated
- 11% overestimated



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Arthroscopic treatment: bone

- Acromioplasty:
 - 7 cases : none
 - 94% acromioplasty
- Acromio-clavicular joint
 - Nothing: 81%
 - Co planning: 9%
 - Resection : 10%

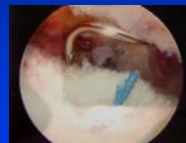


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Arthroscopic treatment

- Tendon:
 - 32%: nothing
 - 55%: debridement +/- flap resection
 - 13%: cuff repair
- LHB:
 - 3% debridement (n=4)
 - 18% tenotomy (n=23)
 - 8% tenodesis (n=10)

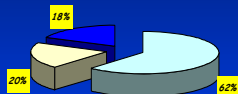


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Subjective Results

- 82% satisfied and very satisfied



Average F-Up: 59.5 months

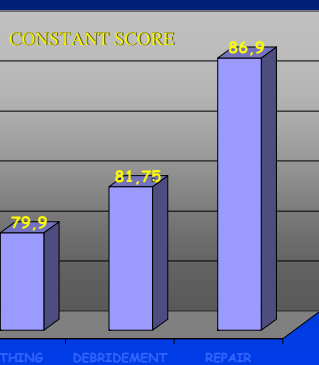
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Objective results

- CONSTANT :
 - TOTAL: 82 points (Gain=+28)
 - Pain 11,8/15
 - Activity 17,4/20
 - Mobility 36,7/40
 - Force 16,1/25

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RESULTS

- Complications 4%
 - 6 adhesive capsulitis
- Professional activities:
 - Normal: 84%
 - Modification: 10%
 - None: 6%




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Radiological Results

ACROMION PRE-OP	ACROMION POST-OP
Type I (11%)	Type I (69%) Cst : 82,6±12
Type II (51%)	Type II (26%) Cst : 80 ± 15
Type III (38%)	Type III (4%) Cst : 91,6 ± 6

NS

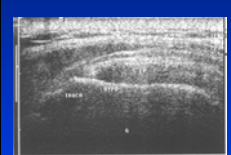


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Ultrasound evaluation

n=91/126


- Cuff tendons:
 - Normal: 55%
 - Thinning: 41%
 - Full thickness tear : 4%



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Results / Age

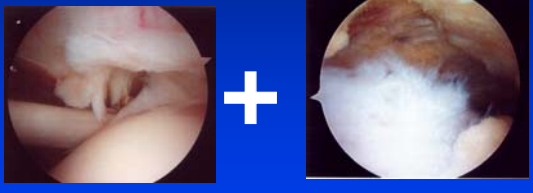
- Age < 40 (n=25)
 - No Overhead sport
 - Trauma
 - Fraying
 - Constant gain : 24 (62->86)
- Age > 65 (n=20)
 - Progressive
 - More severe Lesions
 - Constant gain : 36 (44->80)



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Bipolar partial tears

• N=48




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Bipolar partial tears

No correlation with an aggressive acromion

No difference on results

No correlation with subacromial bursitis on preop MRI



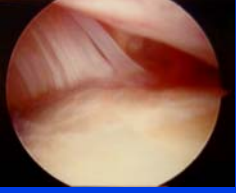
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Results / Type of Treatment

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FRAYING 54 cases	Nothing 20 cases	Debridement 28 cases	Tendon Repair 6 cases
Constant Score	81 ± 12	83 ± 12	83 ± 10

non significant

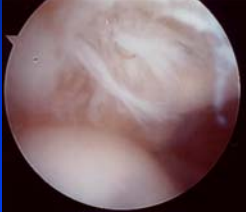


POST OP ULTRASOUND
- normal = 65%
- rupture = 0

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PASTA < 50% 44 cases	Nothing 10 cases	Debridement 33 cases	Tendon Repair 1 cases
Constant	80,5 ± 13	83 ± 12	87

Non significant

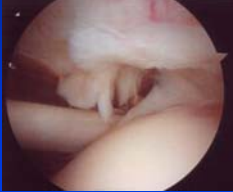


POST OP Ultrasound
- normal = 46%
- rupture = 8%

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PASTA > 50% 22 cases	Nothing 6 cases	Debridement 7 cases	Tendon repair 9 cases
Constant	79 ± 12*	68 ± 23*	91,5 ± 47*

P = 0,018




POST OP Ultrasound
- normal = 38%
- rupture = 8%

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Eleven best results

- Constant: 57,3 → 98,9
- Age: young = 47
- Evolution 23 months
- Isolated supraspinatus
- 3 PASTA >50%, all repaired
- Jobe: 8/11 → 1/11
- 9 ultrasound control: 0 rupture



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Eleven worse results

- Constant: 49,4 → 52,6
- Age: older = 57
- Longer Evolution 47 months
- 4 associated subscap PASTA
- 4 PASTA >50%, no repair
- Jobe: 9/11 → 11/11
- 5 ultrasound: 3 ruptures

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Conclusion (1)

- Role of Acromioplasty (94%)
- Objective results is not correlated to the postoperative aspect of the acromion
- PASTA > 50% behave on their own
- Acromioplasty is not efficient on partial subscap tear
- Systematic LHB tenotomy and/or tenodesis is useless

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Conclusion (2)

- What should we do on the tendon
- Debridement?
 - Fraying
 - PASTA <50% (or nothing)
- Repair ?
 - PASTA >50%

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THANK YOU



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