8* CONVEGNO

MIA MANIPULATIONS ITALIAN ACADEMY

21 E 22 OTTOBRE 2023

OLY HOTEL - ROMA

VIA SANTUARIO REGINA DEGLI APOSTOLI 36

richiesto patrocinio di:
OMCeO Roma
e
OFI LAZIO

SHOULDER ACADEMY

THE PROSTHETIC SHOULDER: ANATOMICAL VERSUS REVERSE

Dott.ssa Elena Silvestri
Dr. Filippo Parisi
Dr. Giovanni Di Giacomo

HOW TO APPROACH TO A TSA?

DIAGNOSTIC FRAMEWORK

JOINT ASSESSMENT & **PATIENT SELECTION**

Normal glenoid vault anatomy and validation of a novel glenoid implant shape

Michael J. Codsi, MD,[e,f] Craig Bennetts, MS,[a,c] Katherine Gordiev, MD,[b] Daniel M. Boeck,[h] Young Kwon, MD, PhD,[g] John Brems, MD,[b] Kimerly Powell, PhD,[a,b,c,d] and Joseph P. Iannotti, MD, PhD,[a,b,c,d]
Cleveland, OH, and New York, NY

Location of the Optimized Centerline of the Glenoid Vault: A Comparison of Two Operative Techniques with Use of Three-Dimensional Computer Modeling

By Gregory S. Lewis, PhD, Chris D. Bryce, MD, Andrew C. Davison, MS, Christopher S. Hollenbeak, PhD, Stephen J. Piazza, PhD, and April D. Armstrong, BSc(PT), MD, MSc, FRCSC

Glenoid deformity in the coronal plane correlates with humeral head changes in osteoarthritis: a radiographic analysis

Nael Hawi, MD[a,b,*], Petra Magosch, MD[c,d], Mark Tauber, MD[a,e], Sven Lichtenberg, MD[c], Frank Martetschläger, MD[a], Peter Habermeyer, MD[a]

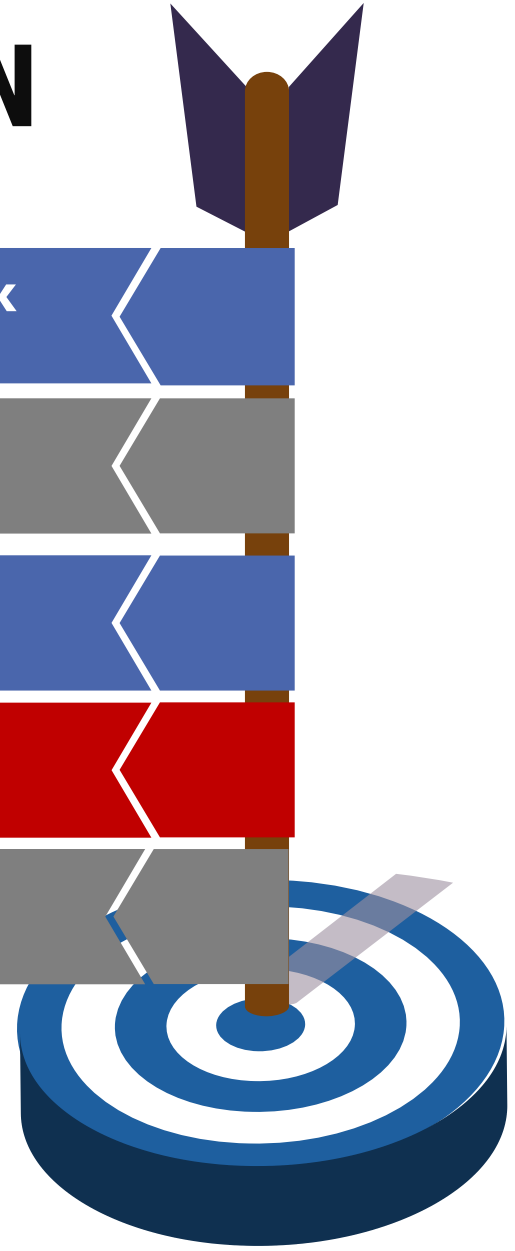
Glenoid version: How to measure it? Validity of different methods in two-dimensional computed tomography scans

Dominique M. Rouleau, MD, MSc, FRCSC[a,*], Jacob F. Kidder, MD[b], Juan Pons-Villanueva, MD[c], Savvas Dynamidis, MD[d], Michael Defranco, MD[e], Gilles Walch, MD[f]

Static posterior humeral head subluxation and total shoulder arthroplasty

Christian Gerber, MD*, John G. Costouros, MD, Atul Sukthankar, MD, Sandro F. Fucentese, MD

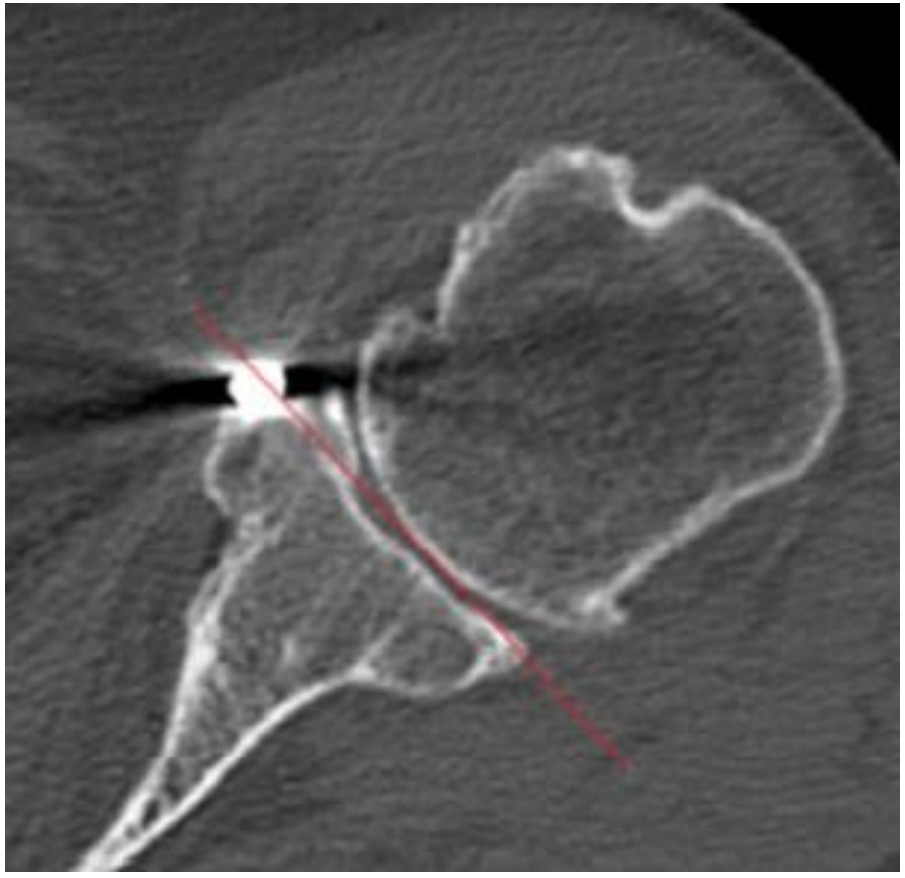
- **Imaging Diagnostic Framework (XR – MRI – TC)**
- **Subcondral Bone Preserved**
- **Glenoid Iclination< 10°**
- **Glenoid Retroversion <10°**
- **HH Subluxation <80%**



SHOULDER CHANNEL tv

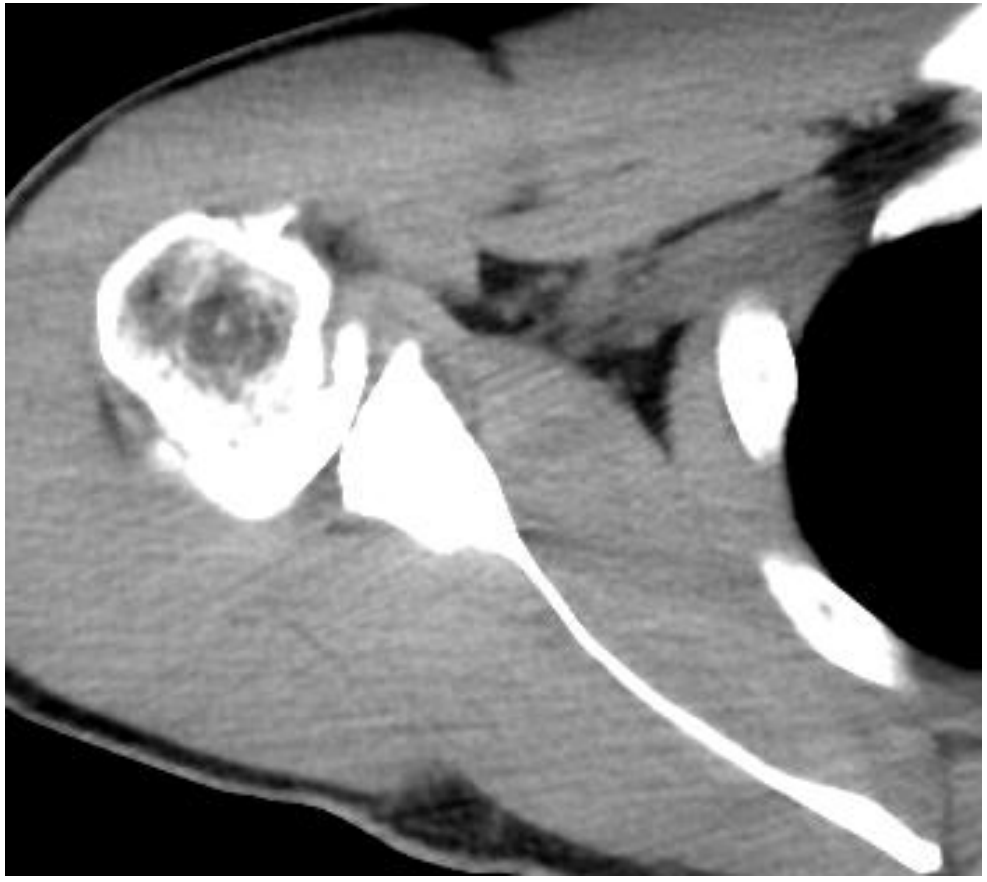
SHOULDER ACADEMY

WHO IS MY PATIENT?



Long-term prevalence and impact of glenohumeral osteoarthritis after Latarjet-Patte procedure for anterior instability

Clément Lalanne[1], Thomas Vervoort[2], Xavier Cassagnaud[3], Christophe Szymanski[1], Caroline Bourgault[1], Cecile Pougès[1], Carlos Maynou[1]



Walch B0 glenoid: pre-osteoarthritic posterior subluxation of the humeral head

Peter Domos, MD, FRCS[a,*], Caio Santos Checchia, MD[b], Gilles Walch, MD[c]

AI DISFUNCTIONAL PATTERNS

Comparative electromyographic analysis of shoulder muscles during planar motions: Anterior glenohumeral instability versus normal

Patrick J. McMahon, MD, Frank W. Jobe, MD, Marilyn M. Pink, PhD, PT, John R. Brault, MS, PT, and Jacquelin Perry, MD, *Inglewood, Calif.*

Scapular inclination and inferior stability of the shoulder

Eiji Itoi, MD, Neil E. Motzkin, MD, Bernard F. Morrey, MD, and Kai-Nan An, PhD, *Rochester, Minn.*

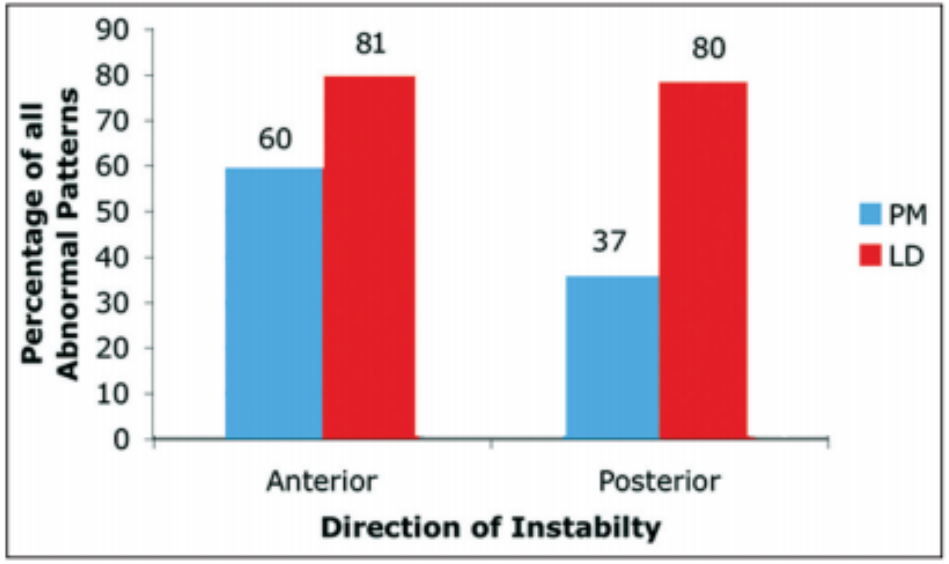
Journal of Shoulder and Elbow Surgery

Original Article

Muscle activation patterns in patients with recurrent shoulder instability

Anju Jaggi, Ali Noorani, Alex Malone, Joseph Cowan, Simon Lambert, Ian Bayley

Access this article online
Website: www.internationalshoulderjournal.org
DOI: 10.4103/0973-6042.106221
Quick Response Code:



- Latississimus dorsi 81%
- Pec major 60%
- *Pec Minor*
- *Serratus Anterior*
- *Lower Trap*

PI DIFUNCTIONAL PATTERNS

Original Article

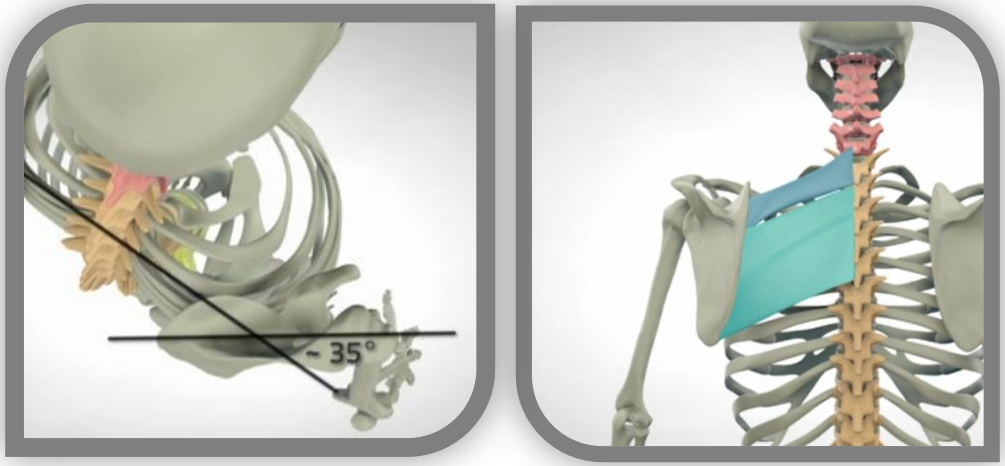
Muscle activation patterns in patients with recurrent shoulder instability

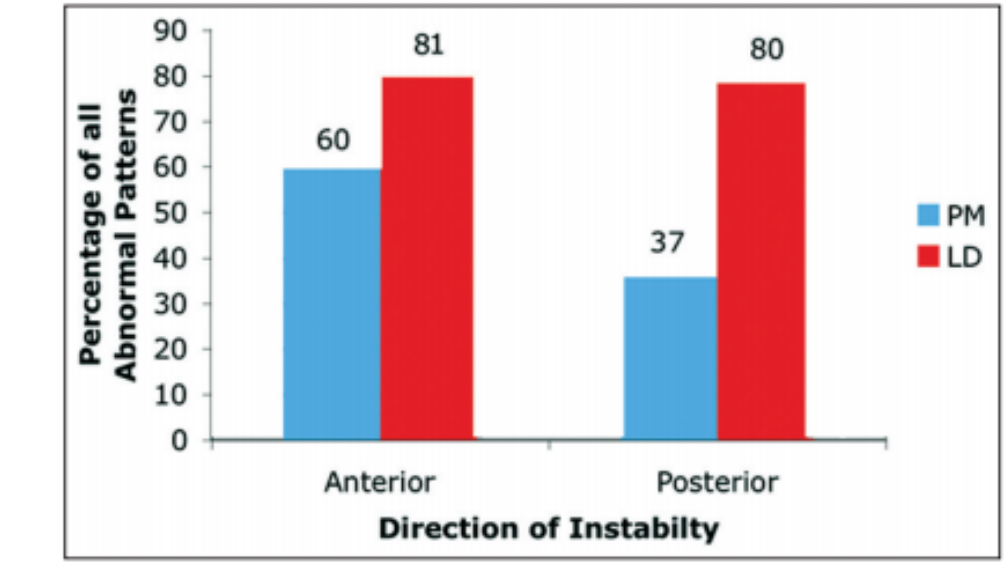
Anju Jaggi, Ali Noorani, Alex Malone, Joseph Cowan, Simon Lambert, Ian Bayley

Access this article online
Website: www.internationalshoulderjournal.org
DOI: 10.4103/0973-6042.106221
Quick Response Code:

Use of shoulder pacemaker for treatment of functional shoulder instability

Proof of concept





Latississimus dorsi 81%

Infraspinatus

Romboids and Middle Trap

CULTURAL OVELAP: WHAT TO KNOW

PATHOLOGY

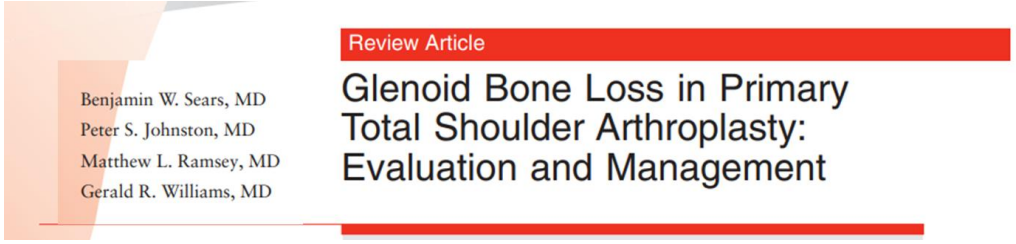
SURGICAL PROCEDURE

BIOMECHANICAL IMPLICATIONS

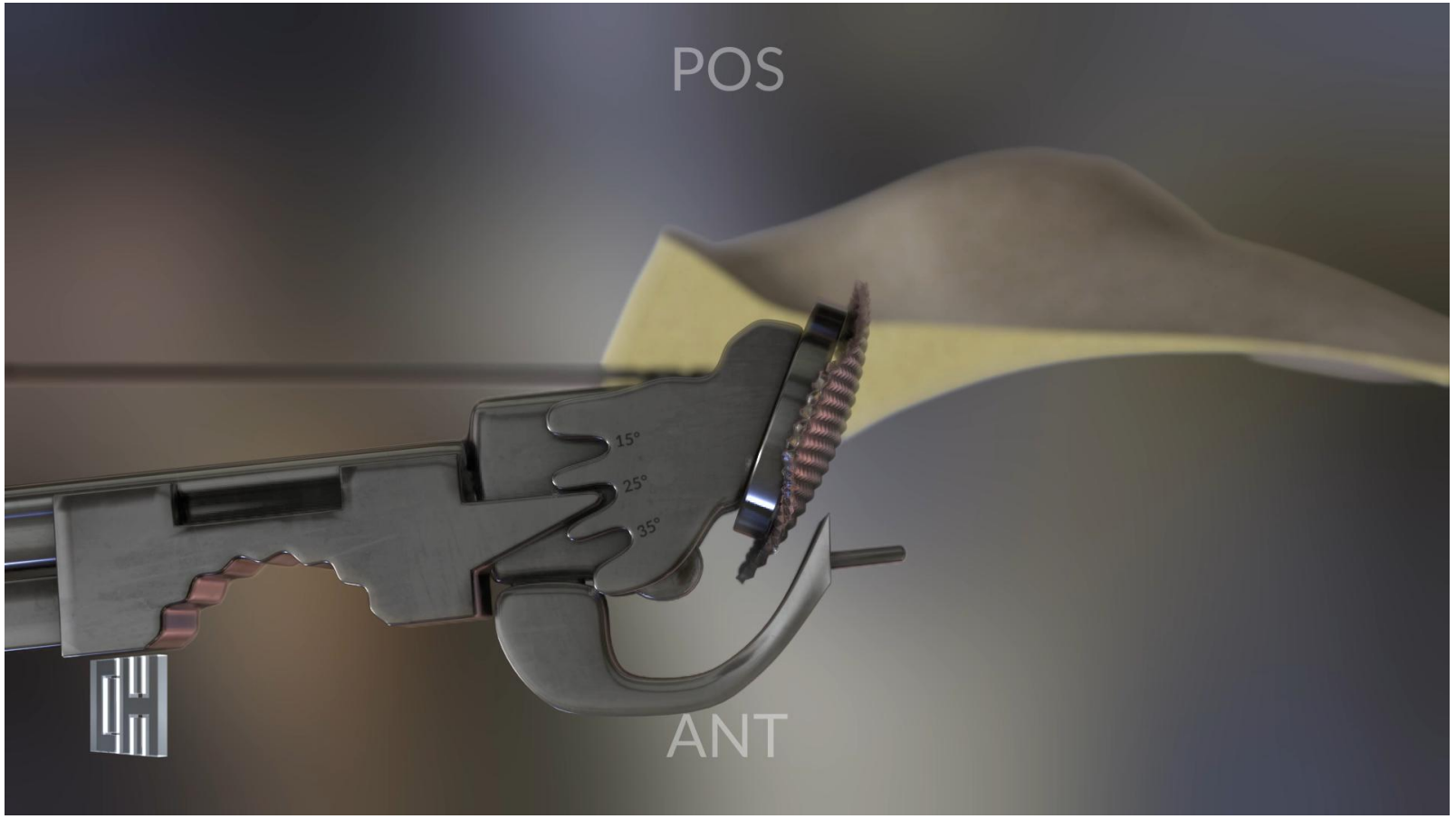
SURGICAL PROCEDURE'S GOALS

→ Restore the bone deformity

→ Restore the soft tissue right tension



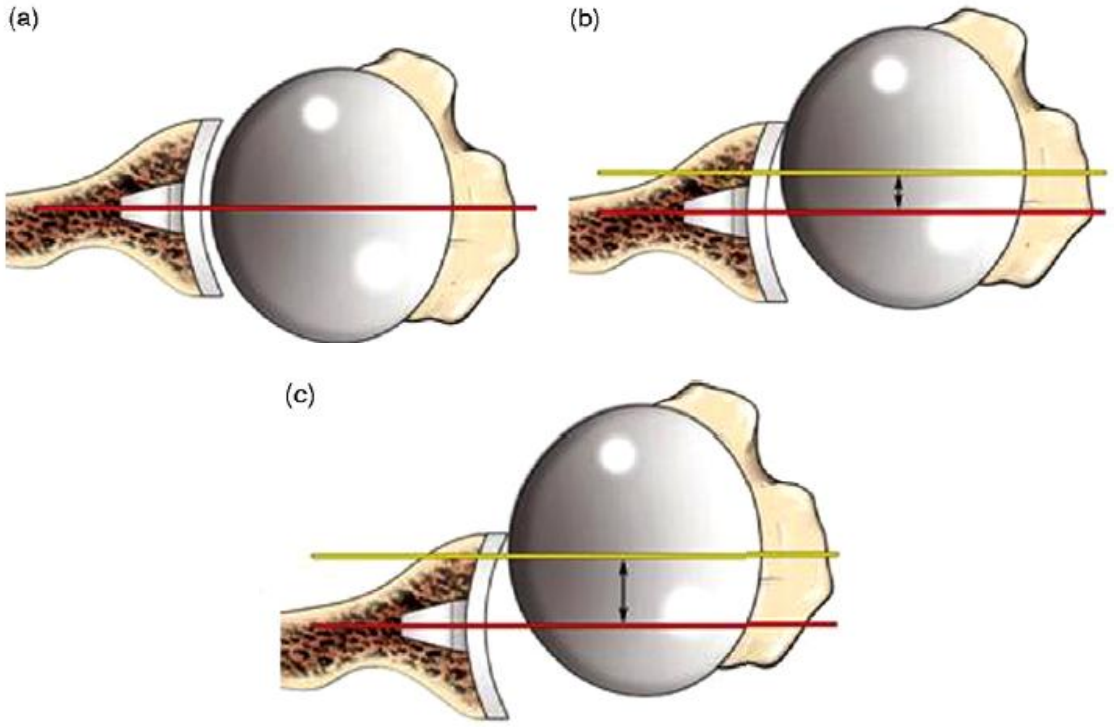
RESTORE THE BONE DEFORMITY



A modification to the Walch classification of the glenoid in primary glenohumeral osteoarthritis using three-dimensional imaging

Michael J. Bercik, MD[a,*], Kevin Kruse II, MD[b], Matthew Yalizis, MBBS, FRACS[c], Marc-Olivier Gauci, MD, MSc[d], Jean Chaoui, PhD[e], Gilles Walch, MD[f]

RESTORE SOFT TISSUE RIGHT TENSION



Radiographic analysis of shoulder anatomical arthroplasty

Giovanni Merolla[a,*], Francesco Di Pietto[b], Stefania Romano[b], Paolo Paladini[a], Fabrizio Campi[a], Giuseppe Porcellini[a]

[a] Unit of Shoulder and Elbow Surgery, "D. Cervesi" Hospital, L. Van Beethoven 46 Street, 47841 Cattolica (RN), Italy
[b] Department of Diagnostic Imaging, "A. Cardarelli" Hospital, Naples, Italy

ELSEVIER

The main cause of instability after unconstrained shoulder prosthesis is soft tissue deficiency

Journal of Shoulder and Elbow Surgery
www.elsevier.com/locate/ymse

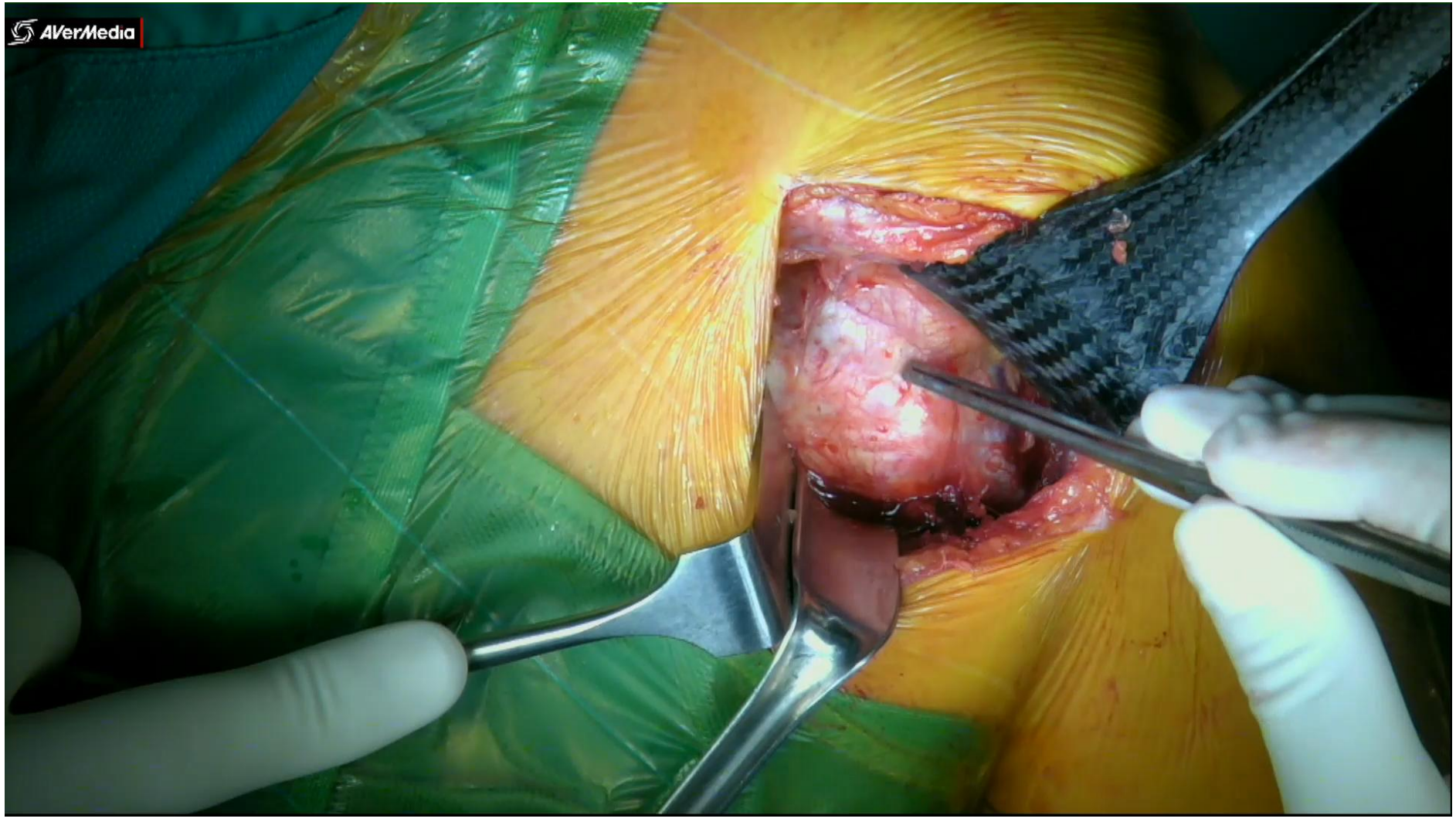
Jean Kany, MD[a,*], Jijo Jose, DNB[b], Denis Katz, MD[c], Jean David Werthel, MD[d], Padmanaban Sekaran, MSc PT[e], Rajkumar S. Amaravathi, DNB[f], Philippe Valenti, MD[d]

HOW TO APPROACH TO A TSA?

DIAGNOSTIC FRAMEWORK

ROTATOR CUFF EFFICENCY

SUBSCAP REPAIR!



PLAN A REHAB APPROACH

Chronic irreparable subscapularis deficiency is a contraindication to ATSA as it tends to destabilize the joint secondary to an upward migration of the humeral head and eccentric contact pressure onto the glenoid. While subscapularis preserving approaches have been described, most surgeons access the glenohumeral joint by subscapularis detachment with either a tenotomy, peel, or lesser tuberosity osteotomy. **Effective subscapularis repair during surgery therefore mandatory**.

Patrick Goetti[1]
Patrick J. Denard[2]
Philippe Collin[3]
Mohamed Ibrahim[4]
Adrien Mazzolari[5]
Alexandre Lädermann[5–7]

EFORT open reviews Shoulder & Elbow

Biomechanics of anatomic and reverse shoulder arthroplasty

The ability to restore functional internal rotation after
shoulder arthroplasty is an important goal of surgery
Restoration of functional internal rotation after primary
shoulder arthroplasty is necessary to perform several important ADLs. Perianal hygiene, dressing, and bathing
are several ADLs that necessitate adequate functional recovery of internal rotation.
Understanding of the normal
shoulder range of motion is imperative to determine
restoration of internal rotation after anatomic and reverse
shoulder arthroplasty.

Functional internal rotation after shoulder arthroplasty: a comparison of anatomic and reverse shoulder arthroplasty

Jacob J. Triplet, BS[a,*], Nathan G. Everding, MD[b], Jonathan C. Levy, MD[b], Molly A. Moor, MPH[b]

Journal of Shoulder and Elbow Surgery

PLAN A REHAB APPROACH

Restoring ROM and strength following TSA is considered important for patients to obtain a good outcome post-surgery and, when applied early, may offer more rapid recovery. Despite this, there is a paucity of research evidence to inform clinical practice. Given the rising incidence of TSAs, especially reverse TSA, this review demonstrates the urgent need for high-quality, adequately powered RCTs to determine the effectiveness of rehabilitation program following these surgeries.

Effectiveness of formal physical therapy following total shoulder arthroplasty: A systematic review

Shoulder & Elbow

Peter K Edwards[1], Jay R Ebert[1], Chris Littlewood[2], Tim Ackland[1] and Allan Wang[1,3,4]

TABLE II Grades of Recommendation for Rehabilitation After Shoulder Arthroplasty

Intervention	Grade* ATSA	Grade* RTSA
Sling utilization		
Use of sling	B	B
Type of sling	I	I
Duration of sling wear	I	C
Motion		
Early-motion protocol	B	I
Delayed-motion protocol	B	I
Motion restrictions	I	I
Formal postoperative therapy/strengthening	I	I
Home-based postoperative therapy/strengthening	C	I

*ATSA = anatomic total shoulder arthroplasty, and RTSA = reverse total shoulder arthroplasty. Grade A: good evidence (Level-I studies with consistent findings) for or against recommending intervention. Grade B: fair evidence (Level-II or III studies with consistent findings) for or against recommending intervention. Grade C: conflicting or poor-quality evidence (Level-IV or V studies) not allowing a recommendation for or against intervention. Grade I: there is insufficient evidence to make a recommendation.

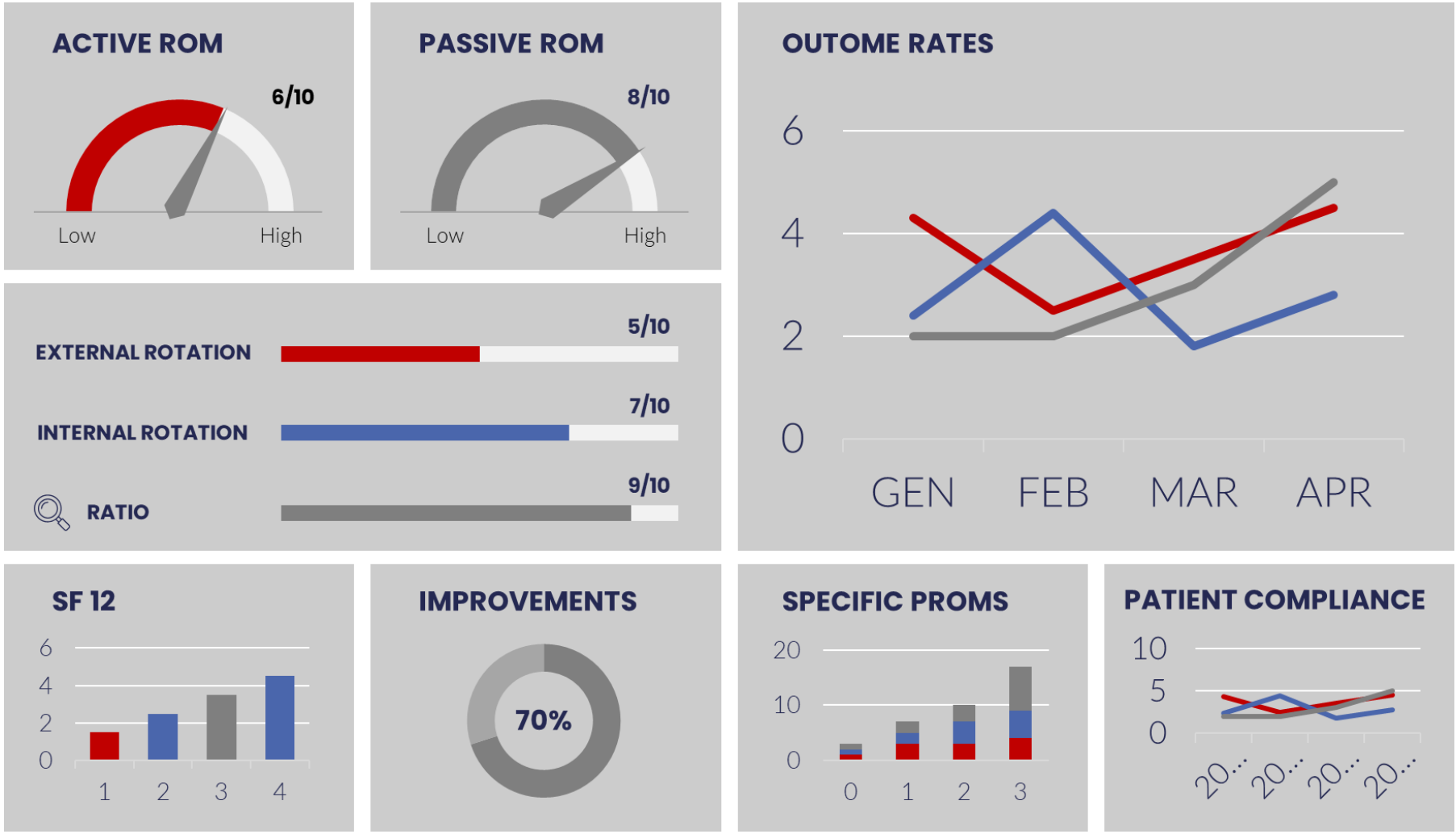
REHABILITATION AFTER ANATOMIC AND REVERSE TOTAL SHOULDER ARTHROPLASTY

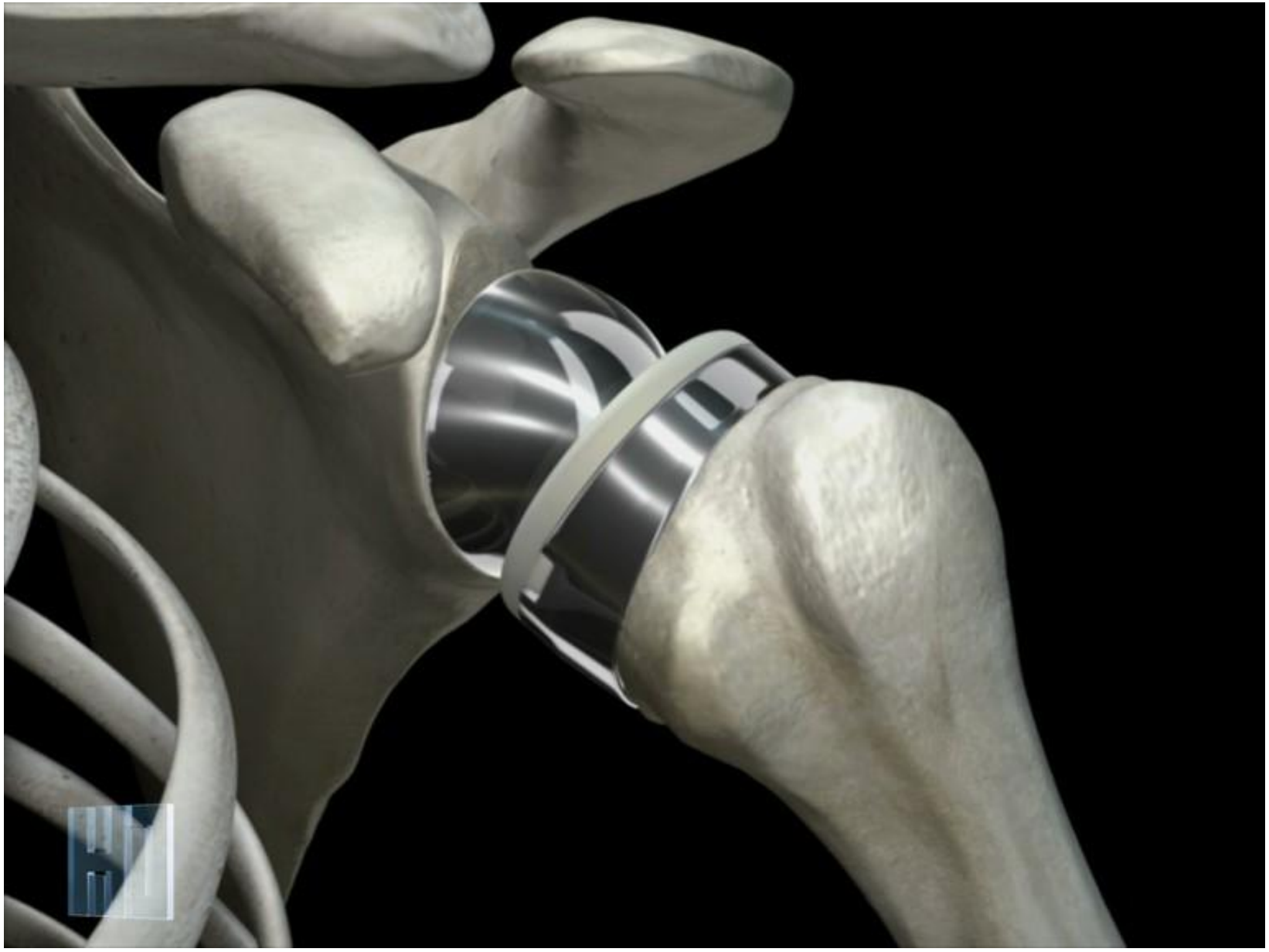
JB&JS REVIEWS

A Critical Analysis Review

Jacob M. Kirsch, MD
Surena Namdari, MD, MSc

PROVIDE AN ASSESSMENT & COLLECTING DATA





APPROACH TO A **RTSA** IN **3 MOVES**

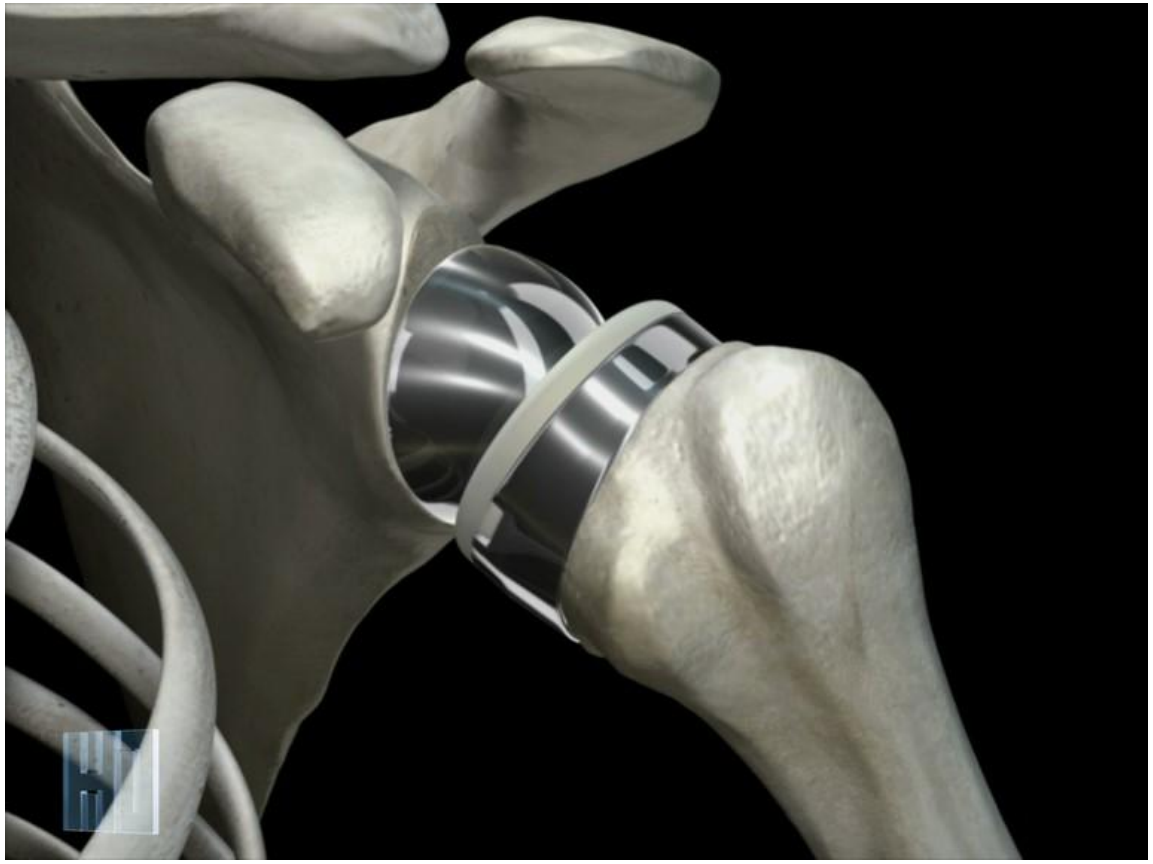
DIAGNOSTIC FRAMEWORK

SHOULDER CHANNEL tv

SHOULDER ACADEMY

APPROACH TO A **RTSA** IN **3 MOVES**

- PRIMARY OA?
- PHF?
- OTHER SURGERY?



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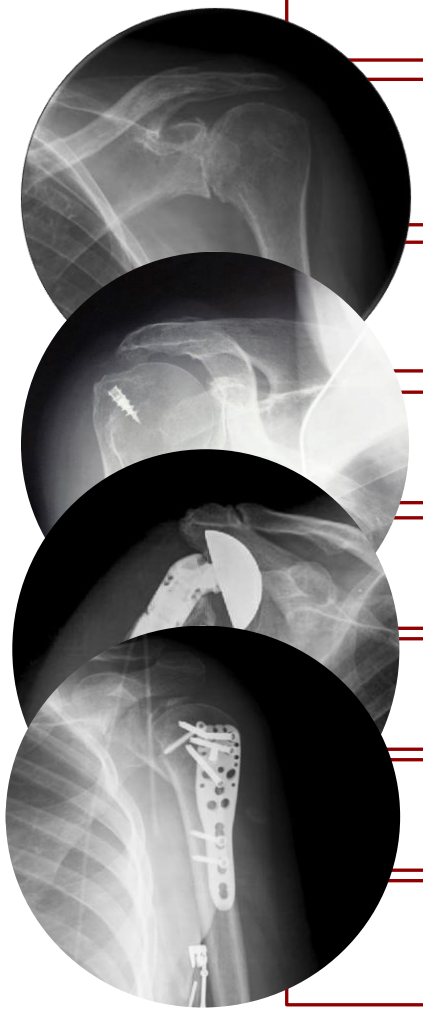
PATIENT HISTORY



MASSIVE ROTATOR CUFF TEARS
(HAMADA I-II-II)

CUFF ARTHROPATY
(HAMADA IV AND V)

OSTEOARTHROSIS

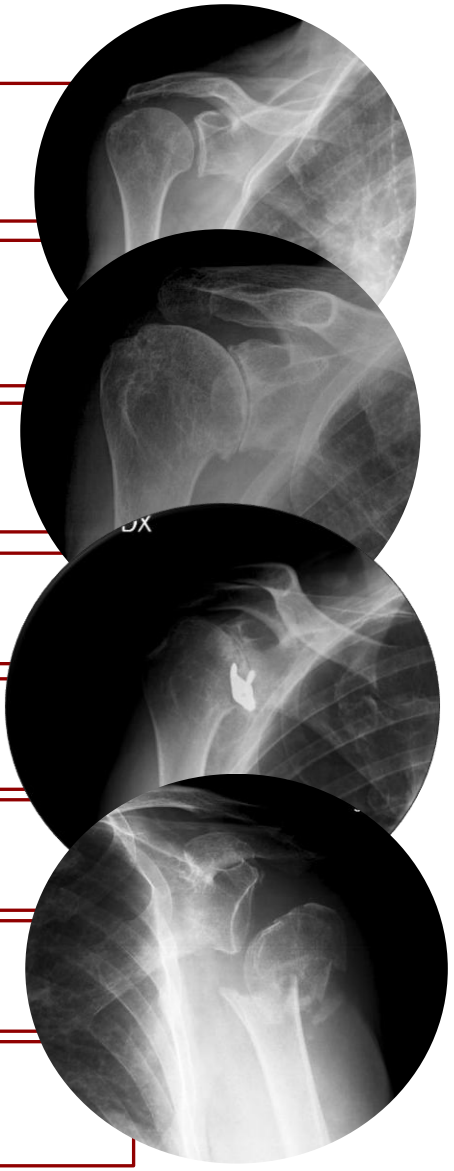
CUFF REPAIR FALIURE
MINIMUM 5-YEARS FOLLOW-UP

INSTABILITY

TSA FALIURE

ACUTE PHF

FRACTURE SEQUELAE

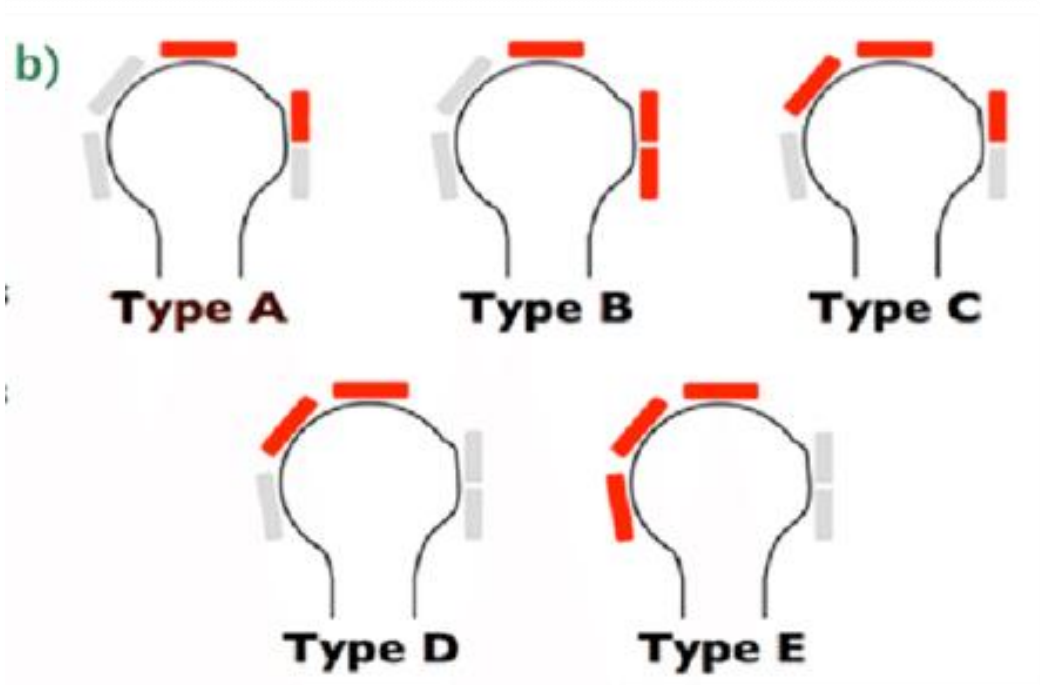


APPROACH TO A **RTSA** IN **3 MOVES**

DIAGNOSTIC FRAMEWORK

ROTATOR CUFF ?

WHAT ABOUT THE CUFF?



Relationship between massive chronic rotator cuff tear pattern and loss of active shoulder range of motion

Philippe Collin, MD[a,*], Noboru Matsumura, MD[b], Alexandre Lädermann, MD[c,d,e], Patrick J. Denard, MD[f], Gilles Walch, MD[g]

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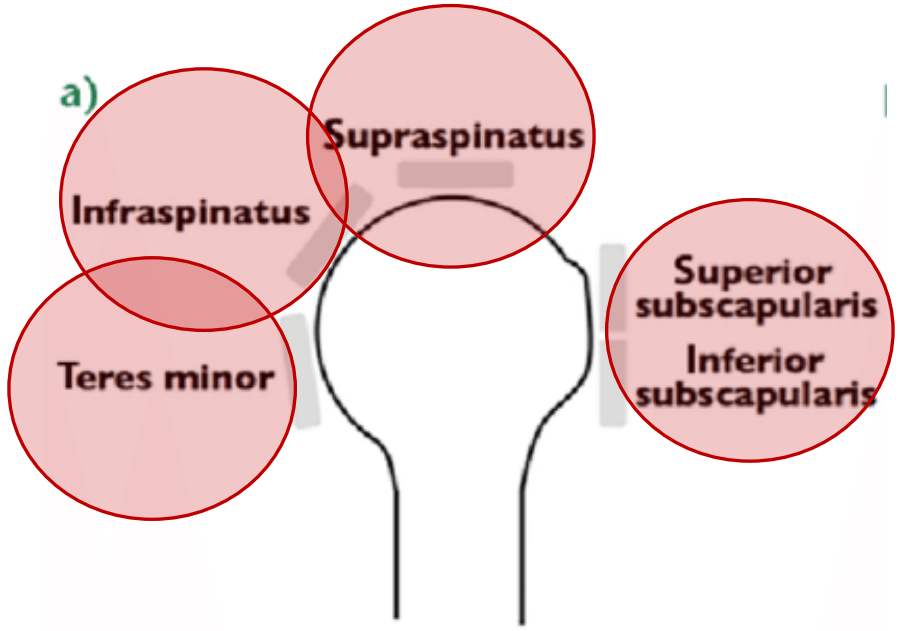


Age-related prevalence of rotator cuff tears in asymptomatic shoulders

Siegbert Tempelhof, MD, Stefan Rupp, MD, and Romain Seil, MD, *Homburg, Germany*

HOW TO APPROACH TO A RTSA?

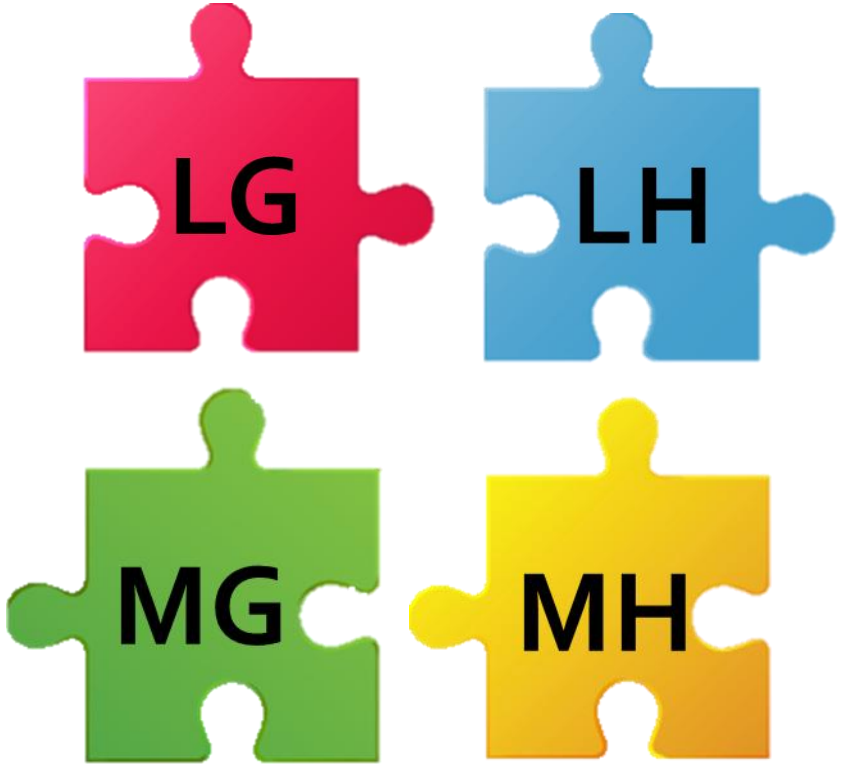
DIAGNOSTIC FRAMEWORK

ROTATOR CUFF ?

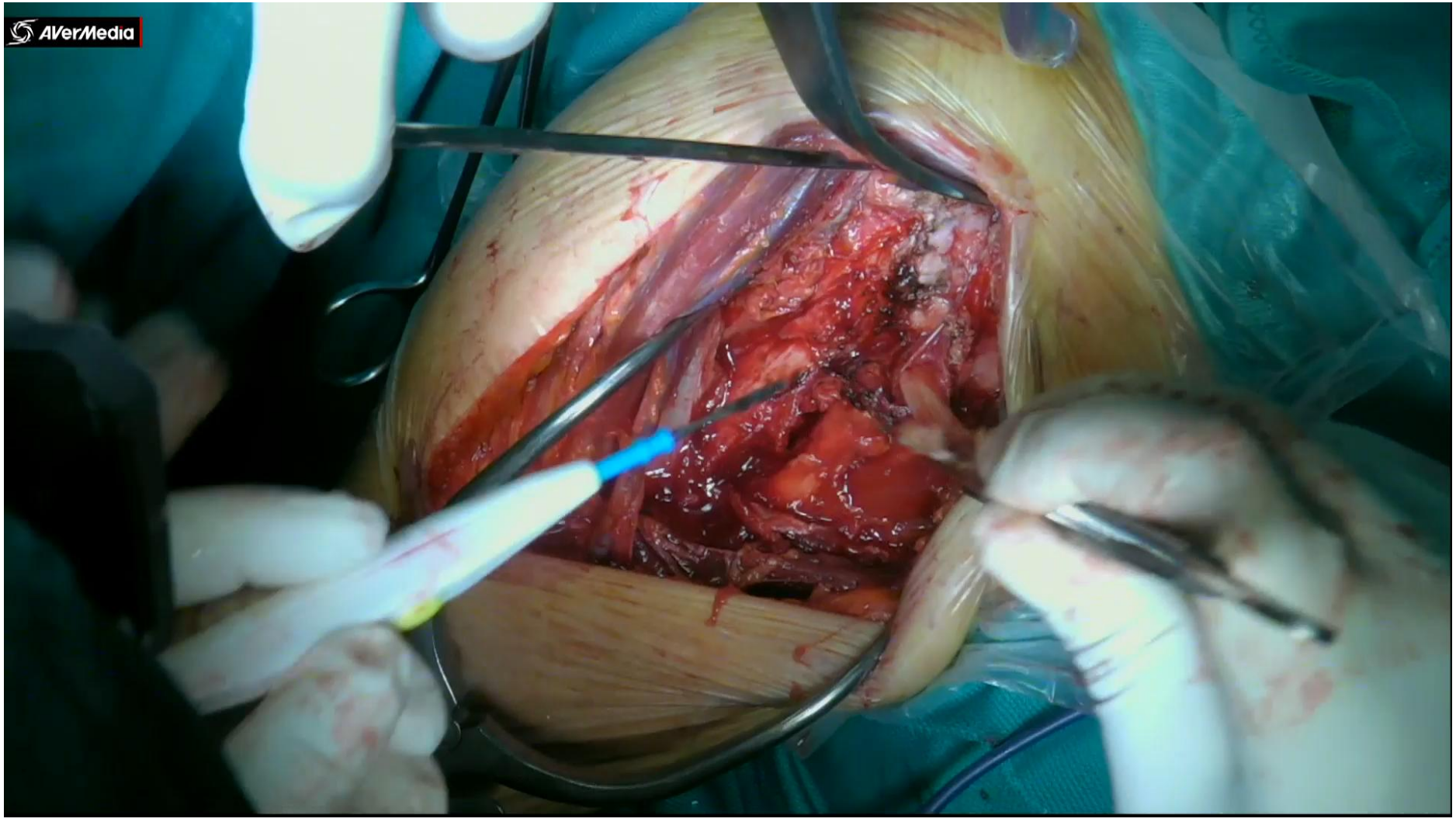
KNOW THE SURGERY

KNOW THE SURGERY

- *Lateralization/Medialization*
- *Distalizzation*
- *Inferior Tilt*
- *Avoid Scapular Notching*
- *Deltoid Wrapping*
- *Mantain the rotations*



SUBSCAPOLARIS REPAIR?



SUBSCAPOLARIS REPAIR

Table I Functional score data

Outcome	Subscapularis repair (group 1)	Subscapularis tenotomy (group 2)	*P* value
SPADI score	23.4	23.2	>.999
ASES score	77.7	79.3	.709
UCLA shoulder score	28.3	28.8	.617
SST-12 score	9.2	9.1	.994
Normalized Constant score	72.6	72.7	.969

ASES, American Shoulder and Elbow Surgeons; SPADI, Shoulder Pain and Disability Index; SST-12, 12-Item Simple Shoulder Test; UCLA, University of California, Los Angeles.

Table II Range-of-motion and strength data

Outcome score	Subscapularis repair (group 1)	Subscapularis tenotomy (group 2)	*P* value
Active external rotation	24°	26°	.372
Passive external rotation	44°	49°	.119
Active forward elevation	120°	122°	.606
Active internal rotation	L2	L2	.967
Active abduction	109°	112°	.461
External rotation strength	9.9 lb	9.9 lb	.463

Primary reverse total shoulder arthroplasty outcomes in patients with subscapularis repair versus tenotomy

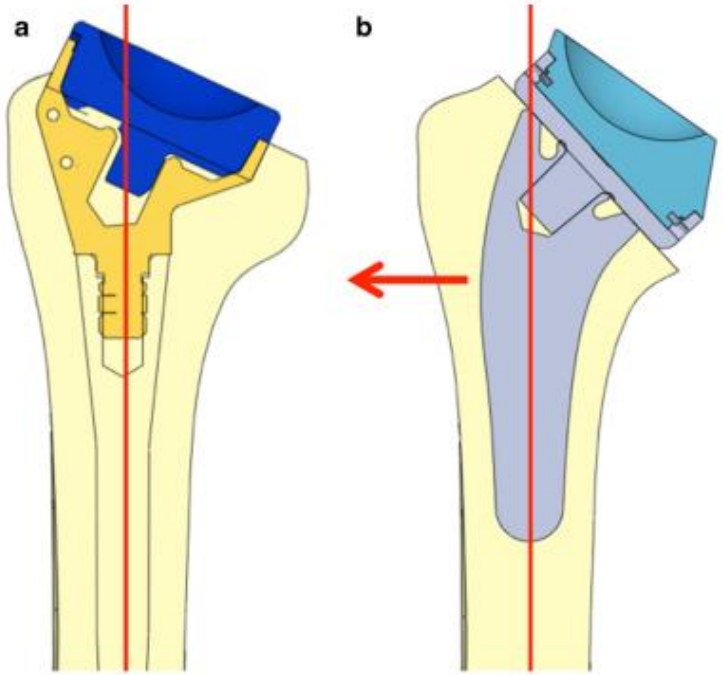
Journal of Shoulder and Elbow Surgery
www.elsevier.com/locate/ymse

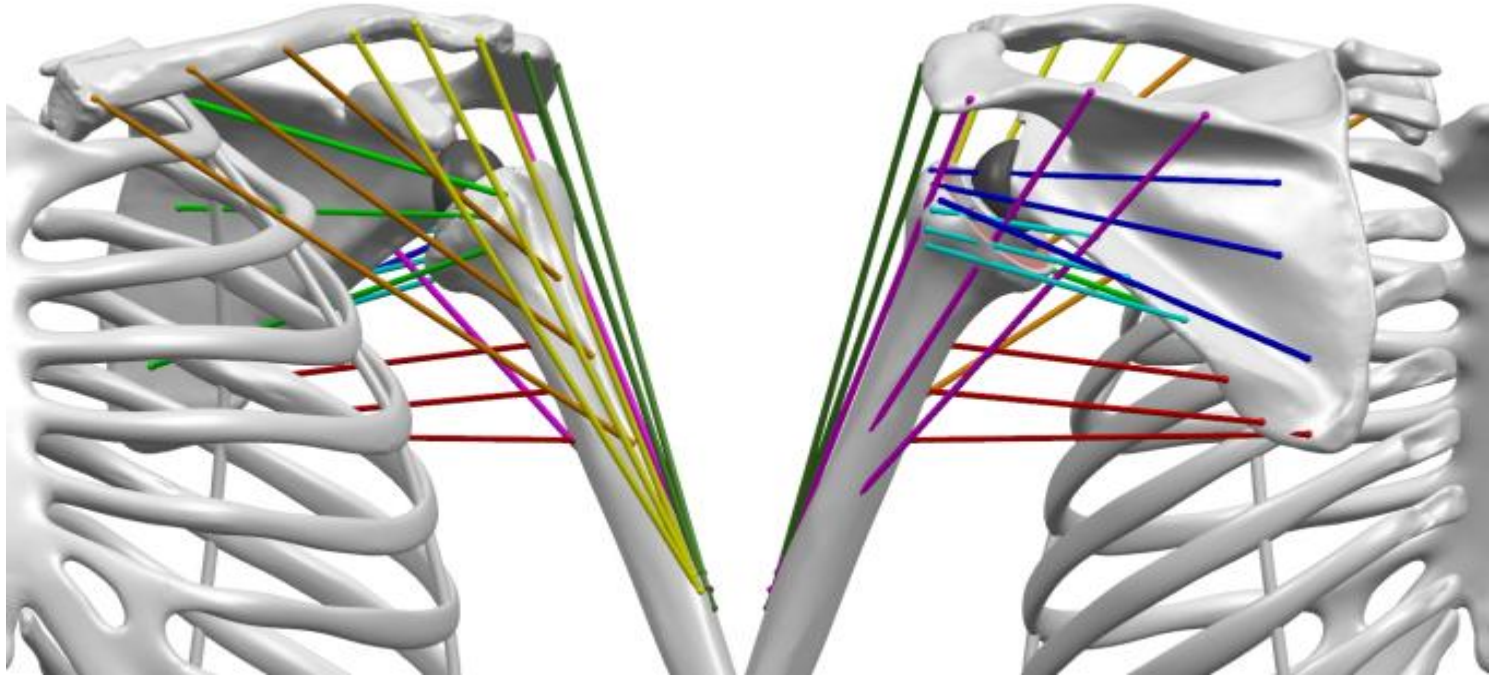
Jason D. Vourazeris, MD[a,*], Thomas W. Wright, MD[b], Aimee M. Struk, MEd, ATC[c], Joseph J. King, MD[b], Kevin W. Farmer, MD[b]

Subscapularis Repair Is Unnecessary After Lateralized Reverse Shoulder Arthroplasty

Troy A. Roberson, MD, Ellen Shanley, PT, PhD, OCS, James T. Griscom, BS, Michael Granade, PharmD, Quinn Hunt, BS, Kyle J. Adams, BS, Amit M. Momaya, MD, Adam Kwapisz, MD, Michael J. Kissenberth, MD, Keith T. Lonergan, MD, Stefan J. Tolan, MD, Richard J. Hawkins, MD, and John M. Tokish, MD

INCREASE THE WRAPPING EFFECT!





Effect of humeral stem design on humeral position and range of motion in reverse shoulder arthroplasty

Alexandre Lädermann[1,2,3] · Patrick J. Denard[4,5] · Pascal Boileau[6] · Alain Farron[7] · Pierric Deransart[8] · Alexandre Terrier[9] · Julien Ston[9] · Gilles Walch[10]

Impact of Inferior Glenoid Tilt, Humeral Retroversion, Bone Grafting, and Design Parameters on Muscle Length and Deltoid Wrapping in Reverse Shoulder Arthroplasty

Christopher P. Roche, M.S., M.B.A., Phong Diep, B.S., Matthew Hamilton, Ph.D., Lynn A. Crosby, M.D., Pierre-Henri Flurin, M.D., Thomas W. Wright, M.D., Joseph D. Zuckerman, M.D., and Howard D. Routman, D.O.

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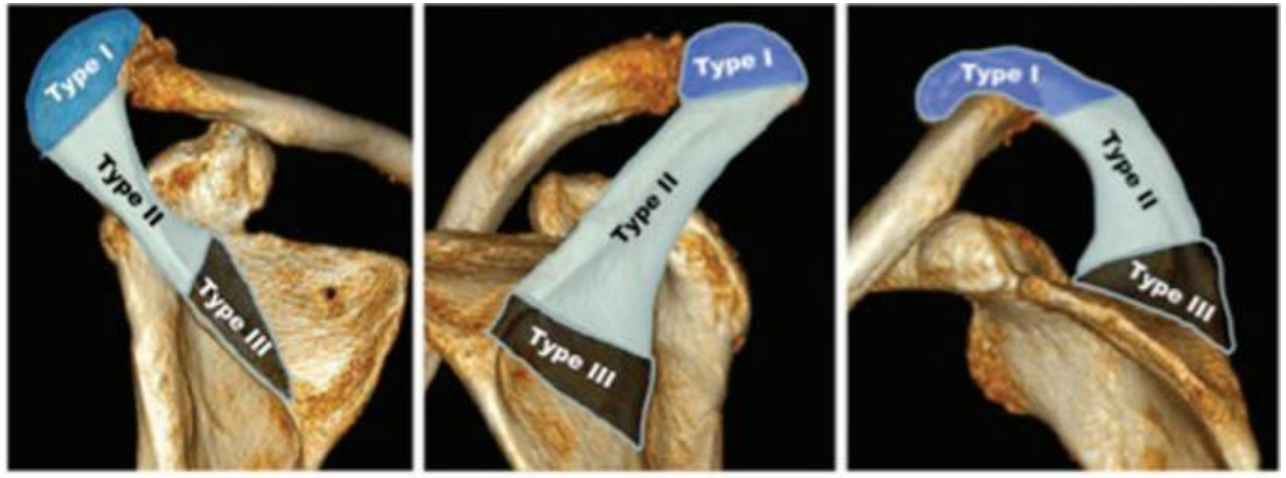
SHOULDER ACADEMY

KNOW THE SURGERY

BIOMECHANICAL IMPLICATIONS

AVOID COMPLICATIONS



Classification of acromial fractures. Courtesy of Levy et al.[11]

Acromial spine fracture after reverse total shoulder arthroplasty: a systematic review

Diana C. Patterson, MD*, Debbie Chi, BS, Bradford O. Parsons, MD, Paul J. Cagle Jr, MD

Conclusion

This study suggests the occurrence of acromial fractures after RSA is a common event, with a rate of over 4% in 3838 patients. These fractures correlate with worse post-operative outcomes regardless of the method of treatment. On the basis of this comparison, ORIF was not shown to be clinically superior despite a limited complication rate. Nonoperative management showed a higher rate of nonunion.

Between 4 and 10%

FISIOPOINT

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SHOULDER ACADEMY

KNOW THE SURGERY

BIOMECHANICAL IMPLICATIONS

AVOID COMPLICATIONS

STEPHANIE BOUDREAU, PT, DPT[1] • ED BOUDREAU, PT, OCS[2]
LAURENCE D. HIGGINS, MD[3] • REG B. WILCOX III, PT, DPT, MS, OCS[4]

Rehabilitation Following Reverse Total Shoulder Arthroplasty

Scapulohumeral rhythm in shoulders with reverse shoulder arthroplasty

David Walker, PhD[a], Keisuke Matsuki, MD, PhD[b], Aimee M. Struk, MEd, ATC[c], Thomas W. Wright, MD[c,*], Scott A. Banks, PhD[a]

Biomechanics of reverse total shoulder arthroplasty

Jonathan L. Berliner, MD*, Ashton Regalado-Magdos, BS, C. Benjamin Ma, MD, Brian T. Feeley, MD

How does scapula motion change after reverse total shoulder arthroplasty? - a preliminary report

Myung-Sun Kim[1], Keun-Young Lim[2], Dong-Hyun Lee[1], David Kovacevic[3] and Nam-Young Cho[1*]

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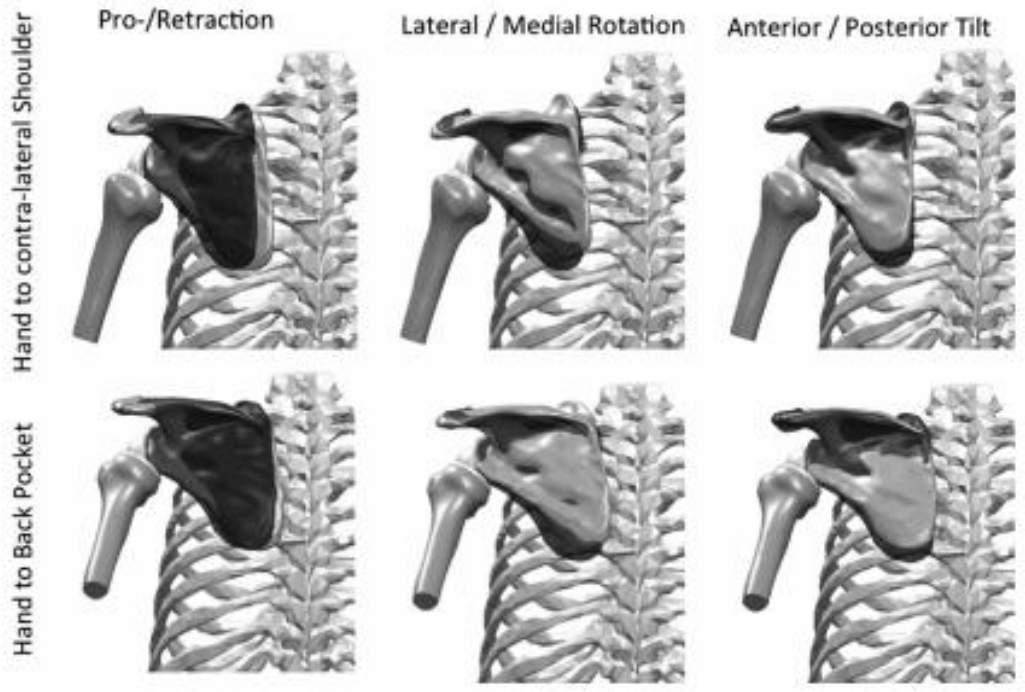
SHOULDER ACADEMY

MANAGE A REVERSE IN 3 MOVES

BIOMECHANICAL IMPLICATIONS

AVOID COMPLICATIONS



Scapulohumeral rhythm in shoulders with reverse shoulder arthroplasty

David Walker, PhD[a], Keisuke Matsuki, MD, PhD[b], Aimee Struk, MS[c], Thomas W. Wright, MD[c,*], Scott A. Banks, PhD[a]

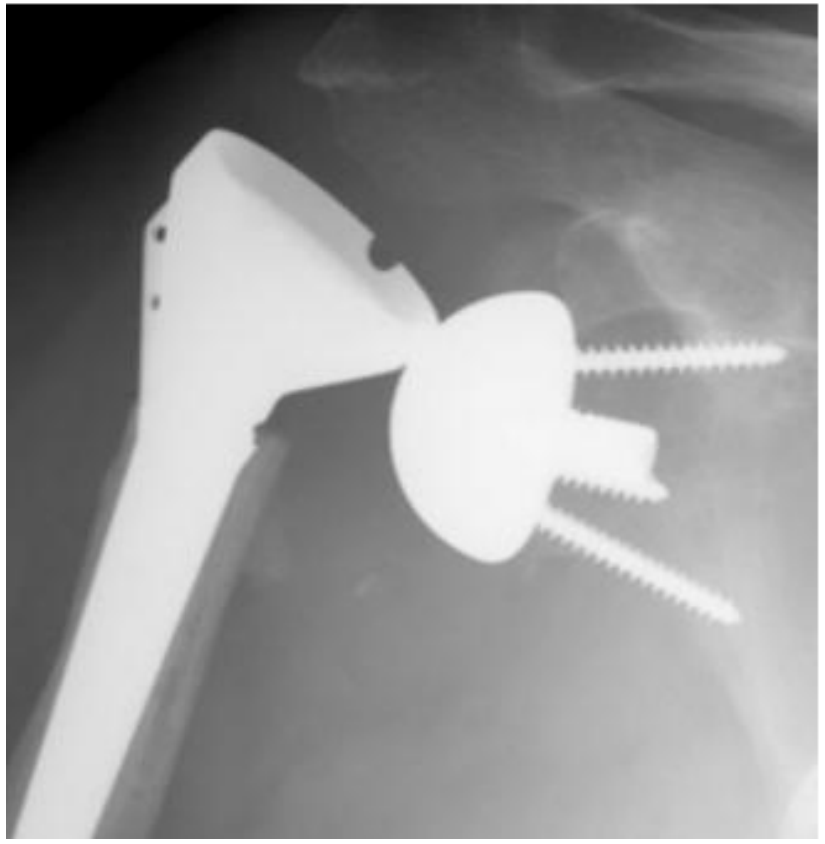
Activities of daily living with reverse prostheses: importance of scapular compensation for functional mobility of the shoulder

Alexandre Terrier, PhD[a,*], Patricia Scheuber, MSc[a], Dominique P. Pioletti, PhD[a], Alain Farron, MD[b]

MANAGEMENT OF COMPLICATIONS

Table 1. Various risk factors having an effect on instability after reverse shoulder arthroplasty (RSA)

Author	Risk factor
	Comorbidities and demographic factors
Cheung et al[82]	Male gender
Padegimas et al[104]	Body mass index > 30
	Diagnosis
Cheung et al[82]	Previous open procedures, preoperative nonunion of proximal humerus or tuberosity
	Intraoperative factors
Tashjian et al[83]	Superior inclination of baseplate
Ohl et al[105]	Resection of tuberosities
Lädermann et al[106]	Deltoid insufficiency, intraoperative neurological palsy
Cheung et al and Edwards et al[82,107]	Lack of anterior restraints including subscapularis insufficiency (controversial, depend on prosthetic design)
Lädermann et al and Gallo et al[81,108]	Inability to restore humeral length
Edwards et al[107]	Conjoint tendon weakness and pectoralis major insufficiency
Favre et al[62]	Malpositioning of the components
Johnson et al[109]	Impingement
	Postoperative factors
Gallo et al[108]	Infection
Lädermann et al[106]	Deltoid insufficiency resulting from acromial fracture, polyethylene wear, stem subsidence



Between 2,4 and 31%

In the first 4 weeks

Marko Nabergoj[1,2]
Patrick J. Denard[3]
Philippe Collin[4]
Rihard Trebše[1,2]
Alexandre Lädermann[5–7]

Mechanical complications and fractures after reverse shoulder arthroplasty related to different design types and their rates: part I

Shoulder & Elbow

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Review Article

Complications in Reverse Total Shoulder Arthroplasty

Journal of the AAOS
AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS

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