



SUPERIOR CAPSULAR RECONSTRUCTION: WHY AREN'T WE AS GOOD AS MIHATA?


PRESENTED BY:



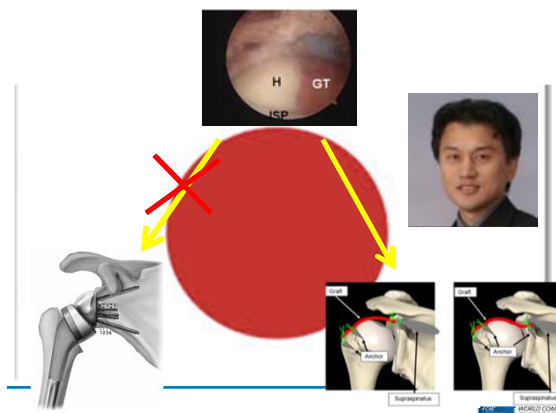
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Shoulder Service

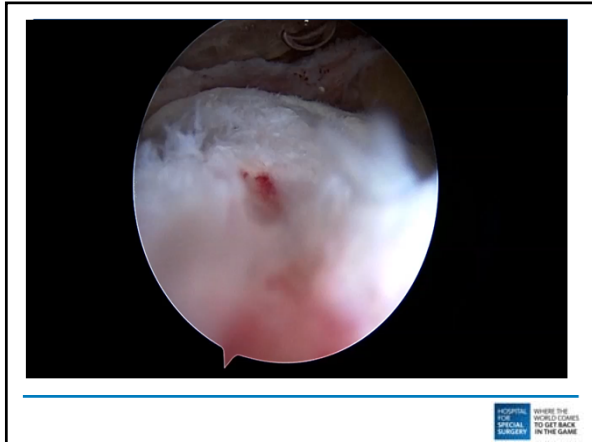


Disclosures

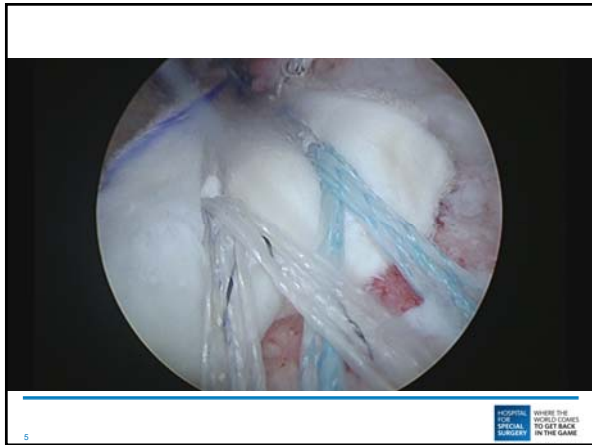
- Consultant: Arthrex, Trice, Motus Global
- Research Support: Arthrex, Motus Global, Trice, ISMR
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HOSPITAL FOR SPECIAL SURGERY WHERE THE WORLD COMES TO GET BACK IN THE GAME



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How Does it Work?

- Prevents superior escape
- Decrease bony impingement of greater tuberosity on acromion
- Improve deltoid function by re-centering humeral head

Coronal Force Couple

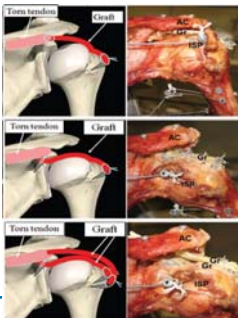
Deltoid and supraspinatus both contribute to abduction equally. As the arm is abducted the resultant joint reaction force is directed towards the glenoid. This compresses the humeral head against the glenoid and improves the stability of the joint when the arm is abducted and overhead. [Gross et al., 2002]

Figure 15-43

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Superior Capsule Reconstruction to Restore Superior Stability in Irreparable Rotator Cuff Tears
A Biomechanical Cadaveric Study
 Teruhisa Mihata,^{1,2,3} MD, PhD, Michelle H. McQuerry,^{1,2} MS, Joseph M. Pirolo,^{1,2} MD, Mitsuo Kinoshita,² MD, PhD, and Thay Q. Lee,^{1,2} PhD

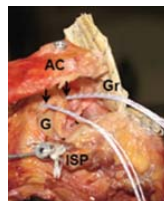
- Cadaveric study to compare superior stability among 3 types of patch grafting
 - Patch to reconstruct Supraspinatus (A)
 - Patch to reconstruct Superior Capsule (B)
 - Patch to reconstruct Both (C)
- Tested:
 - superior translation
 - subacromial contact pressures
 - GH compression force



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- All grafts restored subacromial contact pressures
- GH compression force not altered by any graft
- Groups B and C fully restored superior translation




ATTACH GRAFT MEDIALY TO GLENOID

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Clinical Results of Arthroscopic Superior Capsule Reconstruction for Irreparable Rotator Cuff Tears
 Teruhisa Mihata, M.D., Ph.D., Thay Q. Lee, Ph.D., Chisato Watanabe, M.D., Ph.D., Kazumasa Fukunishi, M.D., Atsuharu Ohno, M.D., Tomoyuki Tsujinaka, M.D., and Mitsuo Kinoshita, M.D., Ph.D.

Mihata et al *Arthroscopy* 2013



- 24 shoulders
- Avg age: 65 yrs (52-77)
- Irreparable RC Tear
- Fascia Lata Autograft
 - 6-8mm thick
 - 3cm AP
 - 6cm Med-Lat



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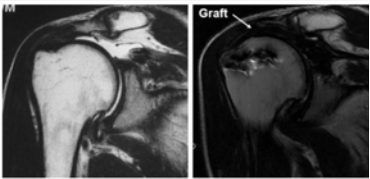

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- AHD increased avg 4.1mm
- 83% at minimum 2 yr f/u
 - 4 retears: 1 graft; 3 infraspinatus
- Active FE: 84->148
- Active ER: 26-> 40
- ASES score: 23 -> 92





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- STRUCTURAL RESULTS

Are we as good as Mihata?



Besides Mihata's, Papers presenting outcomes:

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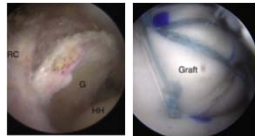


Preliminary Results of Arthroscopic Superior Capsule Reconstruction with Dermal Allograft

Patrick J. Denard, M.D., Paul C. Brady, M.D., Christopher R. Adams, M.D., John M. Tokish, M.D., and Stephen S. Burkhart, M.D.



- 59 patients
- Avg age: 62 yrs (52-77)
- 1 year follow up
- Arthroflex Patch
 - 1-3mm

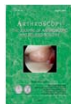


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- No change in AH distance
- Flex 130-> 158
- ER 36 -> 55
- ASES 43 -> 77



"100% of the patients with grafts that healed had a successful outcome"

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- 45% healing rate via MRI
- 18.6% revision surgery rate
 - 7 Reverse Shoulder Arthroplasties
- Terrible Results with thinner grafts
 - Success w/ 1mm graft: 40%

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So why aren't we as good as Mihata?

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Biomechanical Effect of Thickness and Tension of Fascia Lata Graft on Glenohumeral Stability for Superior Capsule Reconstruction in Irreparable Supraspinatus Tears

Teruhisa Mihata, M.D., Ph.D., Michelle H. McGarry, M.S., Timothy Kahn, B.A., Iliya Goldberg, M.S., Masashi Neo, M.D., Ph.D., and Thay Q. Lee, Ph.D.



- SCR normalized the superior stability of the shoulder joint when attached at 10 or 30° of abduction
- **8mm thick Fascia Lata had better results than 4mm**



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MEASURE GRAFT PRECISELY

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Papers describing technique:

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Biomechanical Role of Capsular Continuity in Superior Capsule Reconstruction for Irreparable Tears of the Supraspinatus Tendon

Touhisa Mizuta,¹ MD, PhD, Michelle M. McGarry,² MS, Timothy Kahn,¹ BA, Rita Goldberg,³ MS, Masashi Iwano,¹ MD, PhD, and Tracy G. Lee,¹ PhD

Sports Medicine

- Side to side sutures of graft to remaining infraspinatus help restore superior stability of the shoulder
- *No effect of anterior sutures*

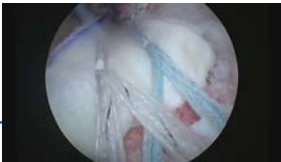
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Personal Results

- 28 cases
- 3-4mm Arthroflex patch
- 17 patients with more than 6 month follow up
- 15/17 (88%) Successful outcomes (ASES, SANE)
 - 1 with confirmed failure of posterior medial glenoid attachment
 - 1 with tear posterior to graft

*Limited term follow up
Larger HSS study underway*



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Conclusions

- SCR has mixed results in the very few clinical reports
- Mihata's results **are** better
 - Consistent technique
 - **Thicker graft**
 - ? **Better (easier) patient selection?**

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Conclusions

What can we do better?

- **Get the graft to heal!**
 - Improved technique/glenoid fixation
 - Use thicker, longer graft
- **Need more mid-term/long-term data**

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THANK YOU

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