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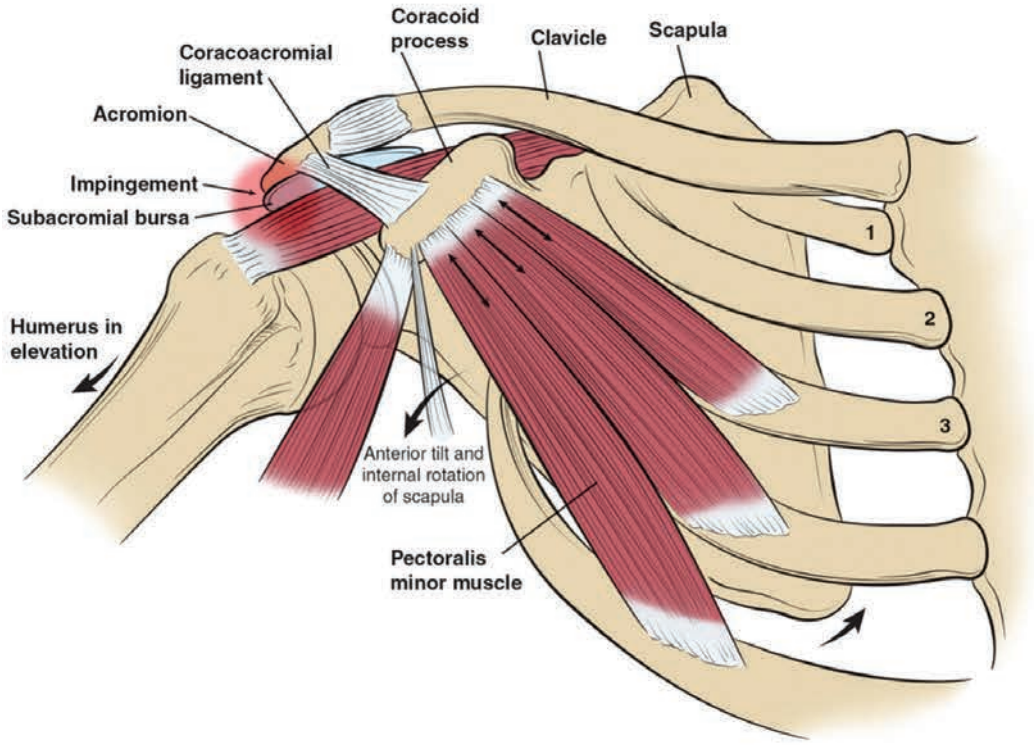
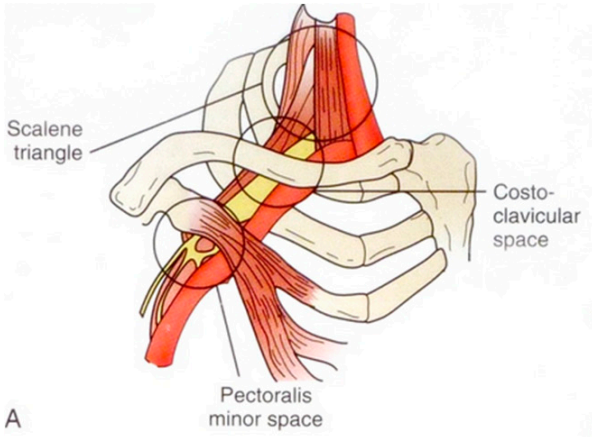
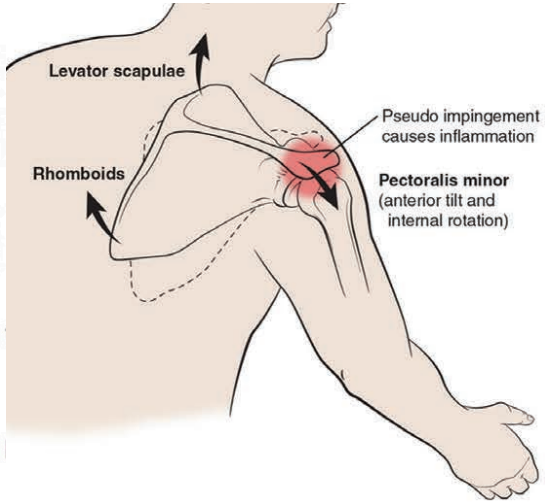
# Resultados Clínicos Comparativos De La Liberación Artroscópica Del Pectoral Menor


**Dra. Gia Rodríguez Vaquero**
Jefa de Sección de Artroscopia
Especialista en Hombro y Codo

Hospital Universitario Rey Juan Carlos
SaludMadrid
Comunidad de Madrid



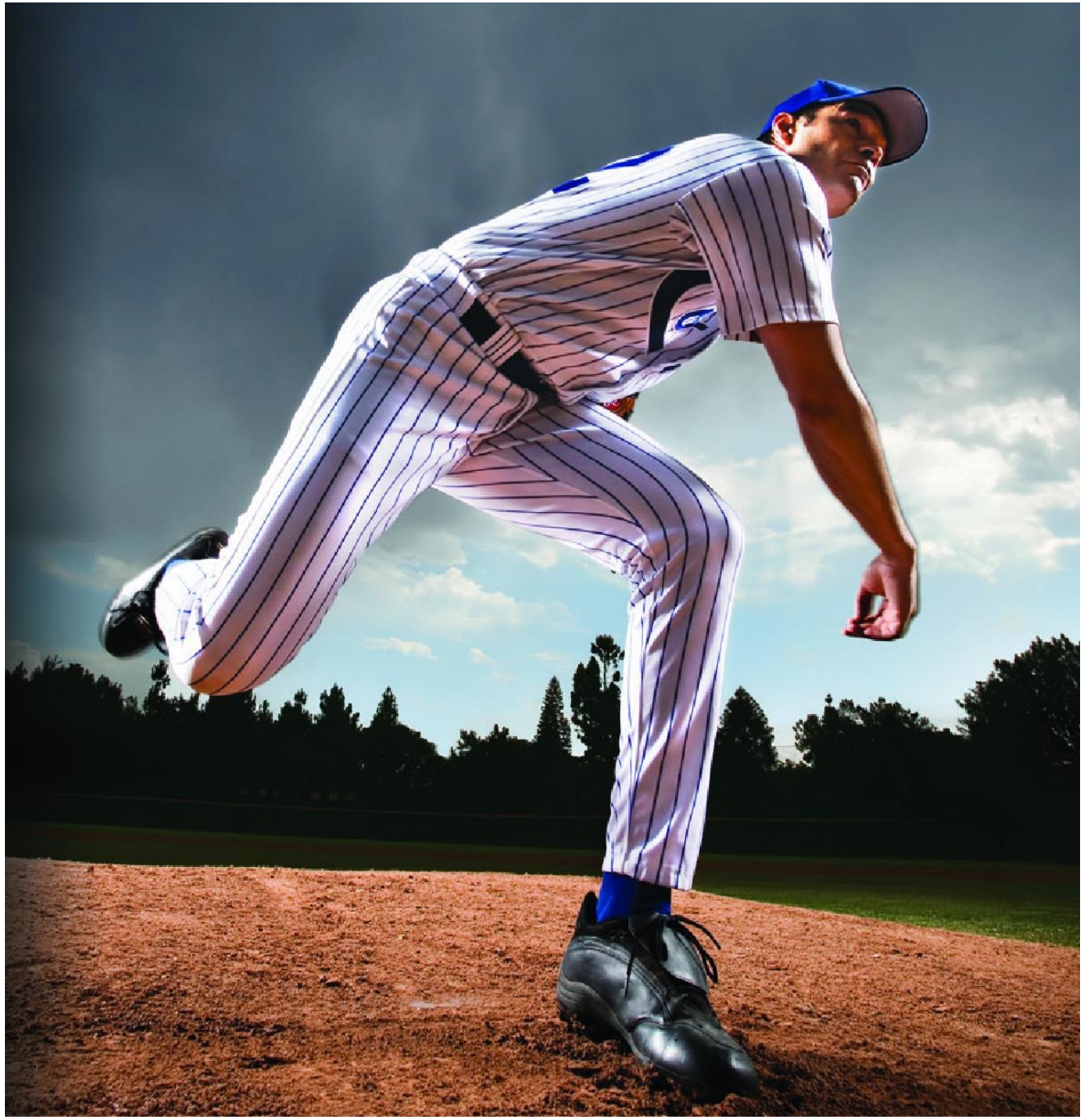




SHPM

- Acortamiento PM
- Protracción de la escápula
- Tilt medial
- ⬇️⬇️⬇️ Espacio SA

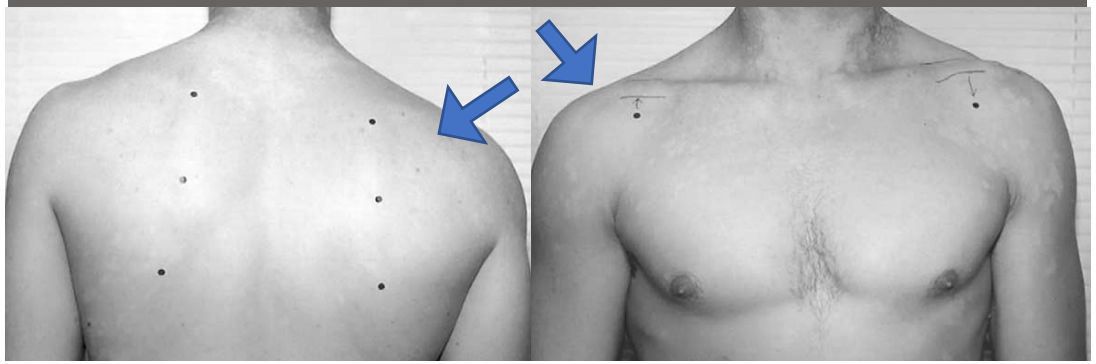
➢ Patología SA, MR y GH

➢ Dolor neuropático asociado



# SICK escápula

- Scapular malposition
- Inferior medial border prominence
- Coracoid pain
- dysKinesis



*The Disabled Throwing Shoulder: Spectrum of Pathology Part III: The SICK Scapula, Scapular Dyskinesis, the Kinetic Chain, and Rehabilitation*
*Stephen S. Burkhart . Arthroscopy: Vol 19, No 6 (July-August), 2003: pp 641-661*

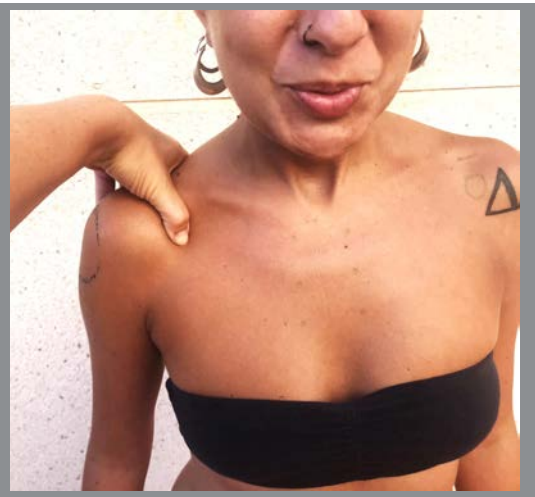
# SHPM: Síndrome Hiperactivación Pectoral Menor

- ✓Dolor crónico de hombro
  - ✓Anterior
  - ✓Irradiado a mano
  - ✓Disestesias
  - ✓Dolor neuropático
- ✓Exploración Compatible

- ✓Refractario tto conservador
- ✓NO deportistas
- ✓NO traumático

# Objetivo

# Presentación de resultados clínicos comparativos a medio plazo la liberación artroscópica del pectoral menor (LAPM) para el tratamiento SHPM **aislada o asociada a otras lesiones**



# Material y Métodos

## Criterios de Inclusión ✅

- Dolor de hombro refractario > 6 m
- Irradiado hacia la mano
- Disestesias hacia la mano

  EMG normal
- Acortamiento Pm unilat y disfunción ET
- Streching test +
- Test compresión escapular +
- Fracaso manejo conservador >3m

  RHB, Infiltraciones

- 2017-2020
- **20 pacientes**
  - **Grupo 1 LAPM (10)**
  - **Grupo 2 LAPM + OL ( 10)**

# Material y Métodos

## Criterios de Exclusión

- Lesiones de SE/IE =/>C2
- SC =/> Tipo 3
- Artrosis GH moderada/severa
- Inestabilidad recidivante
- test de Allen positivo
- parálisis del nervio torácico largo

✗ Desfiladero torácico vascular

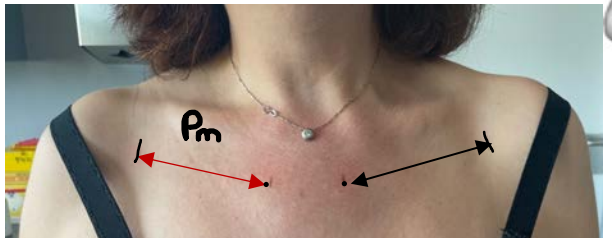
✗ Patología cervical relevante

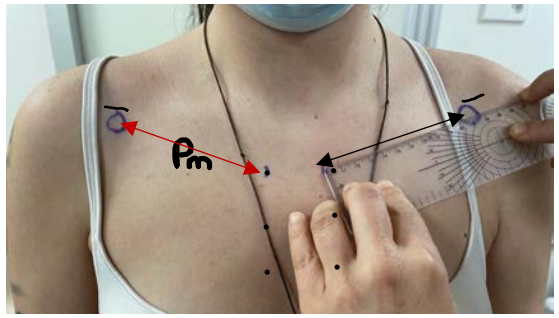
# Material y Métodos

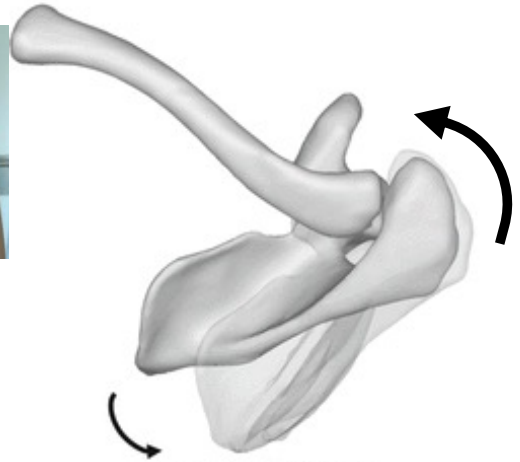
# Dolor medial a coracoides
# Acortamiento PM
# Posición anormal de la escápula
Protracción + inclinación medial
# Streching test +++
# Test compresión escapular +

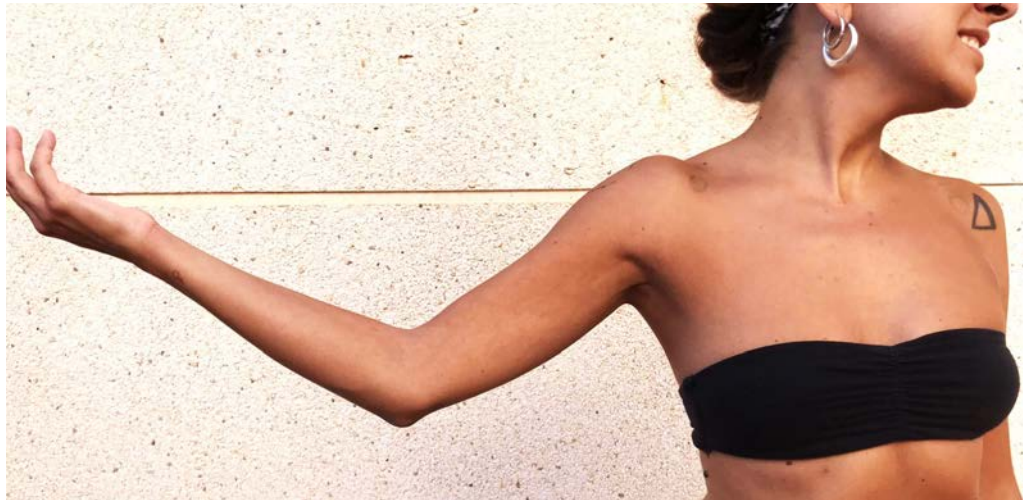
- Maniobras subacromiales +
- PLB +/-
- SE +/-

- RX y RM





# Material y Métodos

= Protocolo RHB 🚶‍♀️ y 💪🏻 ET en ambos grupos

- Evaluación del componente neuropático
- Estática y Dinámica escapular pre y postop
- EVA pre y postop
- Constant Score pre y postop
- Satisfacción con la cirugía

La comparabilidad de los grupos se evaluó comparando los datos demográficos iniciales y la duración del seguimiento entre los grupos. La normalidad de los datos continuos se evaluaron con las pruebas de Shapiro-Wilk. Los resultados continuos se compararon con las pruebas Anova, Welch Anova o Kruskal-Wallis según la distribución de datos. Los resultados discretos se compararon con chi-cuadrado o la prueba exacta de Fisher según corresponda. El riesgo alfa se fijó en 5%. El análisis estadístico se realizó con EasyMedStat (versión 3.18)

# Portales

# Técnica quirúrgica

# Resultados

**20** pacientes:

| | Sexo | Edad | FU |
|---|---|---|---|
| • **Pm** | 10 ♀ | 43,3 (24-55) | 23 |
| • **Pm+** | 8 ♀ y 2 ♂ | 47,3 (31-58) | 21,8 |

Lesiones tratadas Pm+

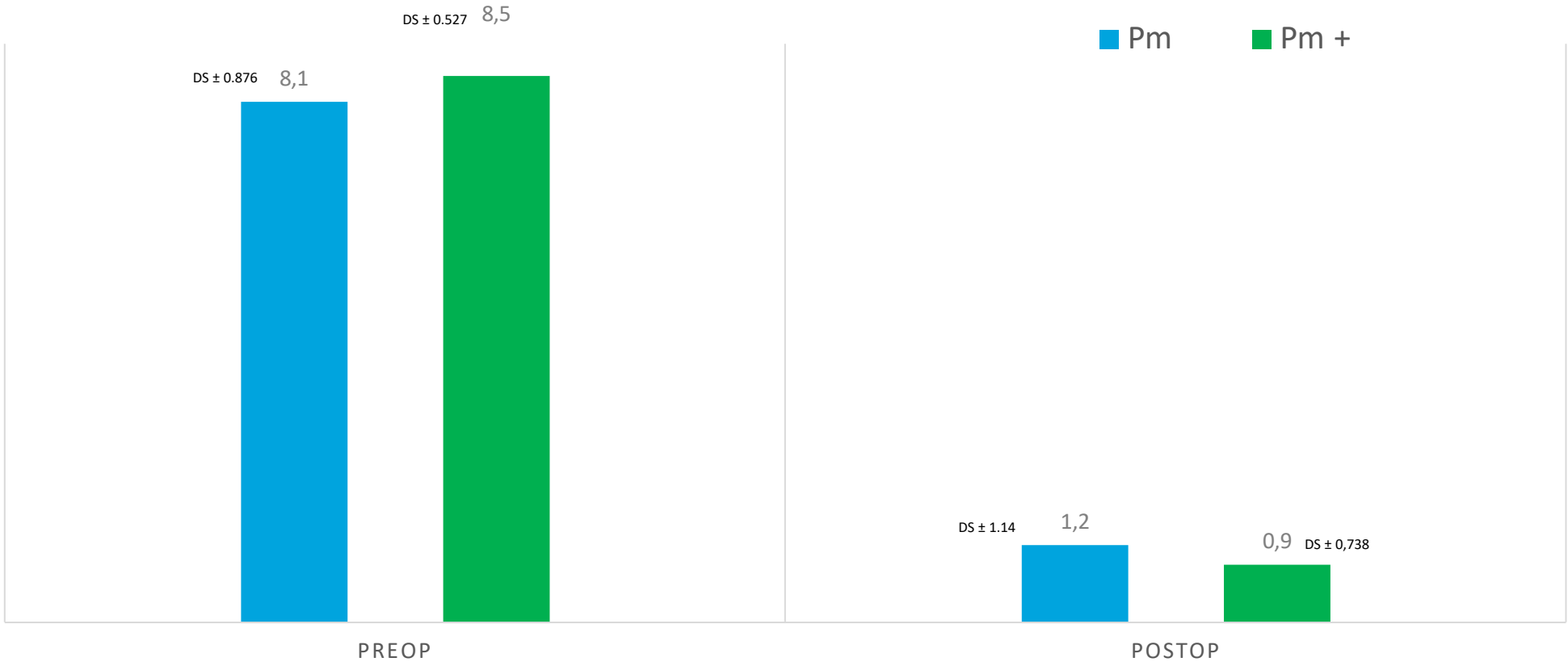
- 6 Tenotomías del bíceps
- 8 tendinopatías MR
- OA GH
- T calcificante

## Pm+

1. SE B3, BY
2. SC II,BY
3. SC II, PASTA SE,BY
4. BY,AC
5. B3 SE + BY
6. SC II, PASTA SE + BY
7. PASTA SE
8. C1 SE
9. OA GH
10. T CALCIFICANTE SE

# Resultados

## EVA

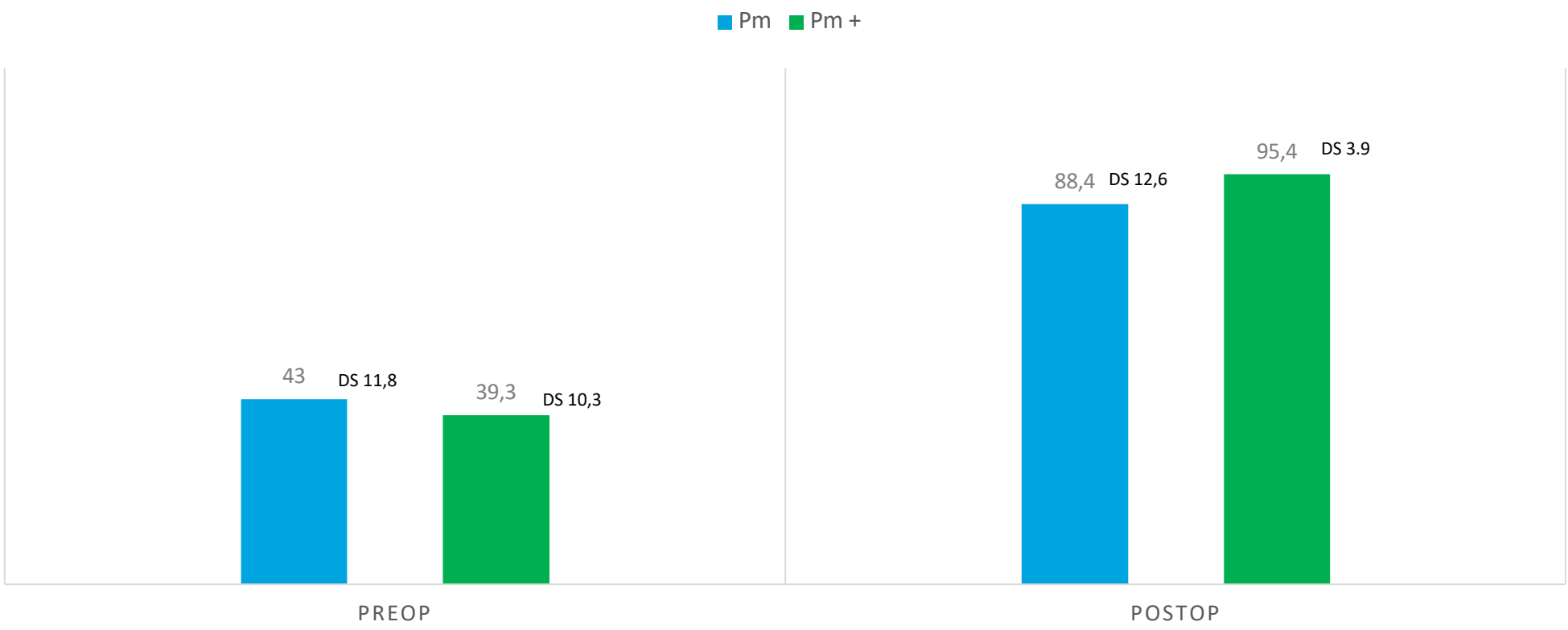



**Diferencias EVA pre y postop p<0.05**

**No diferencias estadísticamente significativas entre grupos**

# Resultados

## Constant score




**Diferencias Constant Score pre y postop $p<0.05$**

**No diferencias estadísticamente significativas entre grupos**

# Resultados

- ✓ **Dolor neuropático**
  - ✓ Pm 3 pacientes disestesias y dolor leve
  - ✓ Pm + 0
  - ✓ P =0.211

- ✓ **No Discinesia escapular**
- ✓ **Satisfacción con la cirugía**

No complicaciones po

**1 cirugía rev en grupo Pm por liberación incompleta**

6 m po

# Discusión

## Surgical Release of the Pectoralis Minor Tendon for Scapular Dyskinesia and Shoulder Pain

Matthew T. Provencher,*† MD, CAPT MC USNR, Hannah Kirby,‡ MD, Lucas S. McDonald,‡ MD, Petar Golijanin,§ BS, Daniel Gross,‖ MD, Kevin J. Campbell,¶ MD, Lance LeClere,# MD, George Sanchez,** BS, Shawn Anthony,†† MD, and Anthony A. Romeo,¶ MD
*Investigation performed at Naval Medical Center San Diego, San Diego, California, USA*

**Background:** Pectoralis minor (PM) tightness has been linked to pain and dysfunction of the shoulder joint secondary to anterior tilt and internal rotation of the scapula, thus causing secondary impingement of the subacromial space.

**Purpose:** To describe outcomes pertaining to nonoperative and operative treatment via surgical release of the PM tendon for pathologic PM tightness in an active population.

**Study Design:** Case series; Level of evidence, 4.

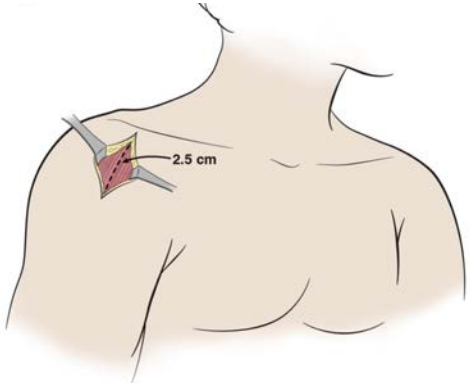
**Methods:** Over a 3-year period, a total of 46 patients were enrolled (mean age, 25.5 years; range, 18-33 years). Inclusion criteria consisted of symptomatic shoulder pain, limited range of overhead motion, inability to participate in overhead lifting activities, and examination findings consistent with scapular dysfunction secondary to a tight PM with tenderness to palpation of the PM tendon. All patients underwent a lengthy physical therapy and stretching program (mean, 11.4 months; range, 3-23 months), which was followed by serial examinations for resolution of symptoms and scapular tilt. Of the 46 patients, 6 (13%) were unable to adequately stretch the PM and underwent isolated mini-open PM release. Outcomes were assessed with scapula protraction measurements and pain scales as well as American Shoulder and Elbow Surgeons (ASES), Single Assessment Numeric Evaluation (SANE), and visual analog scale (VAS) scores.

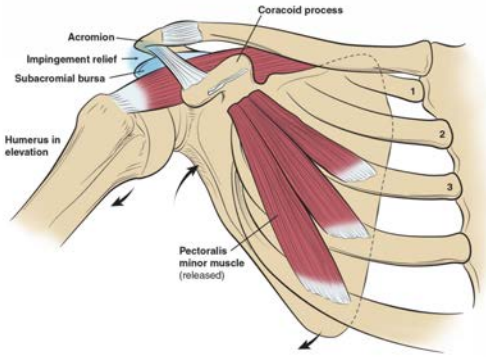
**Results:** Forty of the 46 patients (87%) resolved the tight PM and scapular-mediated symptoms with a dedicated therapy program (pre- and posttreatment mean outcome scores: 58 and 91 [ASES], 50 and 90 [SANE], 4.9 and 0.8 [VAS]; $P < .01$ for all), but 6 patients were considered nonresponders (mean score, 48 [ASES], 40 [SANE], 5.9 [VAS]) and elected to have surgical PM release, with improved scores in all domains (mean score, 89 [ASES], 90.4 [SANE], 0.9 [VAS]; $P < .01$) at final follow-up of 26 months (range, 25-30 months). Additionally, protraction of the scapula improved from 1.2 to 0.3 cm in a mean midline measurement from the chest wall preoperatively to postoperatively ($P < .01$), similar to results in nonoperative responders. No surgical complications were reported, and all patients returned to full activities.

**Conclusion:** In most patients, PM tightness can be successfully treated with a nonoperative focused PM stretching program. However, in refractory and pathologically tight PM cases, this series demonstrates predictable return to function with notable improvement in shoulder symptoms after surgical release of the PM. Additional research is necessary to evaluate the long-term efficacy of isolated PM treatment.

**Keywords:** shoulder instability; weight lifting; pectoralis minor; scapular dyskinesia; shoulder impingement

The American Journal of Sports Medicine, Vol. 45, No. 1




**Technical Notes**

## Arthroscopic Pectoralis Minor Release

S. Tal Hendrix, M.D., Matt Hoyle, A.A.S., and John M. Tokish, M.D.

*Arthroscopy Techniques, Vol 7, No 6 (June), 2018: pp e589-e594*

**Abstract:** The scapula has long been recognized as a key component in shoulder motion and a crucial part of the kinetic chain connecting the body's core and upper extremity. The pectoralis minor (PM) has garnered increasing attention as we better understand scapular kinematics and its role in shoulder pain and dysfunction. This is particularly important in patients with scapular dyskinesis and especially in overhead throwing athletes. The most of these patients achieve their recovery goals through nonoperative management, stretching, and strengthening protocols; however, some patients do not respond to nonoperative modalities. Several studies have recently shown improvement in shoulder motion and outcome scores after open surgical release of the PM from its scapular attachment. Arthroscopic release of the PM can be accomplished in the lateral decubitus position with standard shoulder arthroscopic portals.

# Discusión

Orthopaedics & Traumatology: Surgery & Research 108 (2022) 103211

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Orthopaedics & Traumatology: Surgery & Research

journal homepage: www.elsevier.com

Original article

## Arthroscopic release of the pectoralis minor tendon as an adjunct to acromioplasty in the treatment of subacromial syndrome associated with scapular dyskinesia

Lisa Servasier[a,*], Jérôme Jeudy[b], Guy Raimbeau[b], Nicolas Bigorre[b]

[a] Unité de chirurgie de la main et du membre supérieur, services d'orthopédie 1 et 2, CHRU de Tours, 37044 Tours Cedex, France
[b] Centre de la main, 47, rue de la Foucaudière, 49000 Trélazé, France

**Table 1**
Population.

| Characteristics of the population | |
|---|---|
| Number of cases | 58 |
| Number of patients | 57 |
| Gender | 22 men, 35 women |
| Occupation | 10 manual labor, 17 repetitive work |
| BMI | 28.12 kg/m² (22.20–36.80)<br>σ = 4.73 |
| Mean age at diagnosis | 51.4 years (29–66 years) |
| Duration of development at time of diagnosis | 16.1 months (3–60 months) |
| Average follow-up | 8.9 months (6–24 months) |

The constant score was evaluated prior to the intervention at 41.46 on average (19-59), with a median of 40 and, at the last follow-up, 76.36 (42–92), with a median of 77, corresponding to a gain of approximately 35 points ($p < 0.01$).

J Shoulder Elbow Surg (2022) 31, 1208–1214

ELSEVIER

Journal of Shoulder and Elbow Surgery

www.elsevier.com/locate/ymse

## Outcome of arthroscopic pectoralis minor release and scapulopexy for the management of scapulothoracic abnormal motion

**Bassem T. Elhassan, MD[a,*], Khang H. Dang, MD[a], Tiffany M. Huynh, MD[a], Chelsea Harstad, MS, PA-C[b], Matthew J. Best, MD[c]**

[a] *Harvard Shoulder Service, Massachusetts General Hospital, Boston, MA, USA*
[b] *Boston Clinical Trial, Boston, MA, USA*
[c] *Harvard Sports Medicine Service, Massachusetts General Hospital, Boston, MA, USA*

**Background:** Management of persistent symptomatic scapulothoracic abnormal motion (STAM) in the absence of periscapular muscle paralysis may be challenging. This study reports the outcomes of arthroscopic pectoralis minor release and scapulopexy for the management of symptomatic STAM secondary to pectoralis minor hyperactivity and serratus anterior hypoactivity in the absence of periscapular paralysis.

**Methods:** This was a retrospective cohort study with prospectively collected data of patients with symptomatic STAM secondary to pectoralis minor hyperactivity and serratus anterior hypoactivity. Surgery was indicated if patients failed 6 months of conservative management. Patient outcomes were assessed with shoulder range of motion (ROM) measurements, numerical pain scale, shoulder subjective value (SSV), and Constant score. Data were analyzed with Fischer's exact test for categorical variables and Student's *t*-test of unequal variance for continuous and categorical variables.

**Results:** Thirty-one consecutive patients were included in the study period between 2017 and 2020. Average age at the time of surgery was 24 years (range, 14-44 years), 80% of patients were female, and average follow-up after surgery was 23 months (range, 15-39 months). Thirteen patients also had a diagnosis of recurrent posterior instability. At final follow-up, 81% reported significant improvements in their STAM, as demonstrated by improved mean pain scale, ROM, SSV, and Constant scores. Pain improved from 6 (range, 4-10) to 2 (range, 1-4), SSV from 30% (range, 10%-40%) to 75% (range, 60%-100%), and Constant score from 49 (range, 43-61) preoperatively to 79 (range, 51-100) postoperatively ($P < .01$). All 13 patients with recurrent associated posterior instability had resolution of their instability. Flexion ROM improved from average 100° (range, 60°-150°) to 140° (range, 120°-160°). One patient had traumatic rupture of her scapulopexy 7 weeks postoperatively and underwent revision scapulopexy. Thirteen percent had minimal improvement after surgery and experienced recurrence 3 months postoperatively.

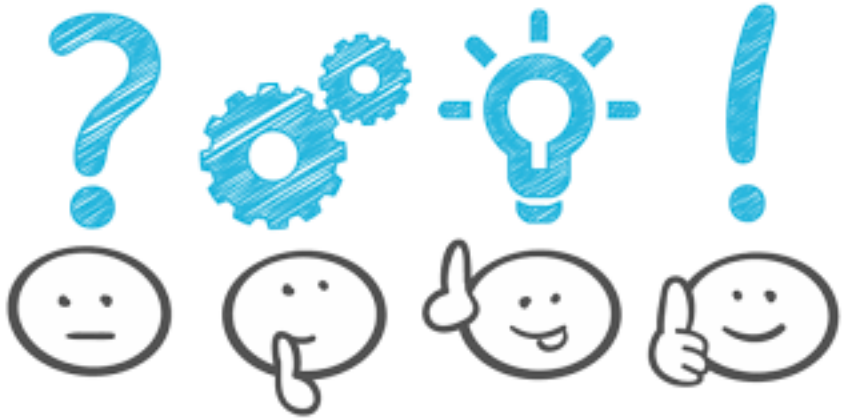
**Conclusion:** In patients with symptomatic STAM secondary to pectoralis minor hyperactivity and serratus anterior hypoactivity, arthroscopic pectoralis minor release and scapulopexy is an effective surgical option.

**Level of evidence:** Level IV; Case Series; Treatment Study



**Keywords:** Scapula; scapulopexy; pectoralis minor; serratus anterior

# Limitaciones



# Número pacientes

# Dx clínico

# Medición longitud/contractura de PM

# Futuros estudios

# Conclusiones

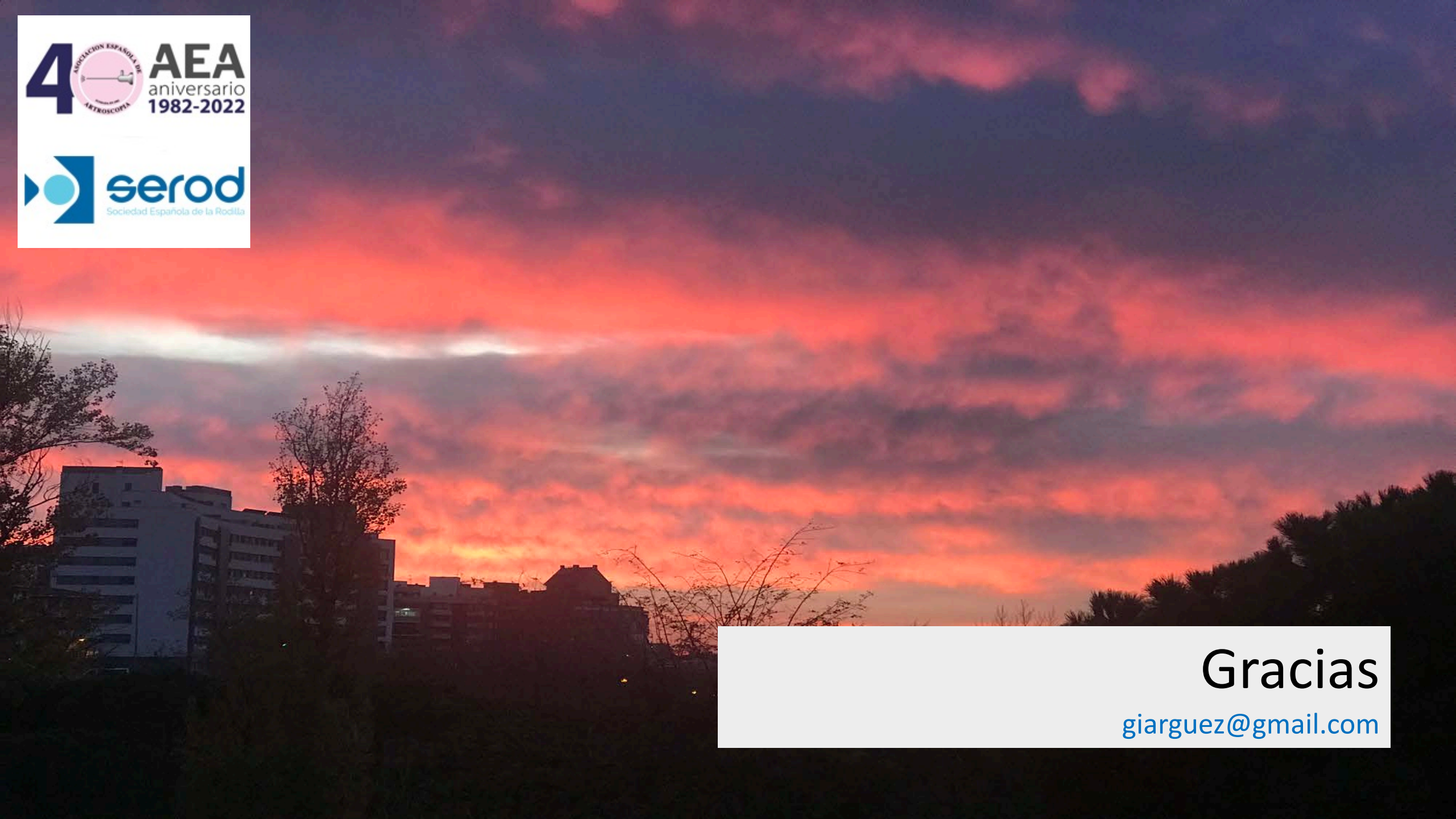
#SHPM puede ser responsable del dolor crónico de hombro con componente neuropático y movilidad anormal de la escápula

#La liberación artroscópica del pectoral menor es un tratamiento válido en casos refractarios

#Es un tratamiento seguro con buenos resultados clínicos a medio plazo en pacientes con SHPM aislada y con otras lesiones asociadas.

#Es esperable una mejoría de función y del dolor con baja tasa de complicaciones

#Línea de investigación a futuro.




# Gracias

giarguez@gmail.com