



JORNADA RETROPIÉ

19 de septiembre de 2015

Hotel Silken Indautxu, Bilbao



Con el Patrocinio Científico de la SEMCPT

patología de tendones peroneos



Dr. IÑAKI MEDIAVILLA

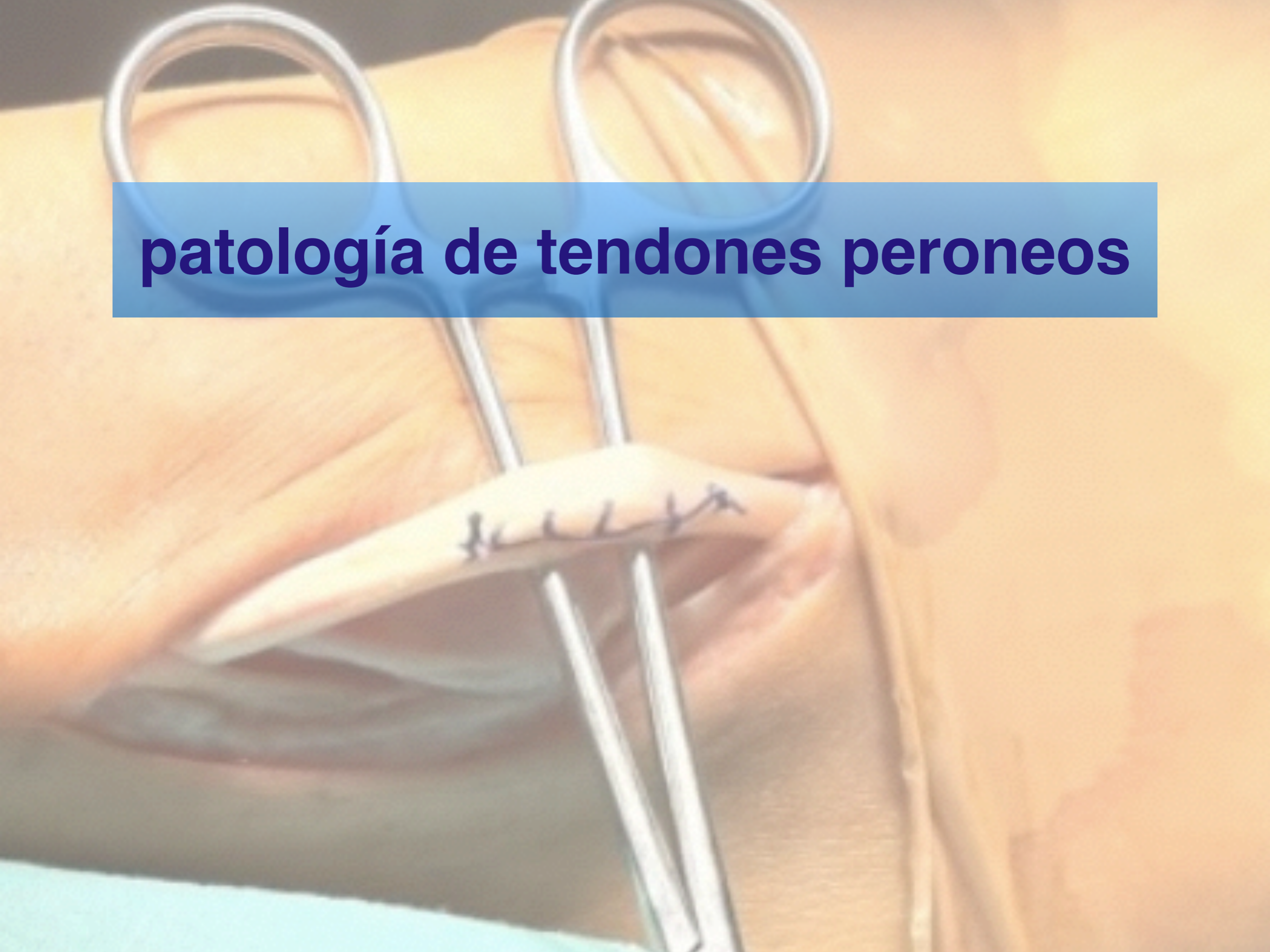
Prof. Asociado de la Universidad del País Vasco

Hospital Universitario Basurto

Bilbao



patología de tendones peroneos





patología de tendones peroneos

patología aislada: poco frecuente

presencia asociada
a otras patologías

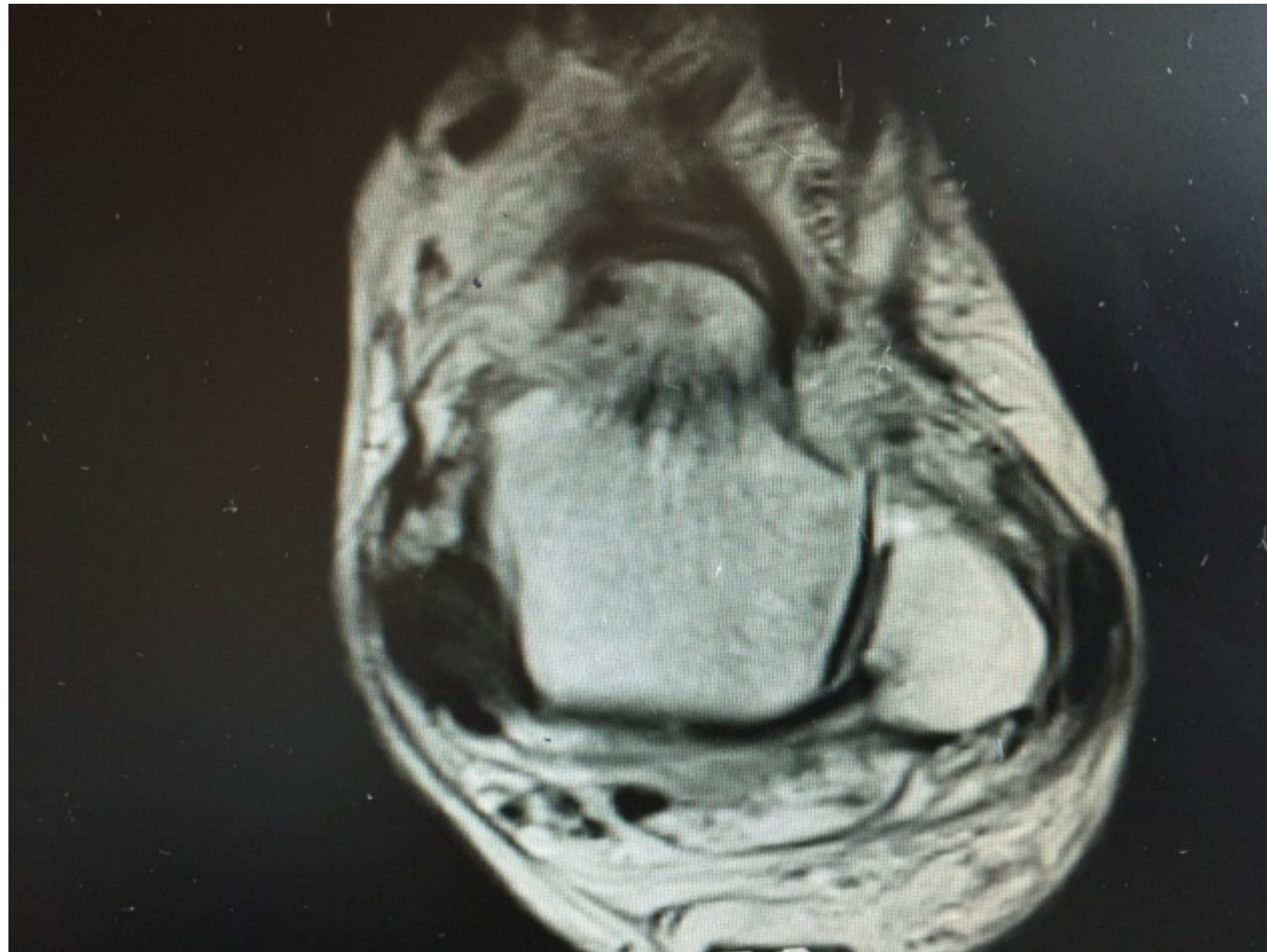


presencia asociada
a otras patologías

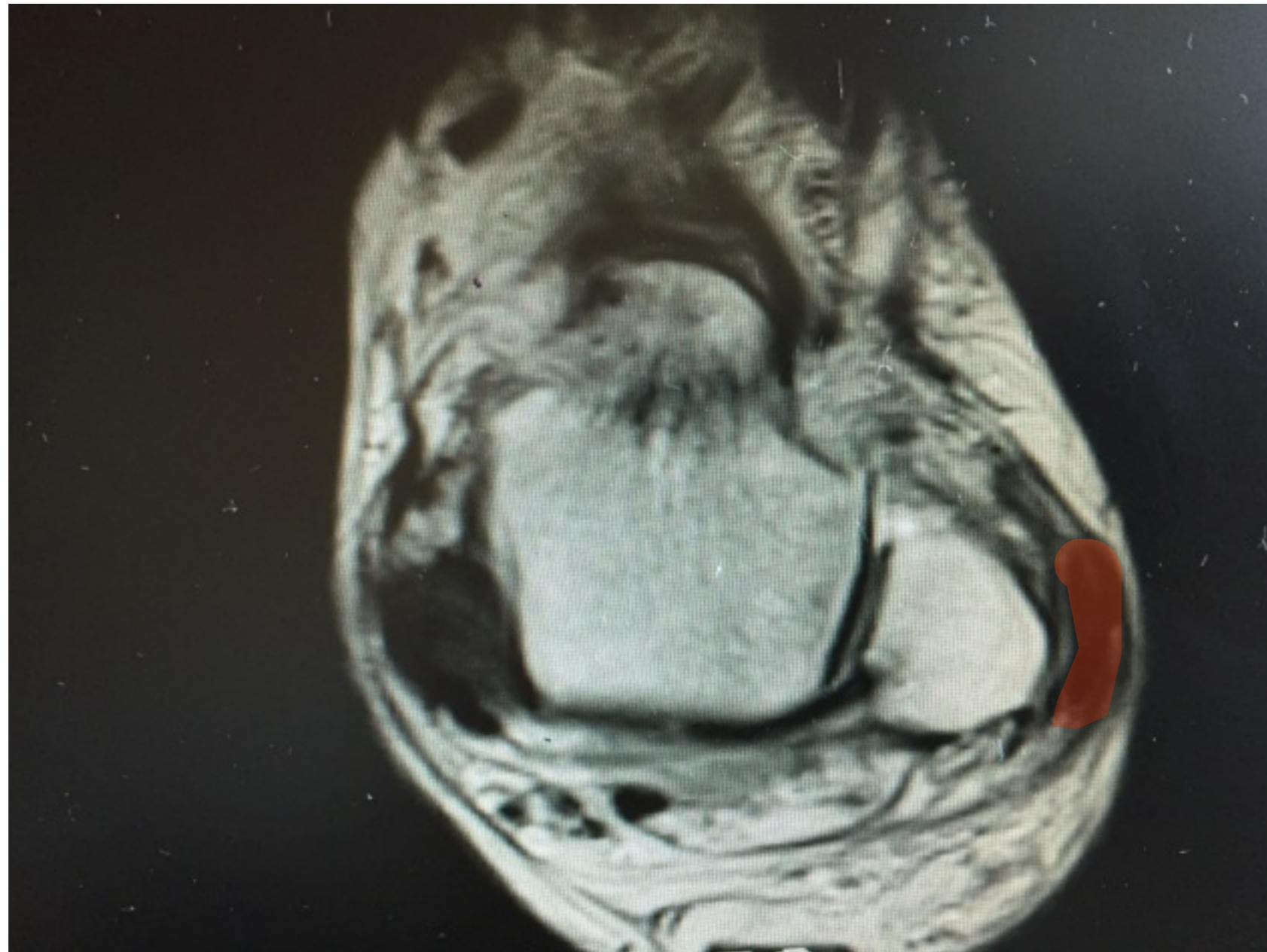


diagnóstico precoz: poco frecuente

presencia asociada
a otras patologías



presencia asociada
a otras patologías



presencia asociada
a otras patologías



presencia asociada
a otras patologías



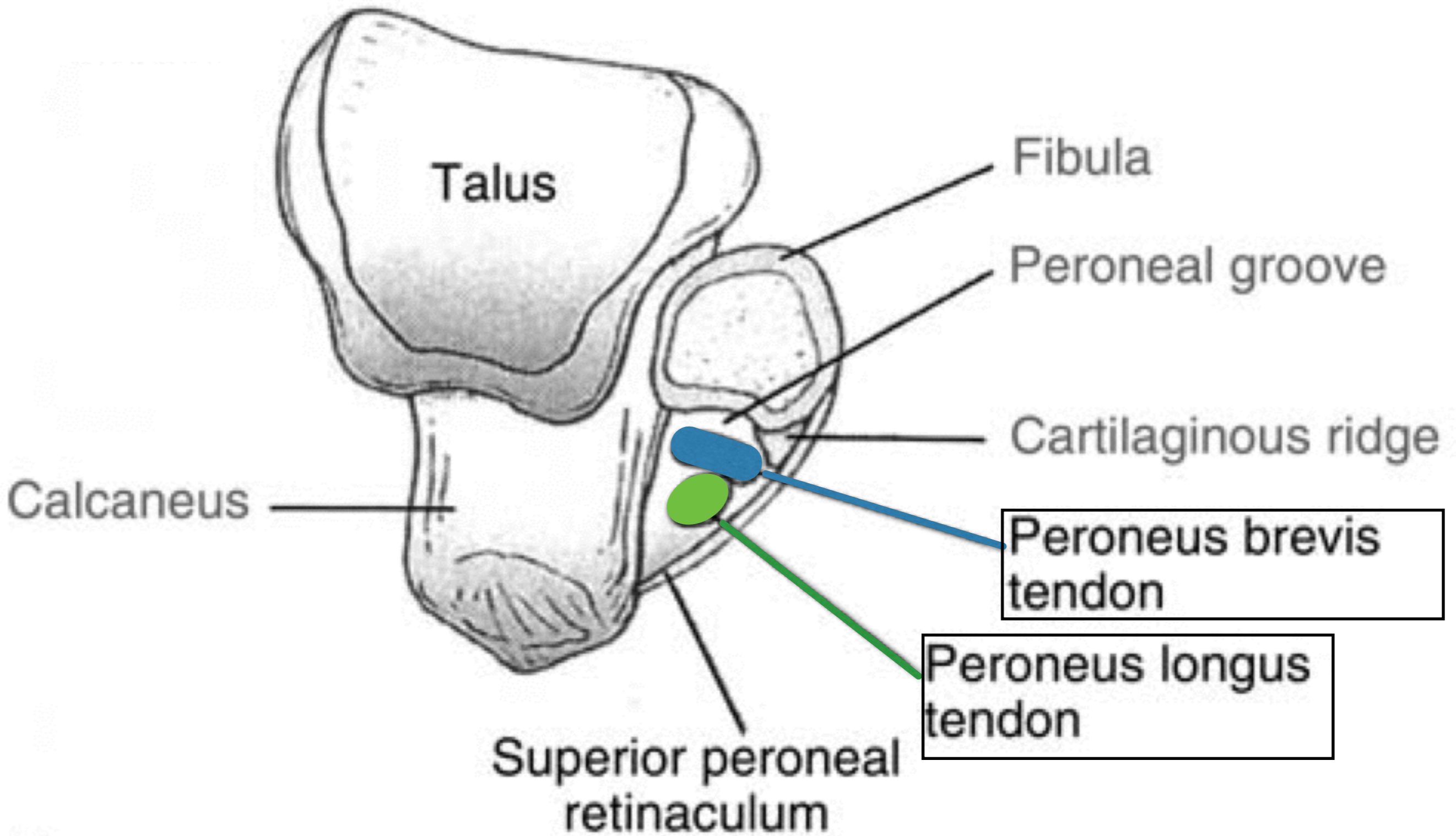
patología de los tendones peroneos



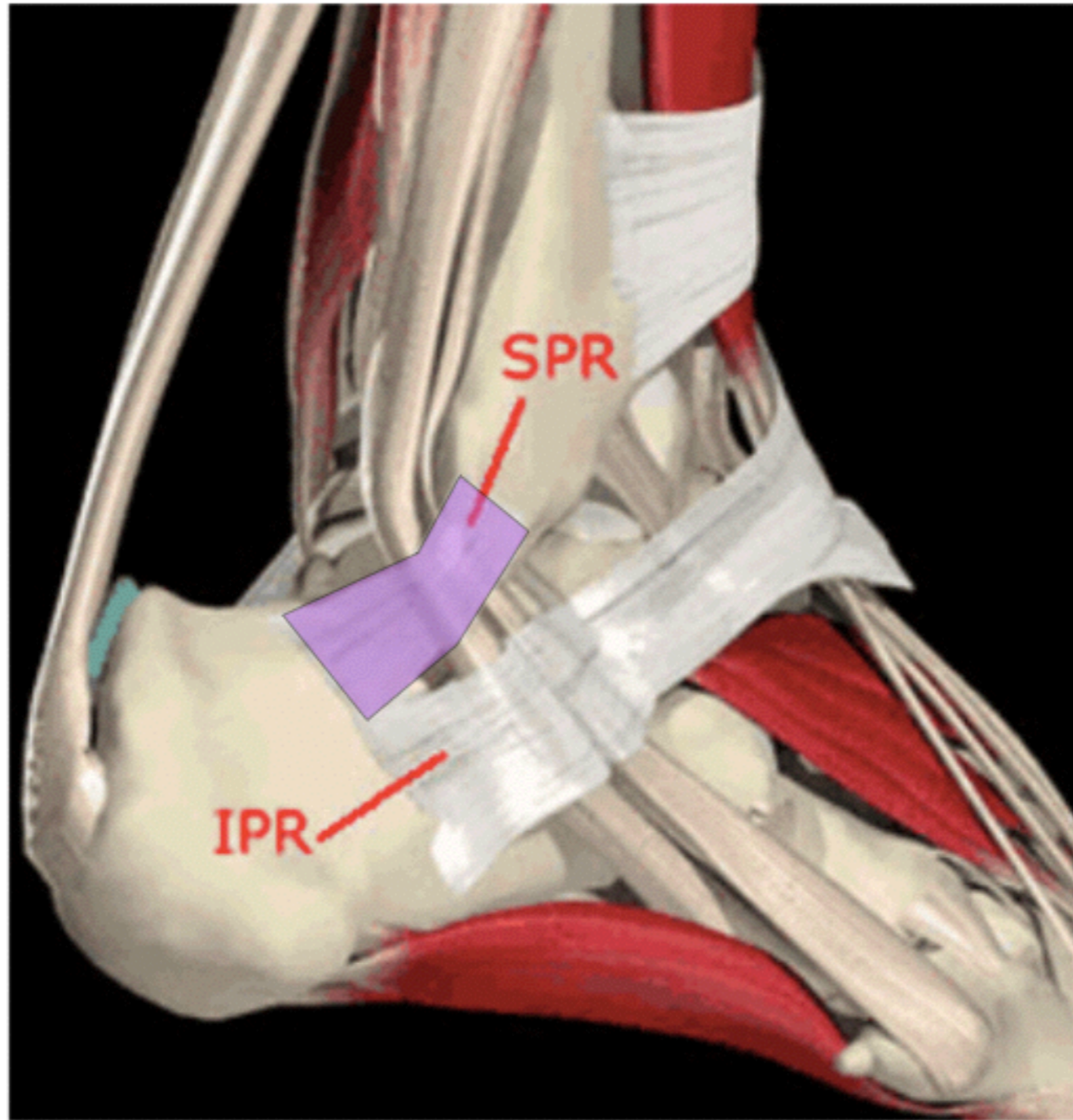
considerarla en el
diagnóstico diferencial



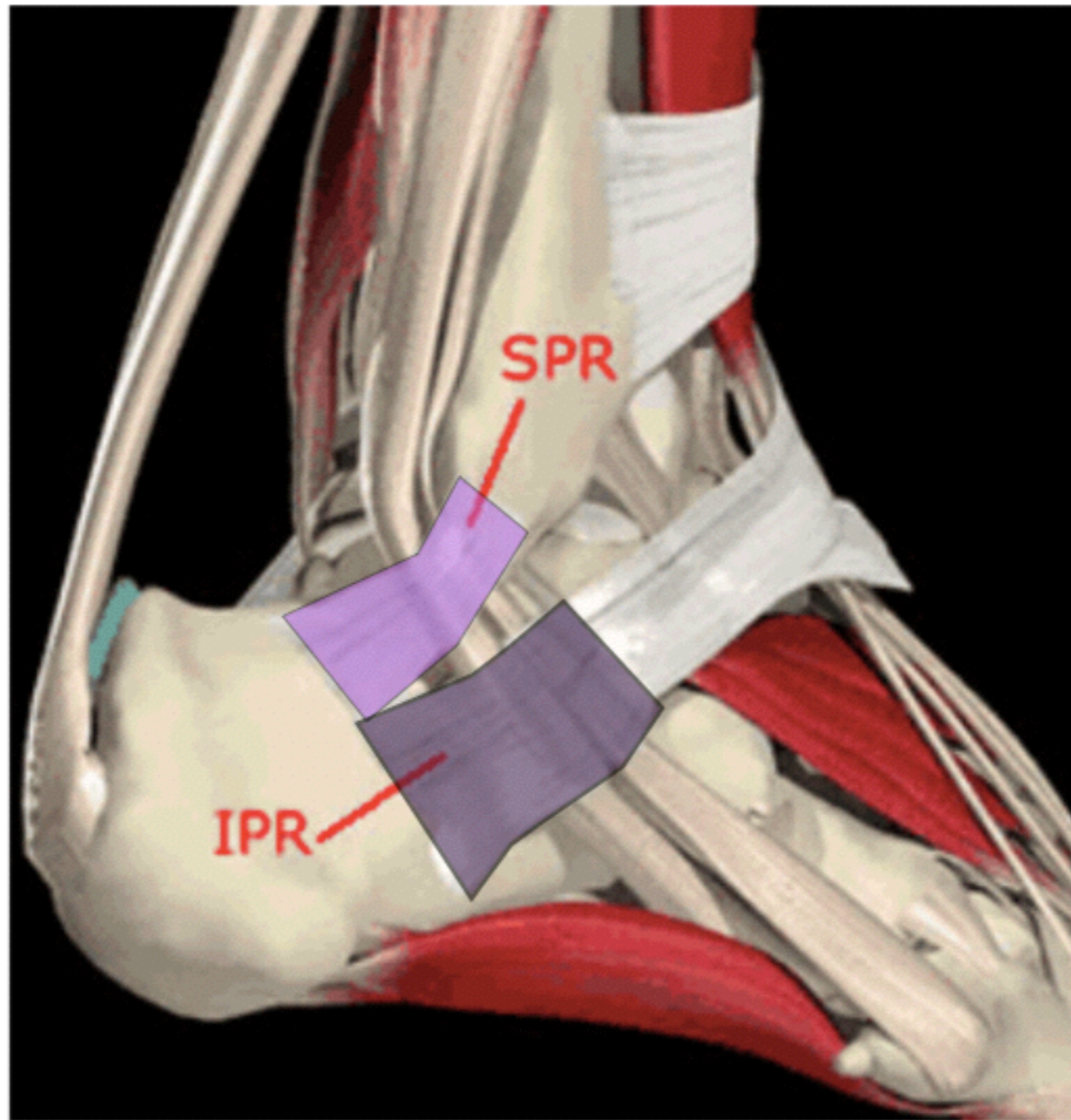
anatomía



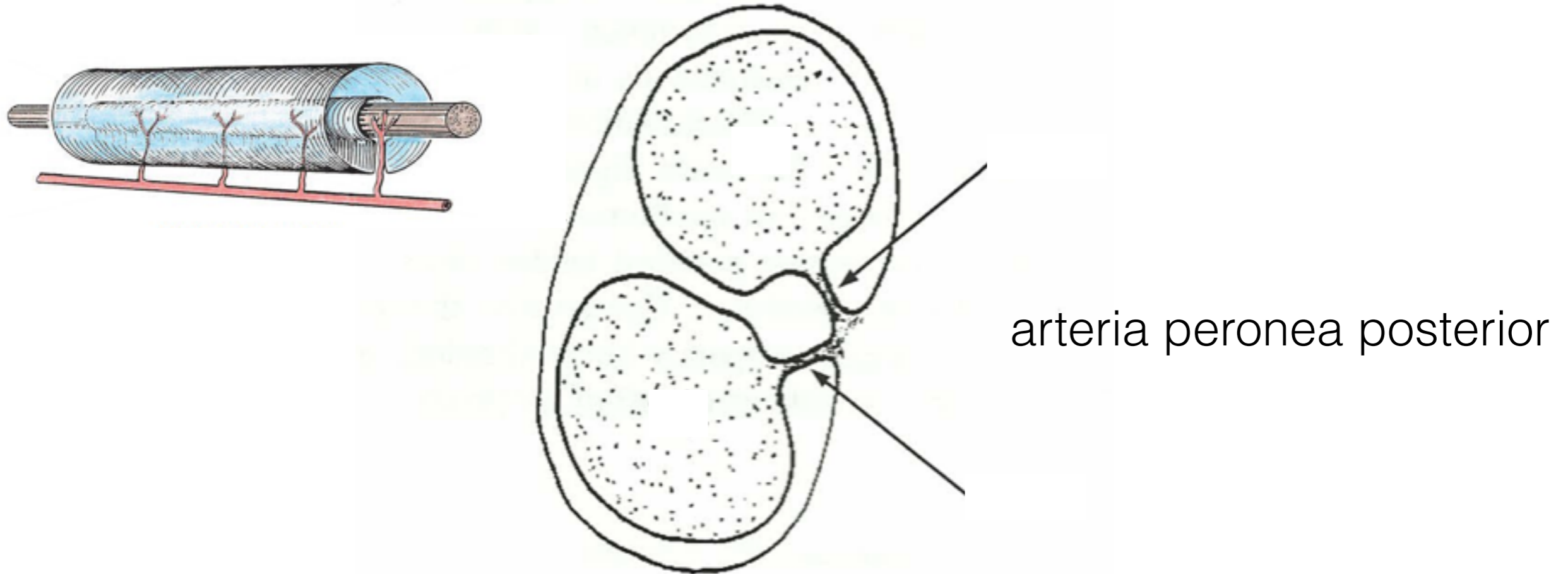
retináculo peroneal superior:



retináculo peroneal inferior:



vascularización:



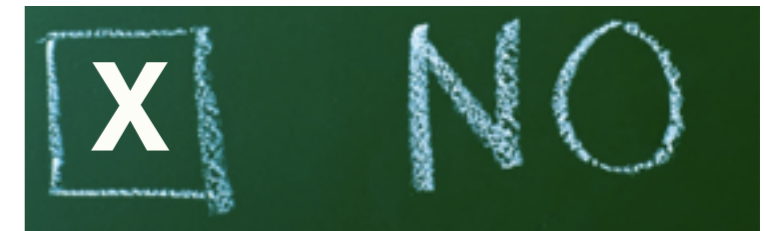
cada tendón tiene
un mesotenón propio

¿zona avascular?:

0198-0211/92/1308-0469\$03.00/0

FOOT & ANKLE

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Microvascular Anatomy of the Peroneal Tendons

Mark Sobel, M.D.,* Mark J. Geppert, M.D.,† Jo A. Hannafin, M.D., Ph.D.,‡ Walther H. O. Bohne, M.D.,§
and Steven P. Arnoczky, D.V.M.¶
New York, New York and East Lansing, Michigan

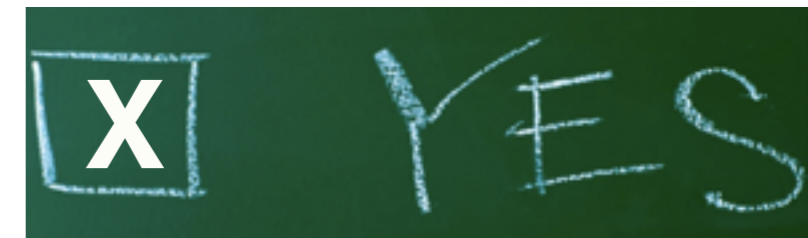
168

Acta Orthop Scand 2000; 71 (2): 168–174

Blood supply of the peroneal tendons

Injection and immunohistochemical studies of cadaver tendons

Wolf Petersen, Timm Bobka, Volker Stein and Bernhard Tillmann



variaciones anatómicas:

SOSPECHOSA

variaciones anatómicas:

- hipertrofia de tubérculo peroneal
- vientre muscular distal del PLC
- forma no cóncava del canal peroneo
- músculo peroneo cuarto accesorio
- os peroneum

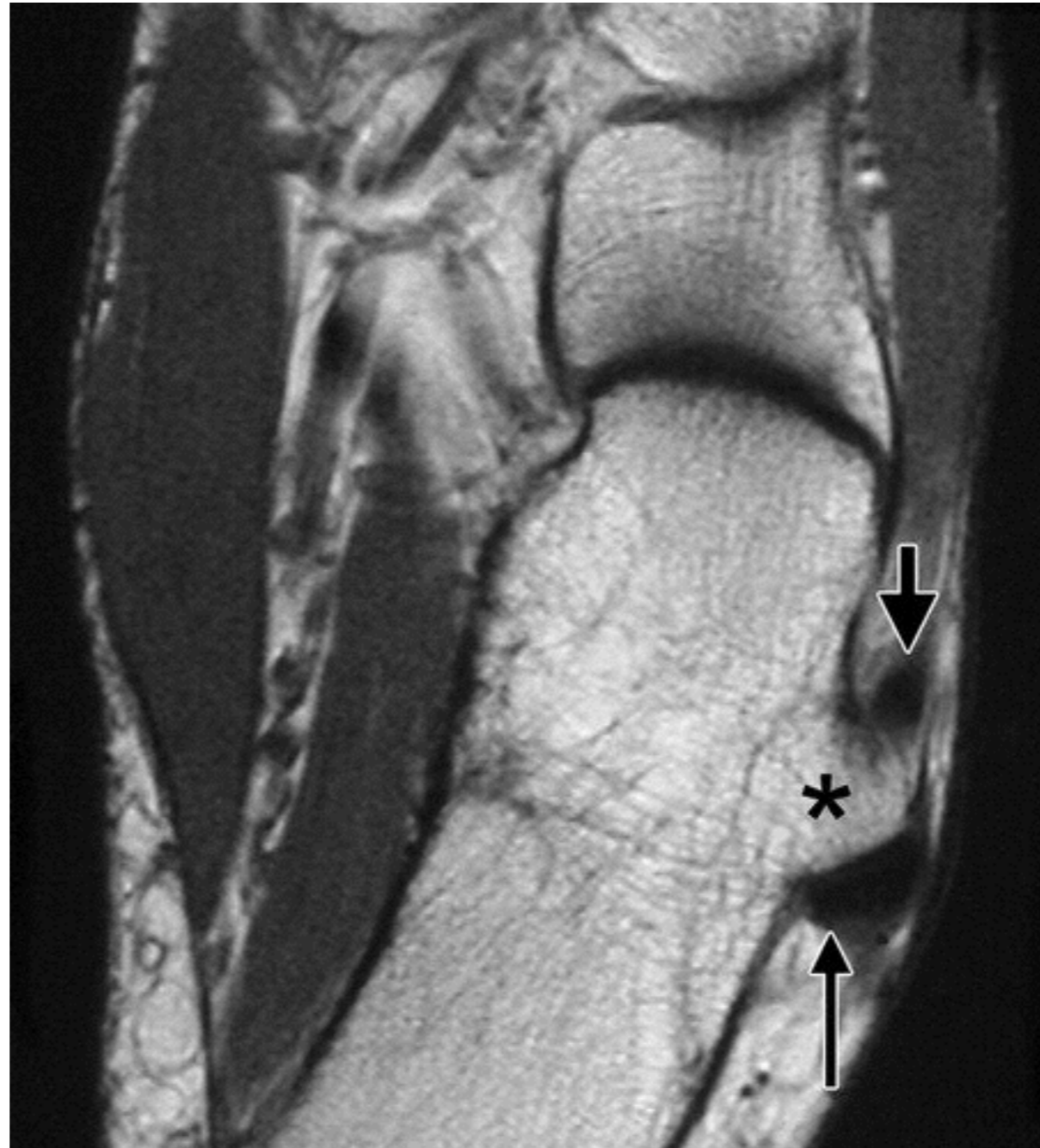
- hipertrofia de tubérculo peroneal



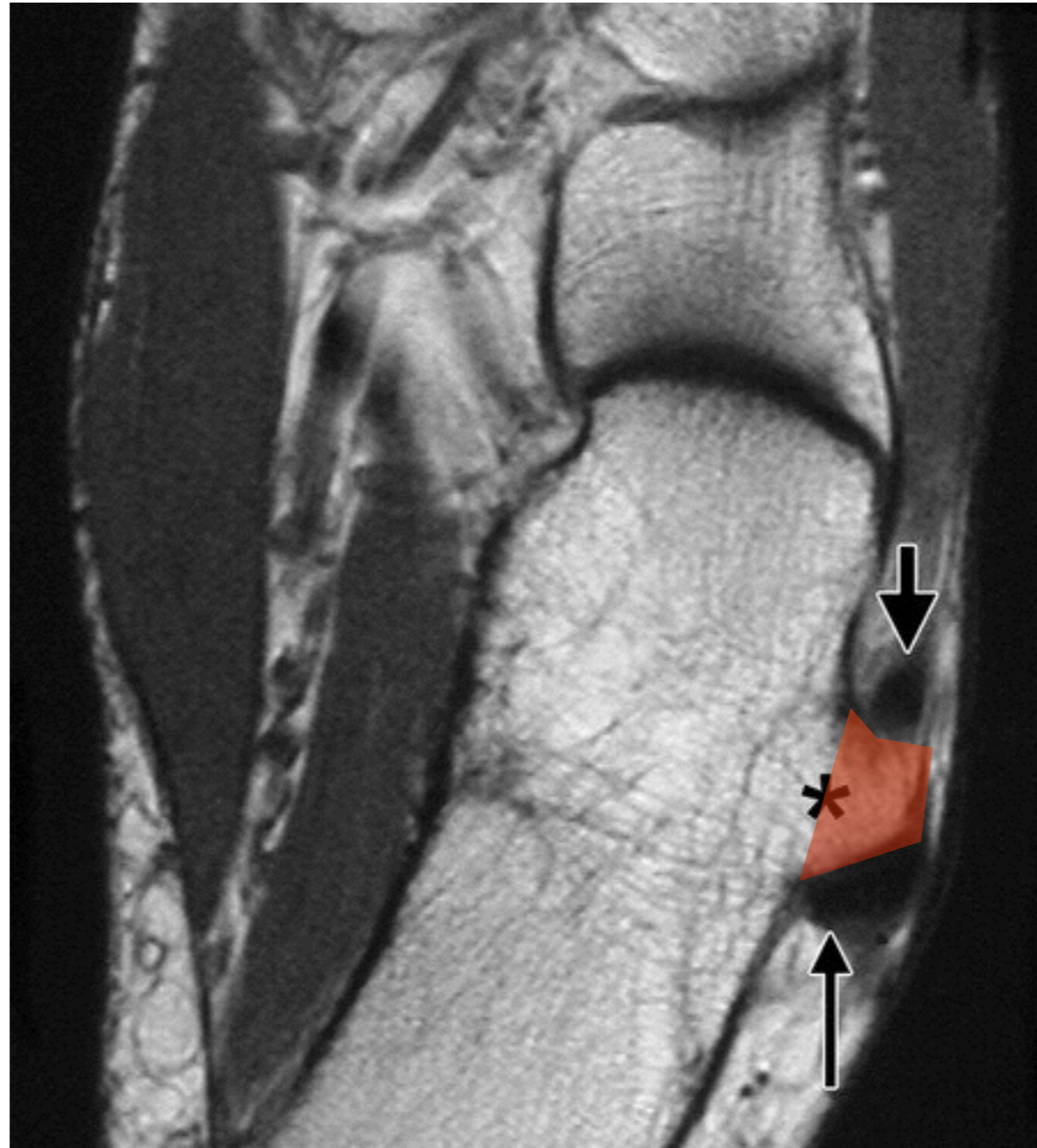
- hipertrofia de tubérculo peroneal



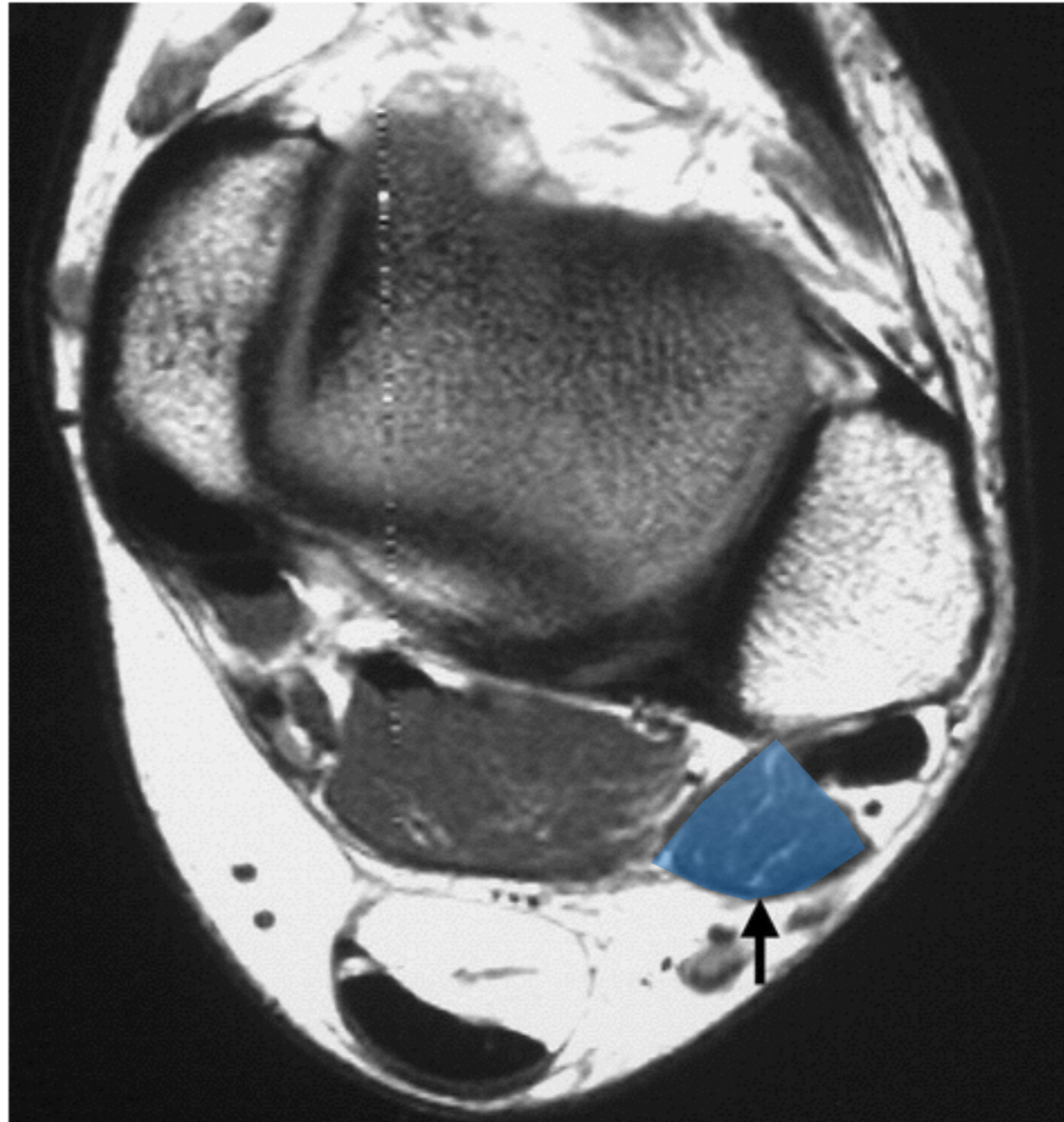
- hipertrofia de tubérculo peroneal



- hipertrofia de tubérculo peroneal



- vientre muscular distal del PLC

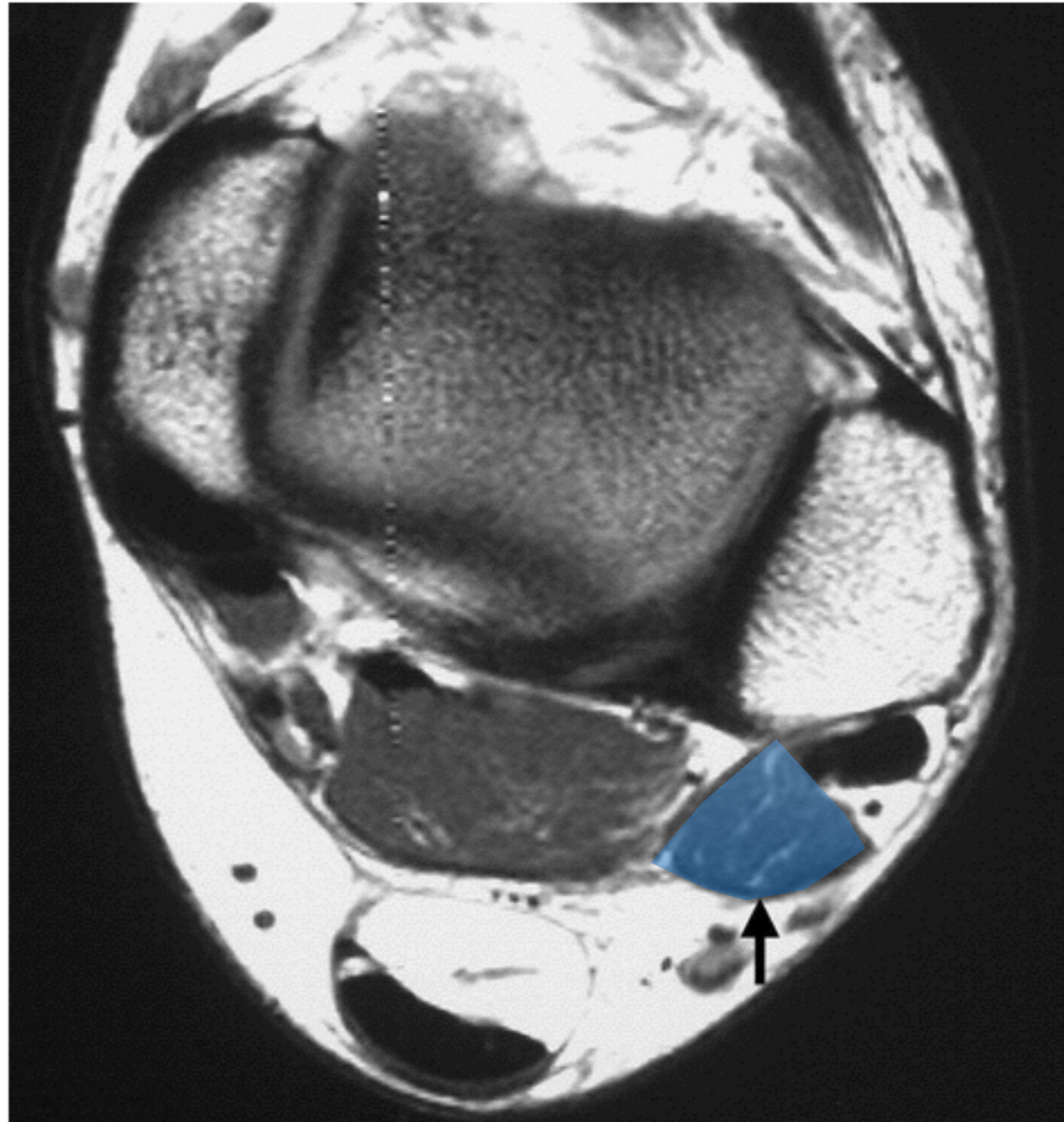


Geller J, Lin S, Cordas D, Vieira P.

Relationship of a low-lying muscle belly to tears of the peroneus brevis tendon.

Am J Orthop (Belle Mead NJ) 32:541–544, 2003.

- vientre muscular distal del PLC

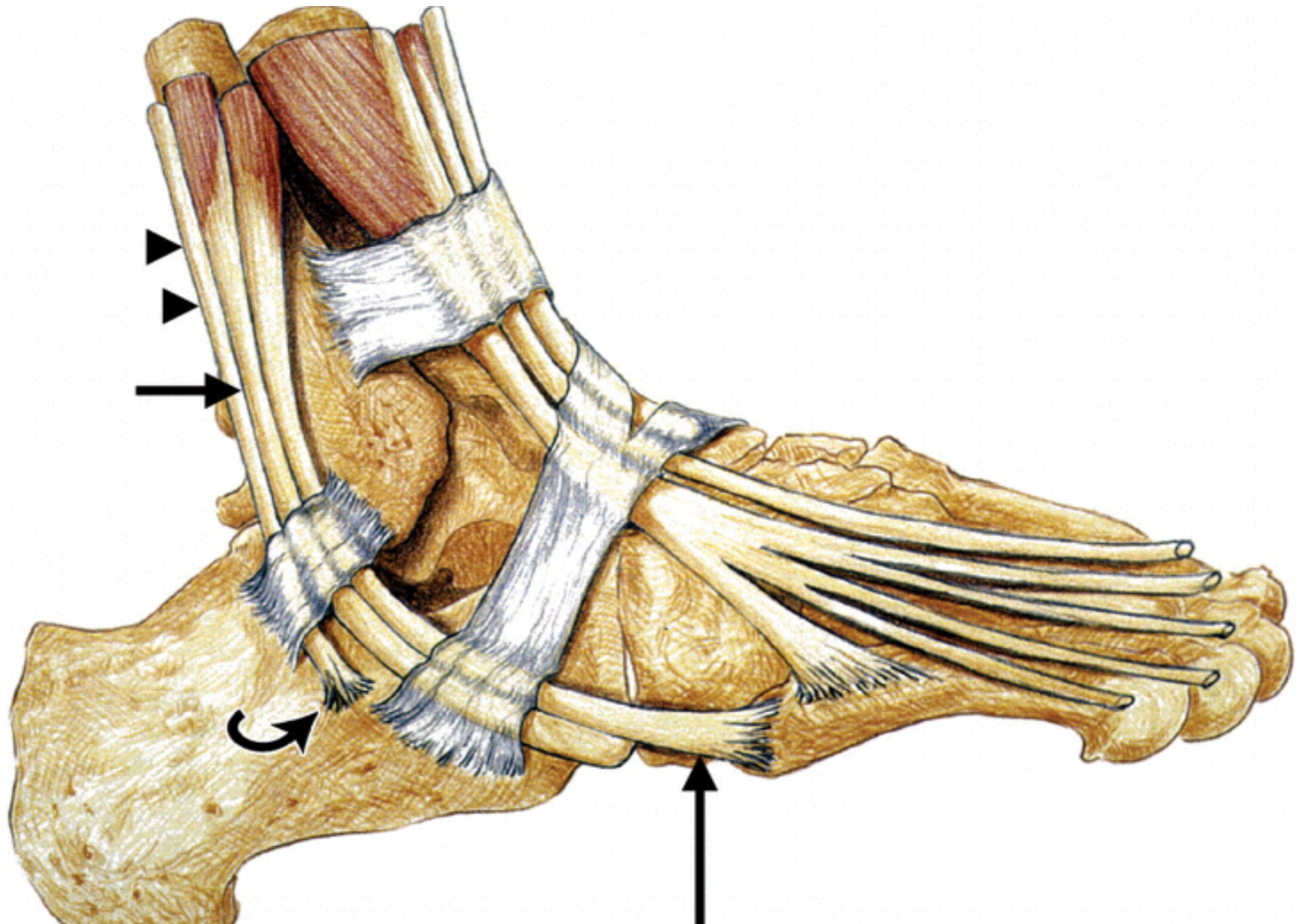


Geller J, Lin S, Cordas D, Vieira P.

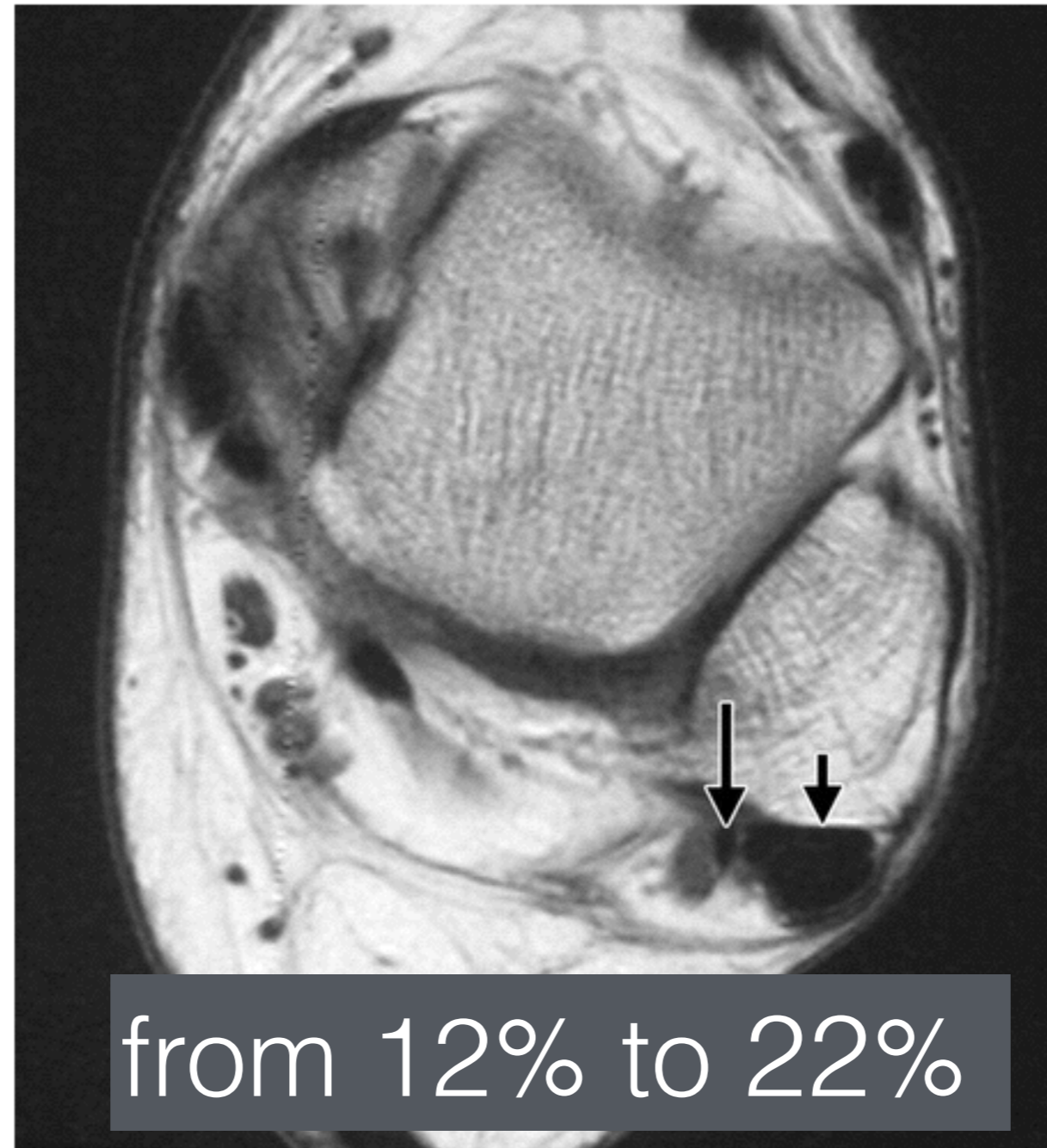
Relationship of a low-lying muscle belly to tears of the peroneus brevis tendon.

Am J Orthop (Belle Mead NJ) 32:541–544, 2003.

- músculo peroneo anterior



- músculo peroneo anterior

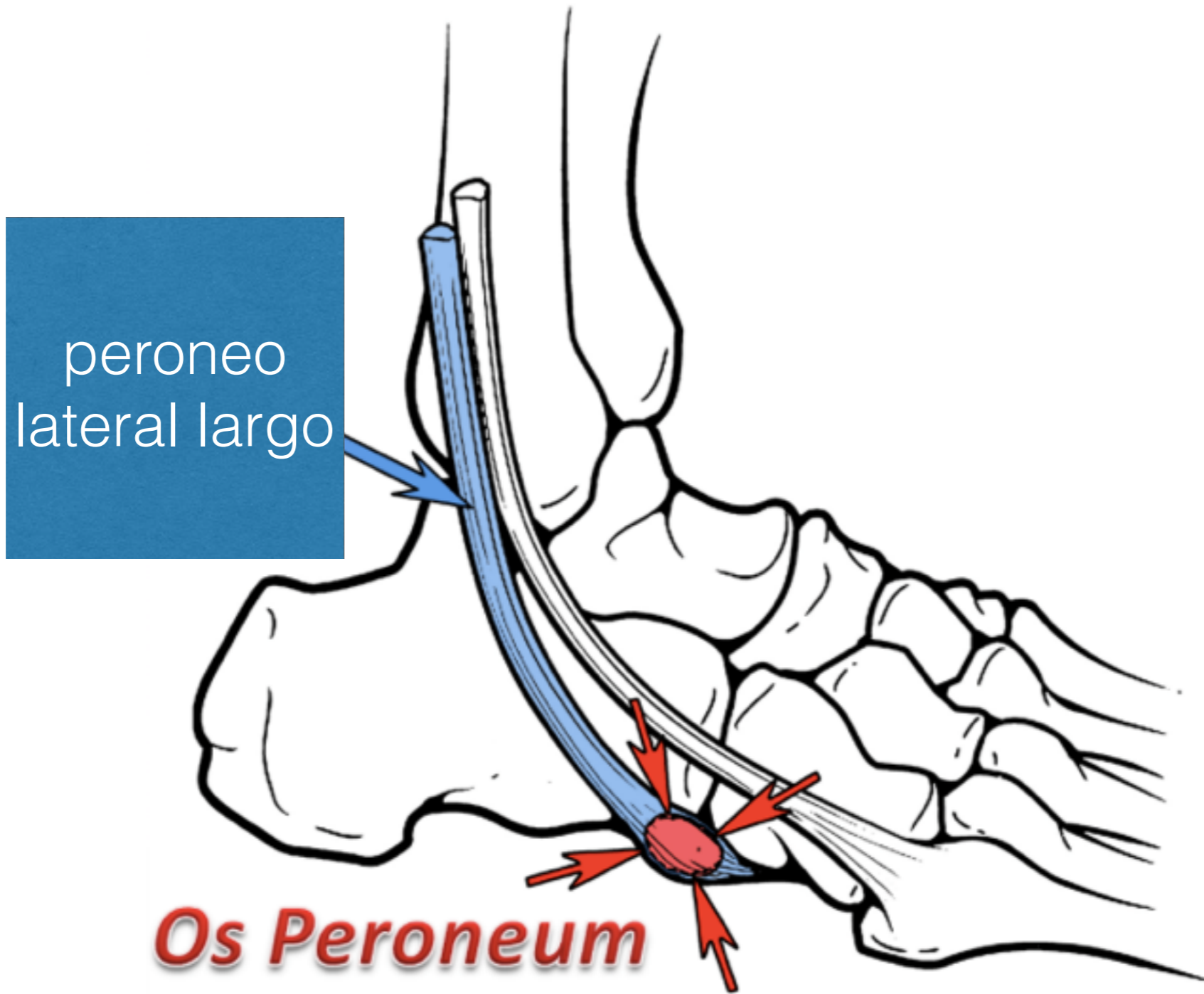


Cheung Y, Rosenberg ZS.

MR imaging of the accessory muscles around the ankle

Magn Reson Imaging Clin N Am 2001; 9: 465–473

- os peroneum



- os peroneum



it is visible on 20% of foot radiographs

Sammarco VJ, Cuttica DJ, Sammarco GJ.

Lasso stitch with peroneal retinaculo-plasty for repair of fractured os peroneum: a report of two cases.

Clin Orthop Relat Res. 2010 Apr;468(4):1012-7.

he present study did not find evidence to support the presumed correlations between peroneal tendon pathologic findings and:

- hypertrophied peroneal tubercles
- low-lying muscle bellies
- the peroneus quartus muscle

Galli MM, Protzman NM2, Mandelker EM et al.

An examination of anatomic variants and incidental peroneal tendon pathologic features: a comprehensive MRI review of asymptomatic lateral ankles.

J Foot Ankle Surg. 2015 Mar-Apr;54(2):164-72.

variaciones anatómicas:

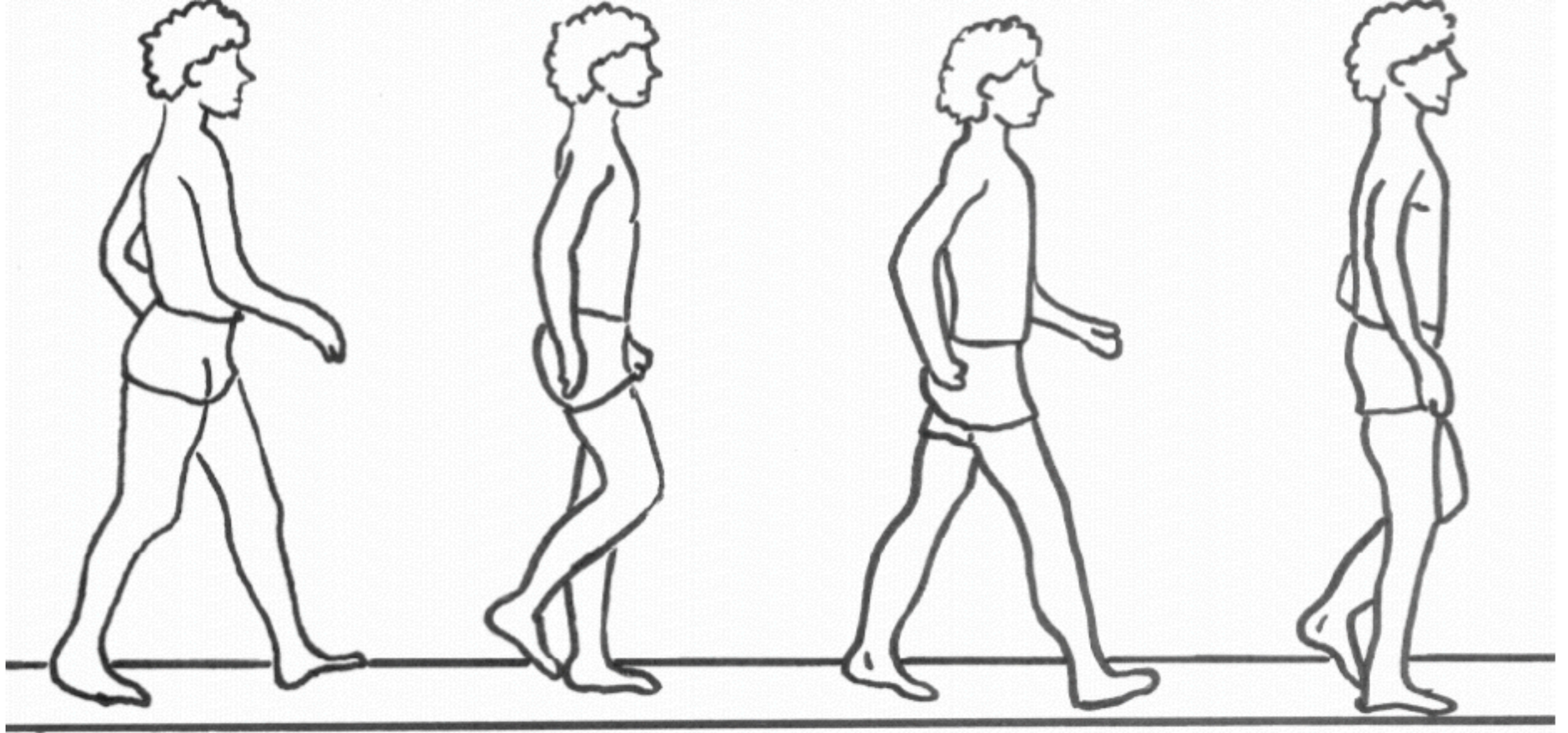
- ✓ - hipertrofia de tubérculo peroneal
- ✓ - vientre muscular distal del PLC
- ✓ - forma no cóncava del canal peroneo
- ✓ - músculo peroneo cuarto accesorio
- ✓ - os peroneum

variaciones anatómicas:

- hipertrofia de tubérculo peroneal
- vientre muscular distal del PLC
- ✓ - forma no cóncava del canal peroneo
- músculo peroneo cuarto accesorio
- ✓ - os peroneum



biomecánica



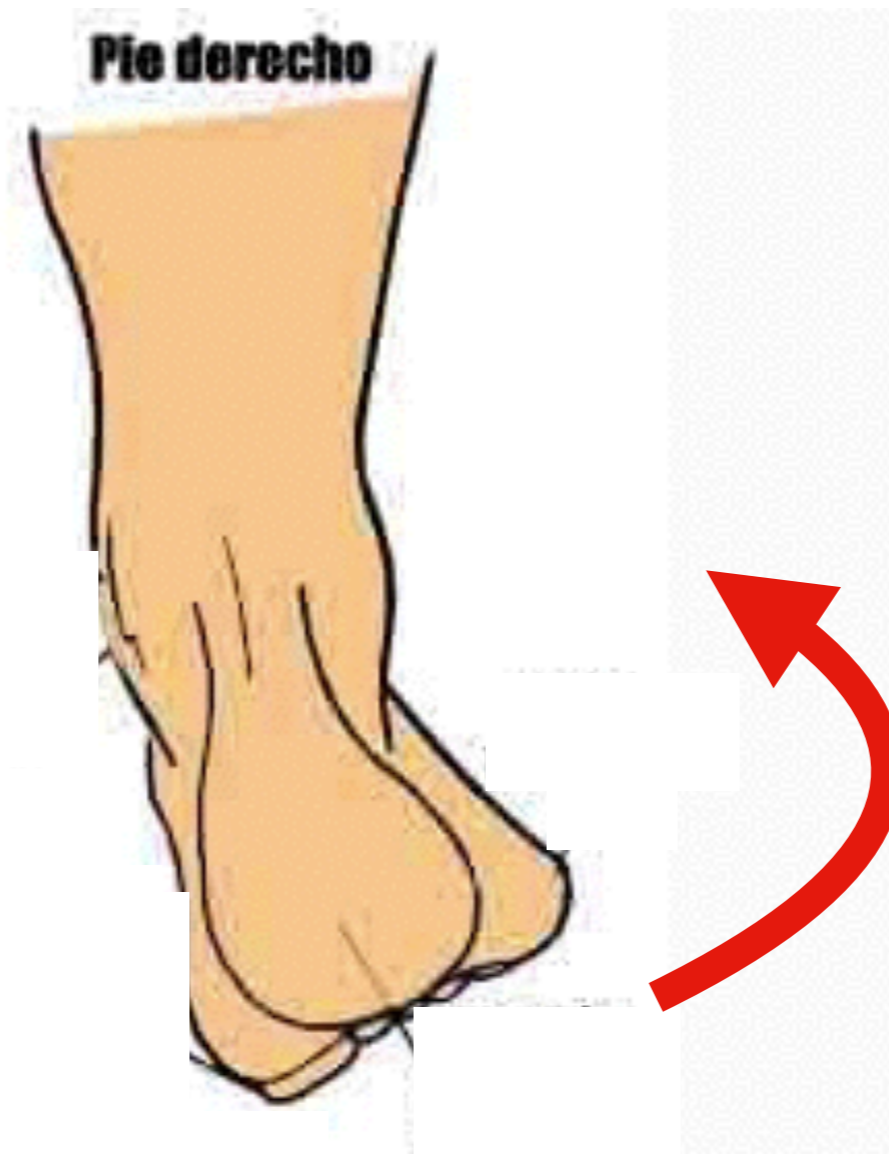
FASE APOYO IZQUIERDO

BIPODAL

MONOPODAL

BIPODAL

pronadores del retropié

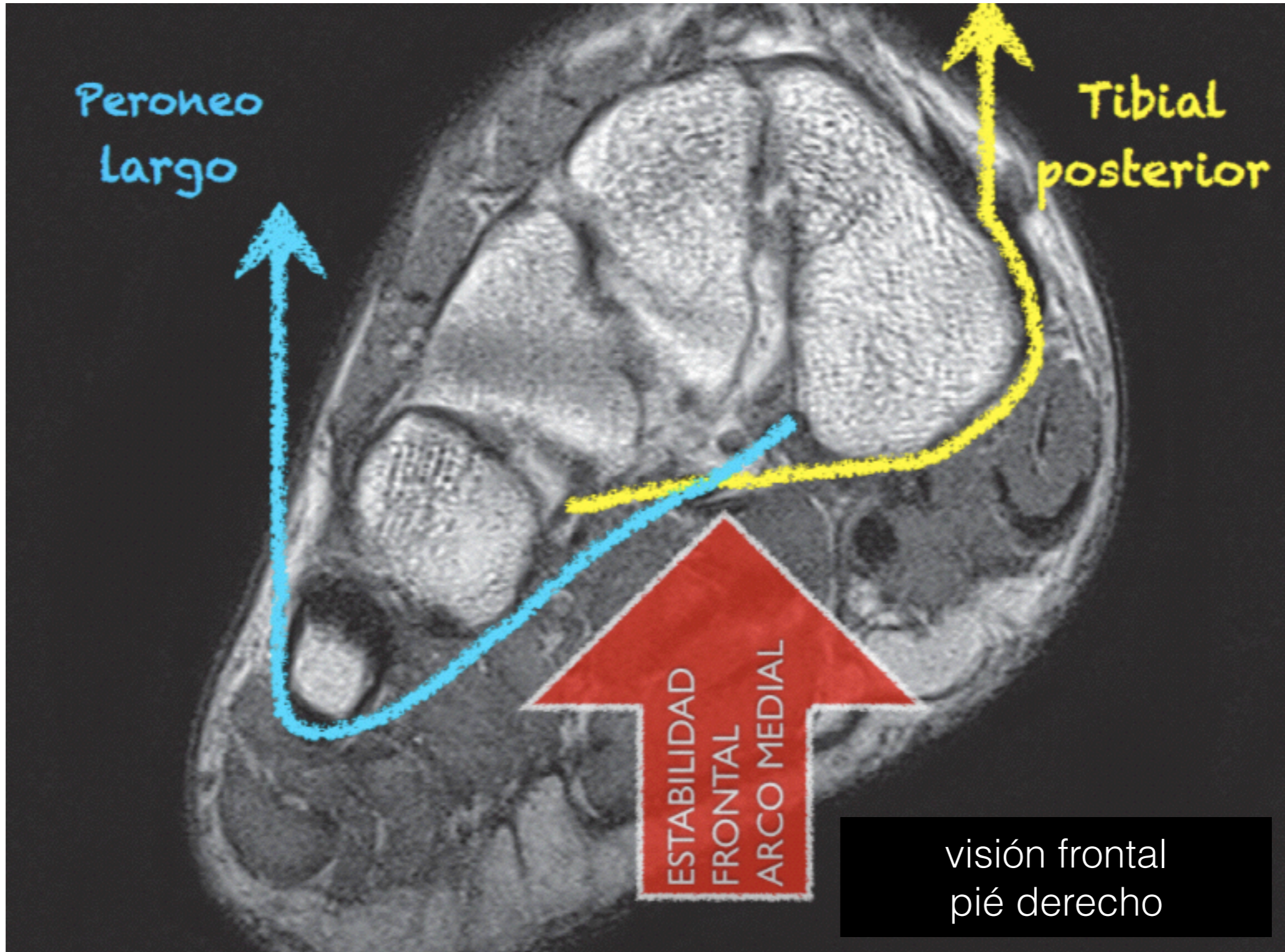


Peroneo
largo

Tibial
posterior

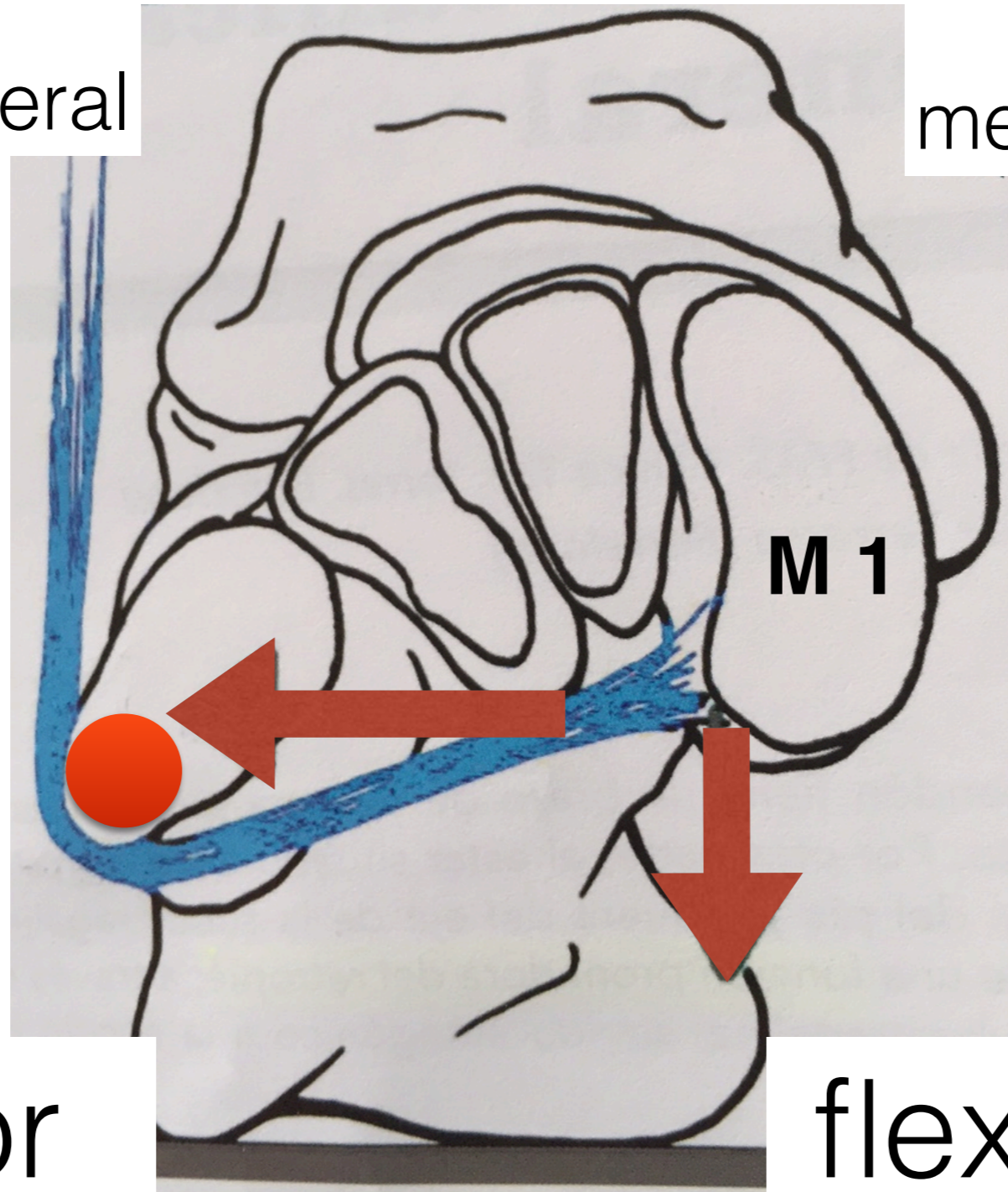
ESTABILIDAD
FRONTAL
ARCO MEDIAL

visión frontal
pié derecho



lateral

medial

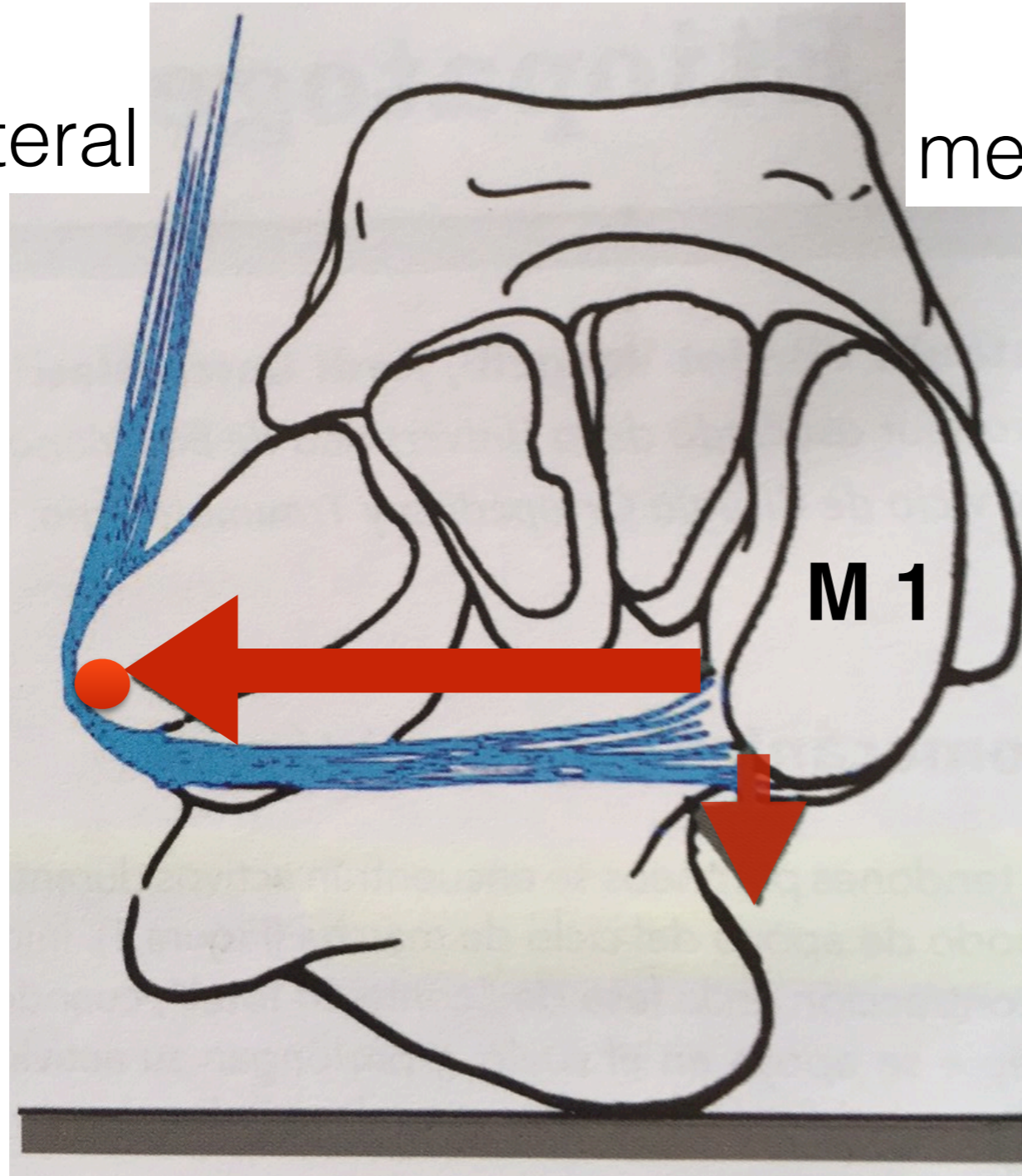


pronador
de subastra

flexor plantar
de M1

lateral

medial



sobrecarga funcional:

- varo del calcáneo
- inestabilidad ligamentosa

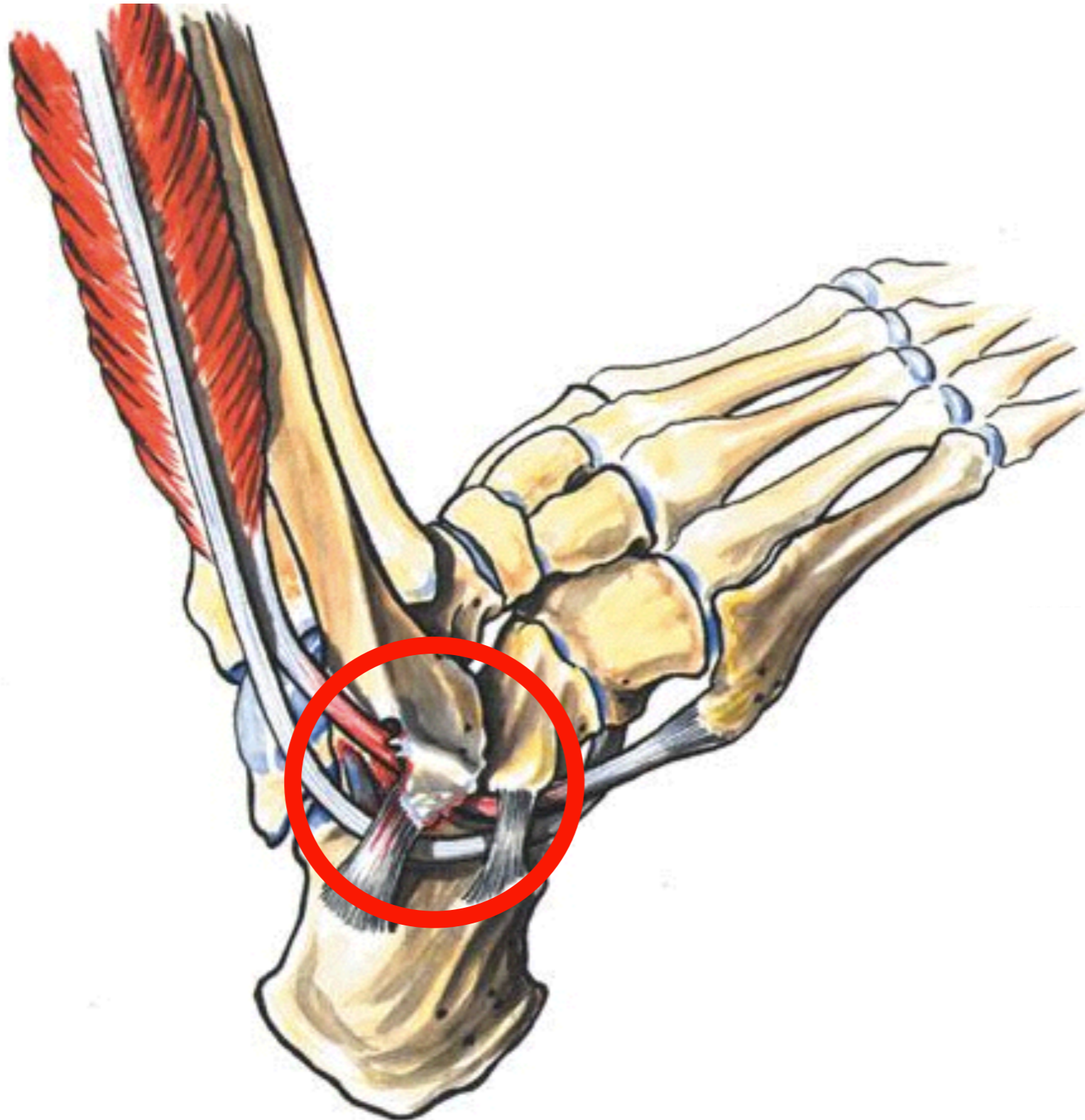
Manoli A, Graham B.
The subtle cavus foot, "the underpronator".
Foot Ankle Int. 2005 Mar;26(3):256-63.

A close-up photograph of a person's hand massaging their right ankle. The hand is positioned over the ankle joint, with fingers applying pressure. The background is a plain, light-colored surface.

clínica



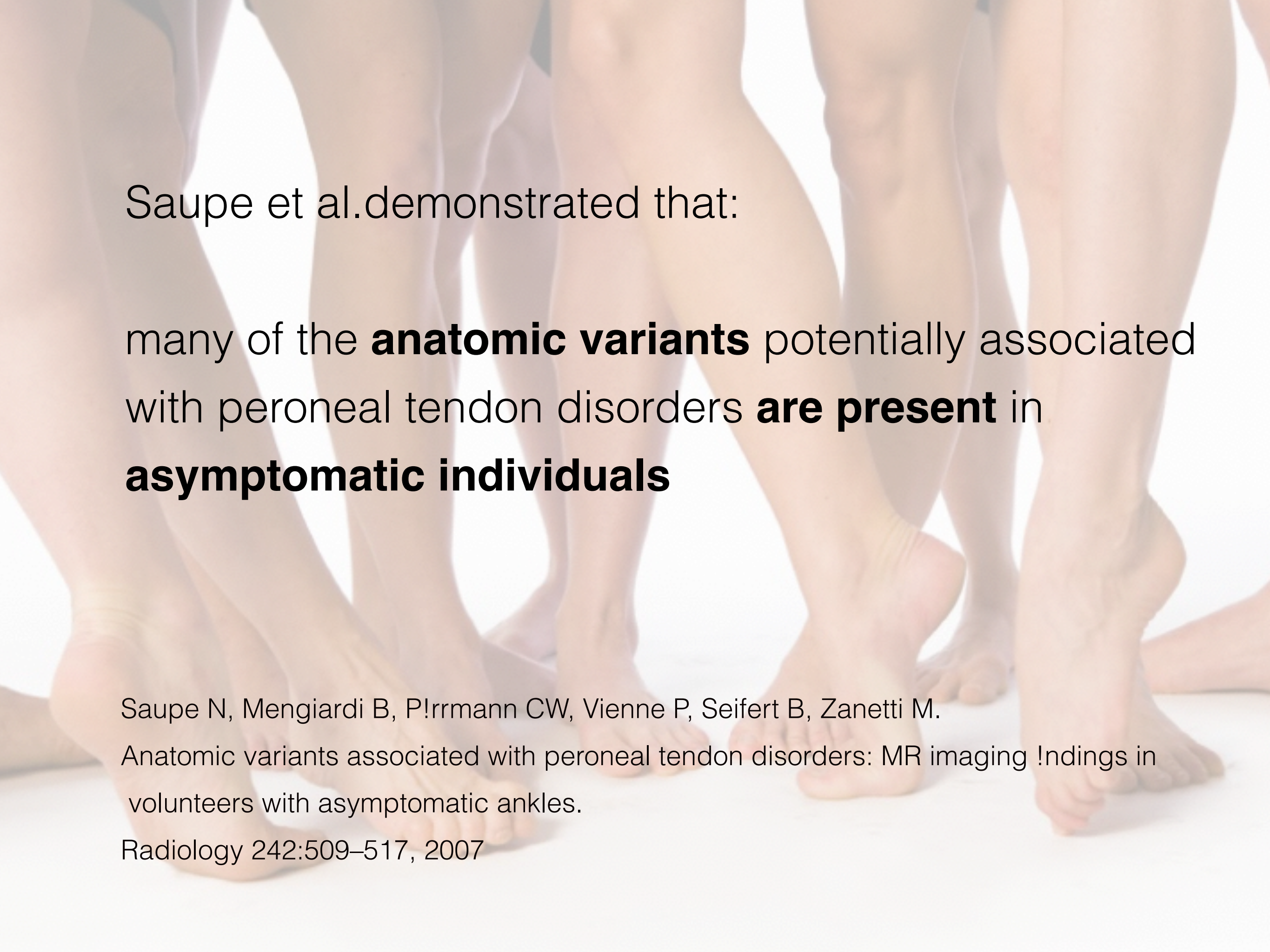
contracción brusca
en posición de dorsiflexión





diagnóstico

**HECHO
A MANO**

A photograph showing the lower legs and feet of several people standing on a white surface. The image is slightly blurred and has a soft, ethereal quality. The text is overlaid on this background.

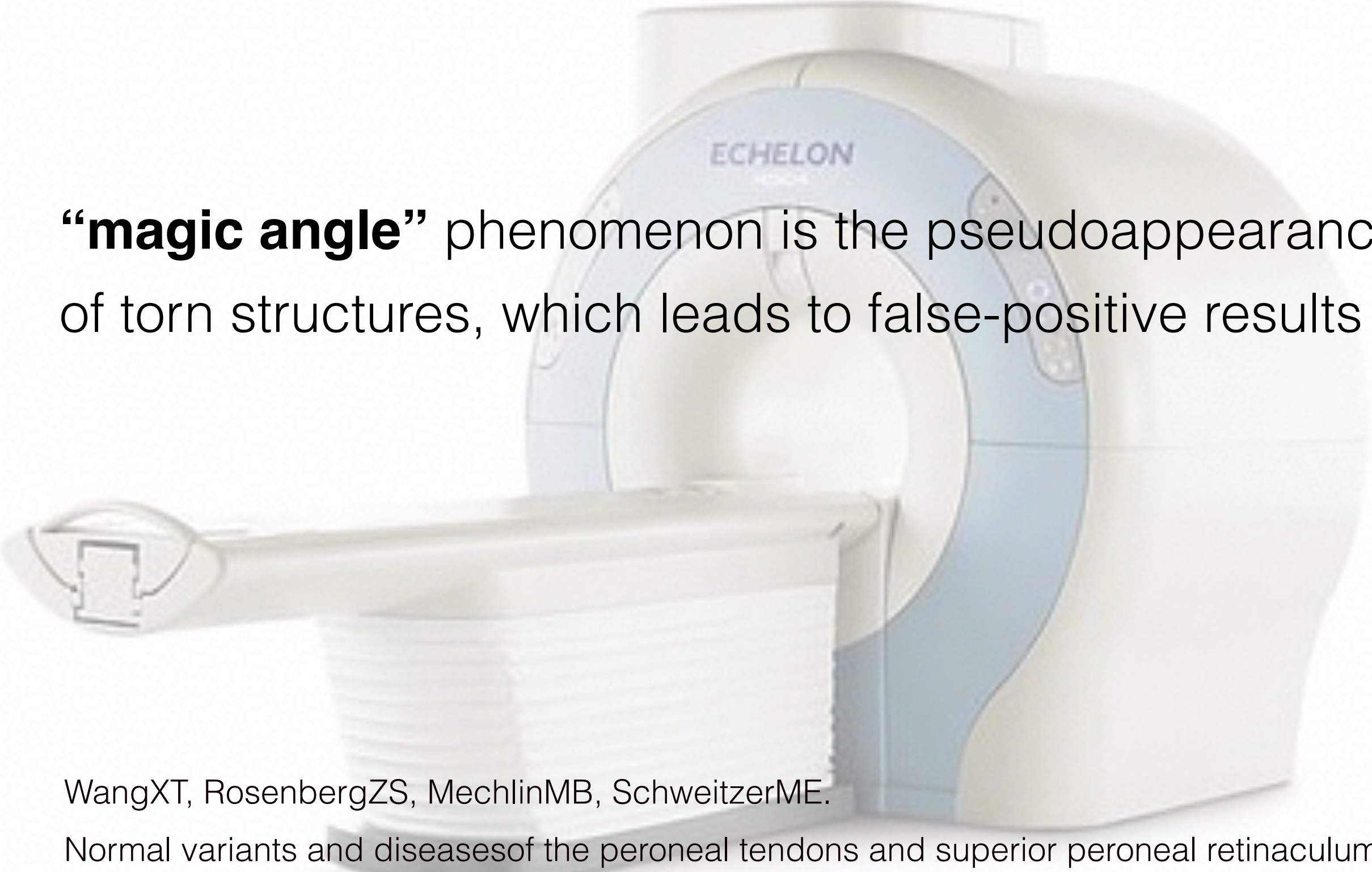
Saupe et al. demonstrated that:

many of the **anatomic variants** potentially associated with peroneal tendon disorders **are present** in **asymptomatic individuals**

Saupe N, Mengiardi B, Pirrmann CW, Vienne P, Seifert B, Zanetti M.

Anatomic variants associated with peroneal tendon disorders: MR imaging findings in volunteers with asymptomatic ankles.

Radiology 242:509–517, 2007



“magic angle” phenomenon is the pseudoappearance of torn structures, which leads to false-positive results

WangXT, RosenbergZS, MechlinMB, SchweitzerME.

Normal variants and diseases of the peroneal tendons and superior peroneal retinaculum:
MR imaging features.

Radiographics 25:587–602, 2005.



There is a lower sensitivity of 57% for peroneus brevis and longus ruptures.

Kuwada GT.

Surgical correlation of preoperative MRI findings of trauma to tendons and ligaments of the foot and ankle.

J Am Podiatr Med Assoc 98:370–373, 2008.

“Es más fácil engañar a la gente, que convencerlos que han sido engañados”

Mark Twain





tratamiento:

- tendinitis
- ruptura
- inestabilidad



tratamiento:

- tendinitis

- ruptura

- inestabilidad



Non surgical treatment of peroneal tenosynovitis
is usually successful



tratamiento:

- tendinitis
- ruptura
- inestabilidad



cirugía de los tendones peroneos:
interpretar (hallazgos) ...



cirugía de los tendones peroneos:
... y tratar (lesiones)


ventajas:

morbilidad de partes blandas



inconveniente:

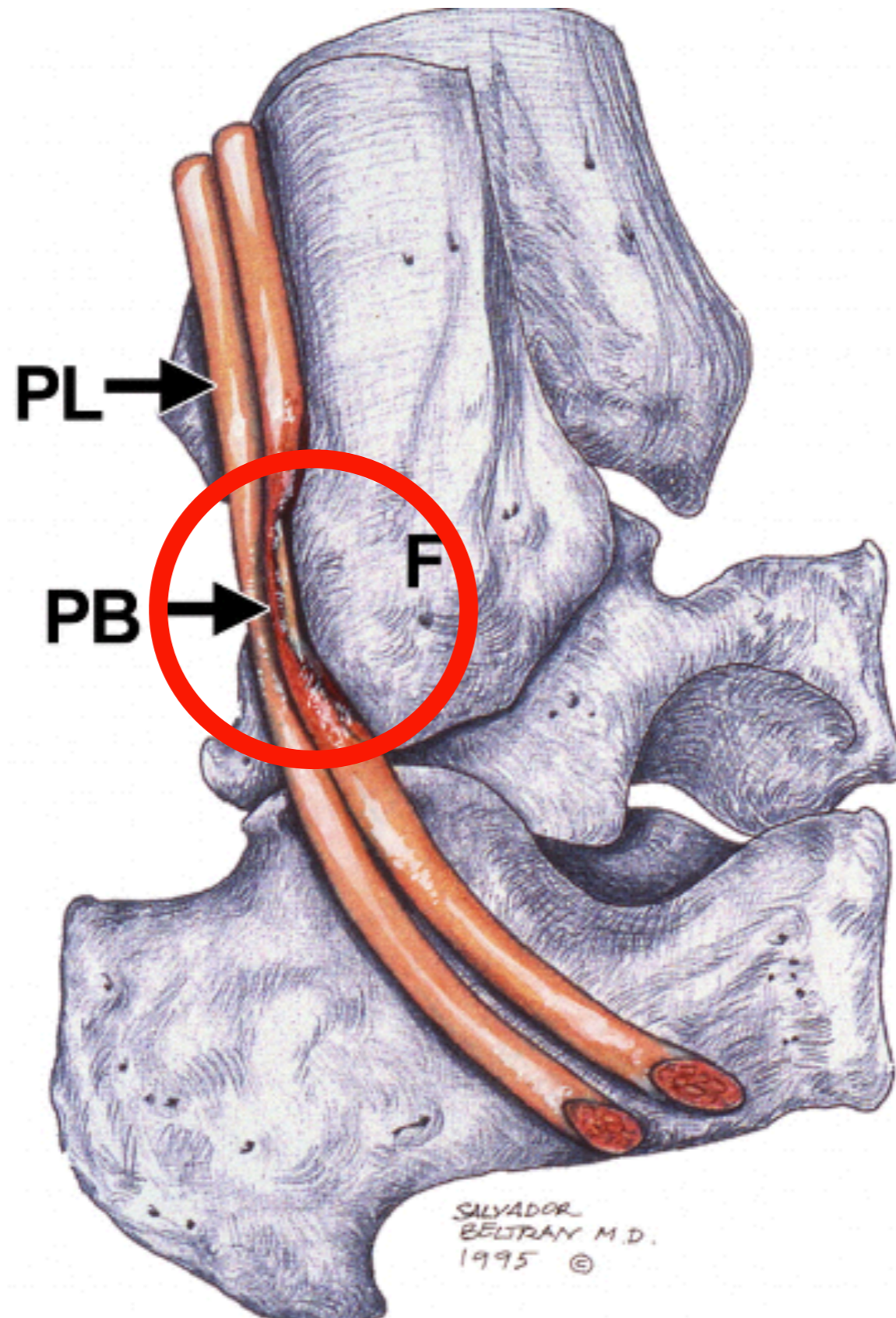
dificultad de: “*interpretar* (hallazgos), *tratar* (lesiones)”

A close-up photograph of a middle-aged man with dark hair, wearing a dark suit jacket, a white shirt, and a blue tie. He is smiling broadly and pointing his right index finger directly at the camera. The background is a plain, light-colored wall.

Iñaki:
te gusta el artroscopio
más que a un tonto
una tiza

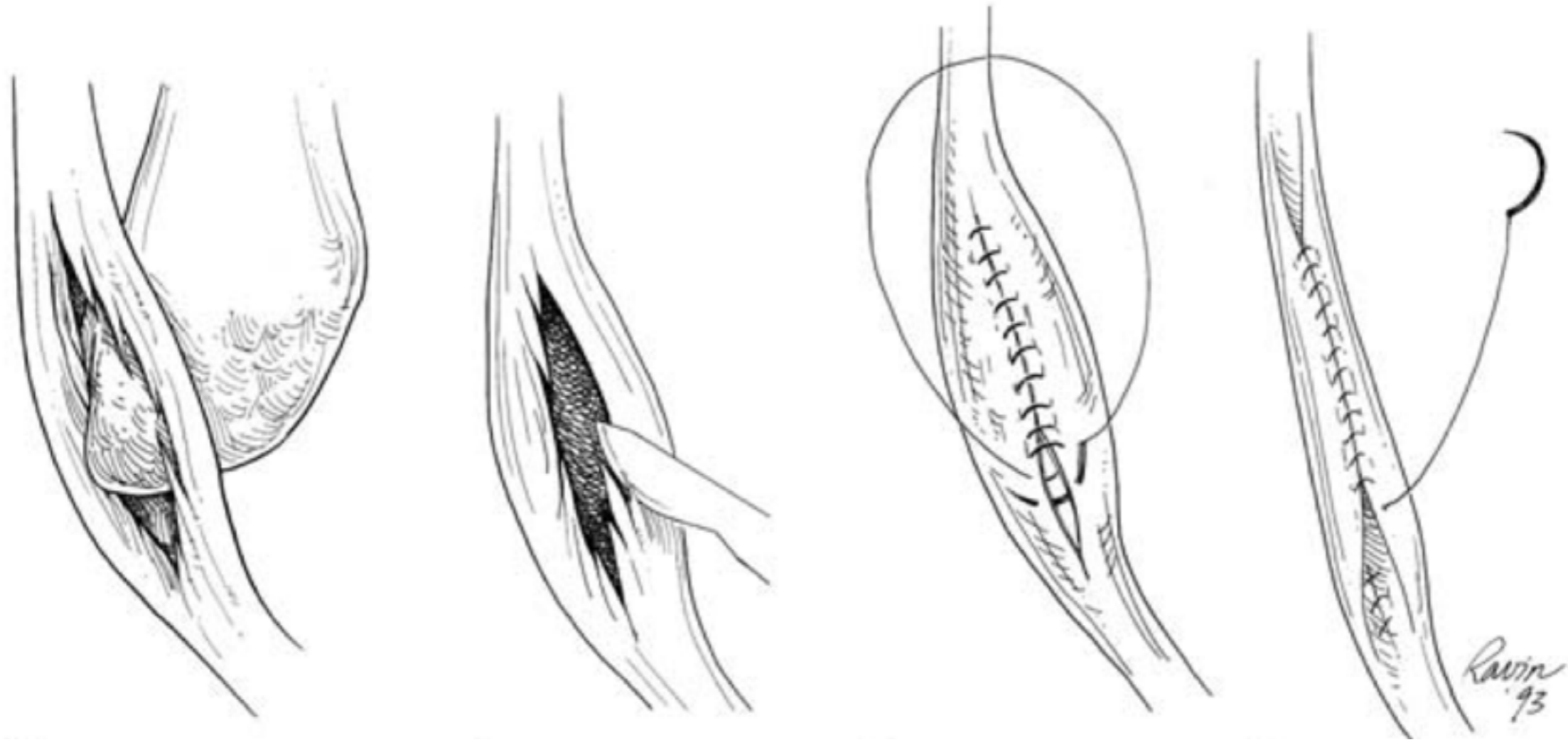
¡y lo sabes!

- peroneo lateral corto



- peroneo lateral corto

si la degeneración afecta es $< 50\%$ de la sección del tendón:



Krause JO, Brodsky JW.

Peroneus brevis tendon tears: pathophysiology, surgical reconstruction, and clinical results.

Foot Ankle Int. 1998 May;19(5):271-9.

- peroneo lateral corto

si la degeneración afecta es $> 50\%$ de la sección del tendón:

- reparación directa termino - terminal previa excisión
- tenodesis al PLL (abocar ambos extremos al PLL)

Terrence M. Philbin, DO, Geoffrey S. Landis, DO and Bret Smith,
Review Article: Peroneal Tendon Injuries
J Am Acad Orthop Surg 2009; 17: 306-317

- peroneo lateral largo

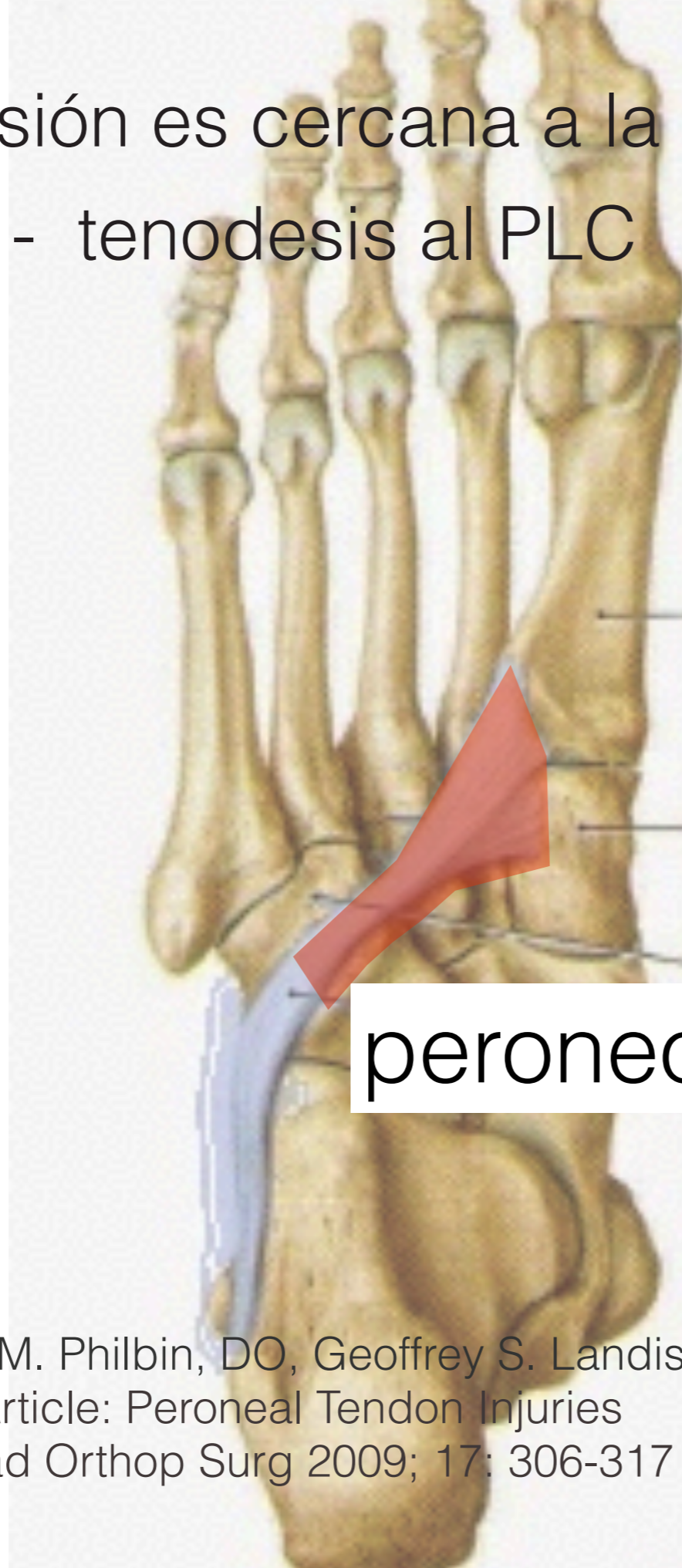


- peroneo lateral largo

si la lesión es en el **mismo sitio**, podemos **hacer lo mismo**:
desbordamiento, tubularización o sutura termino-terminal
(podemos escindir el os peroneum)

si la lesión es cercana a la inserción distal:

- tenodesis al PLC



peroneo lateral largo

Terrence M. Philbin, DO, Geoffrey S. Landis, DO and Bret Smith,
Review Article: Peroneal Tendon Injuries
J Am Acad Orthop Surg 2009; 17: 306-317

- lesión de ambos tendones

Type I
Both tendons grossly intact

Type II
One tendon torn
One usable

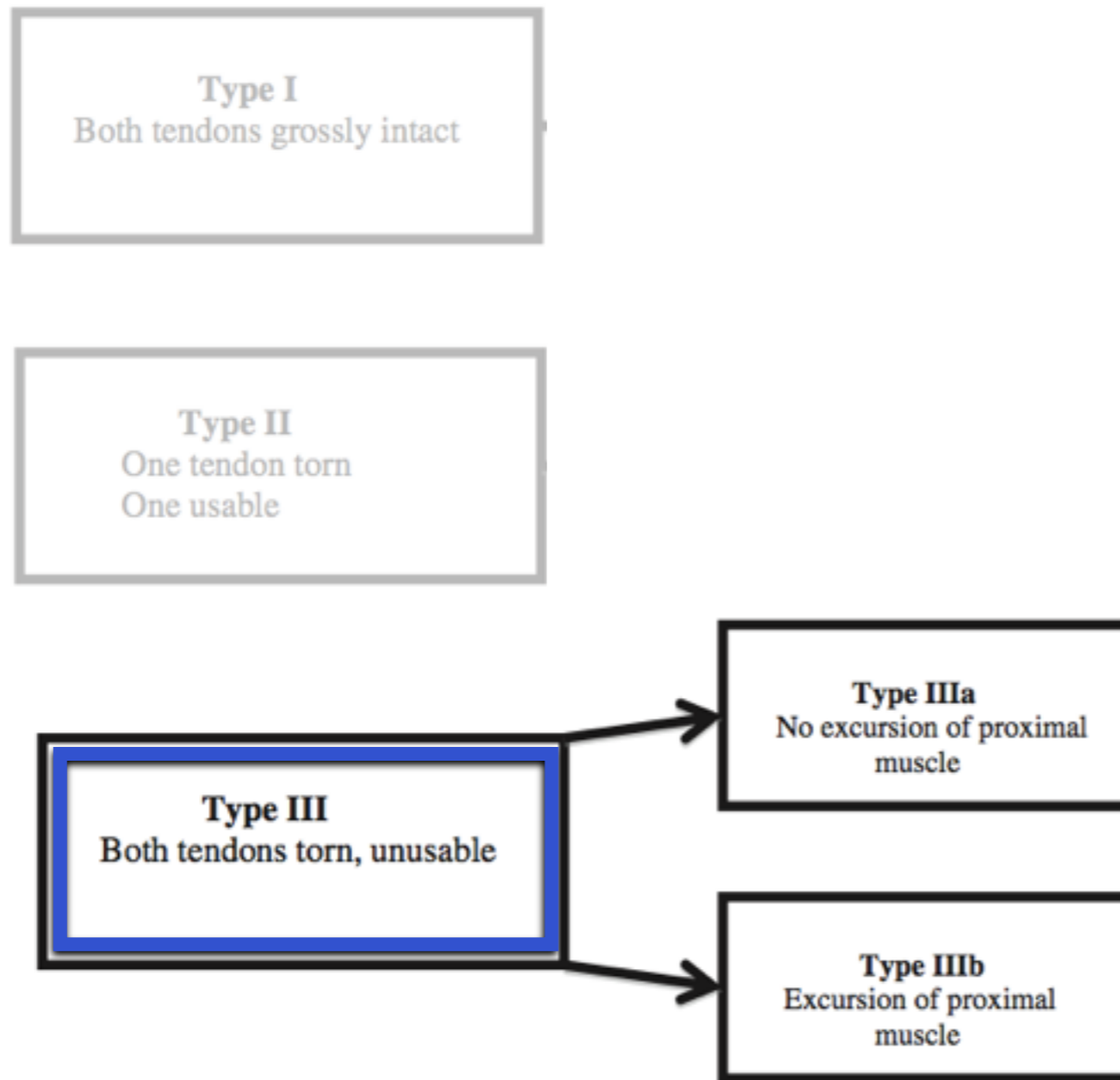
Type III
Both tendons torn, unusable

Redfern D, Myerson M.

The management of concomitant tears of the peroneus longus and brevis tendons.

Foot Ankle Int. 2004 Oct;25(10):695-707.

- lesión de ambos tendones

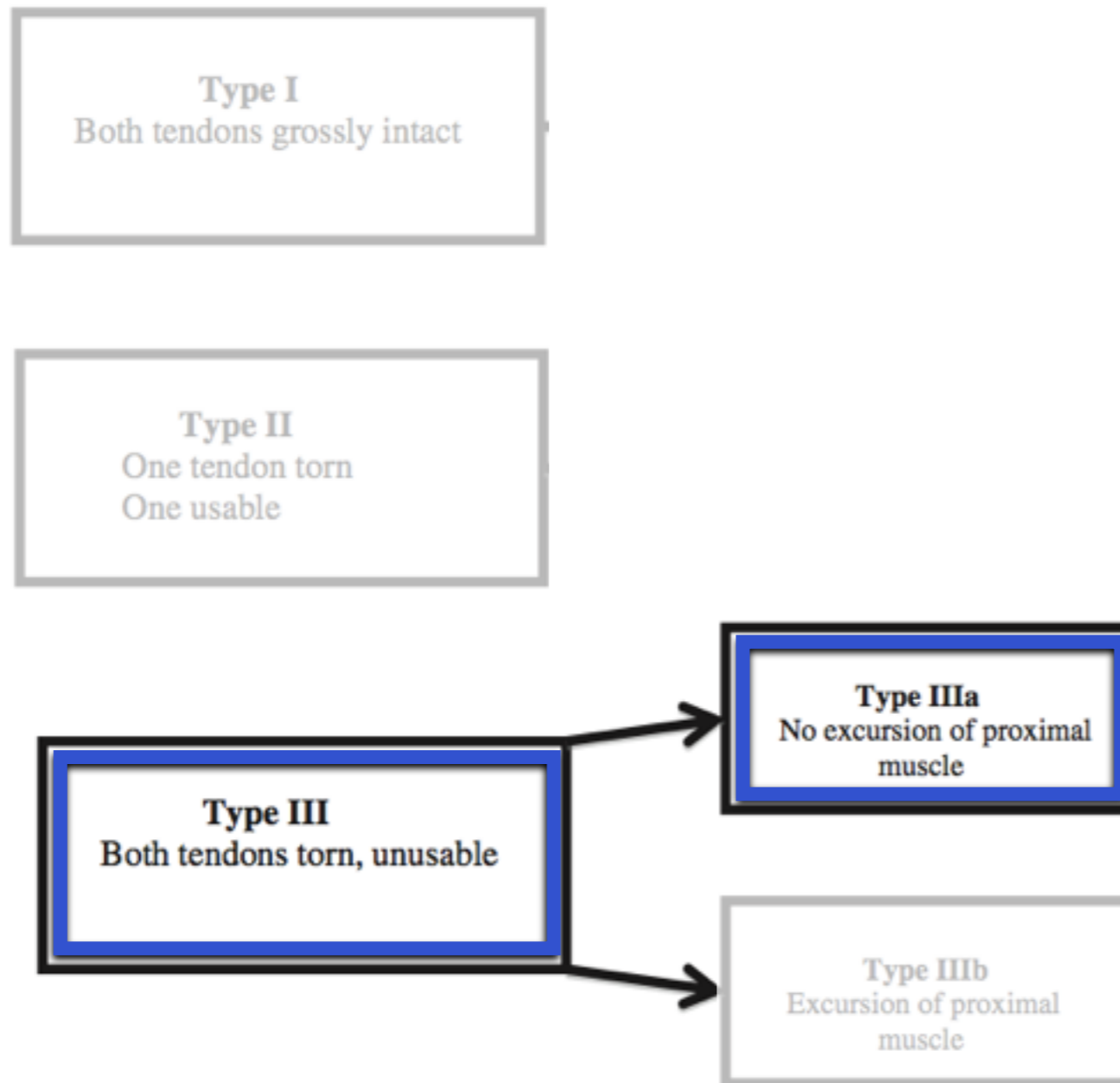


Redfern D, Myerson M.

The management of concomitant tears of the peroneus longus and brevis tendons.

Foot Ankle Int. 2004 Oct;25(10):695-707.

- lesión de ambos tendones

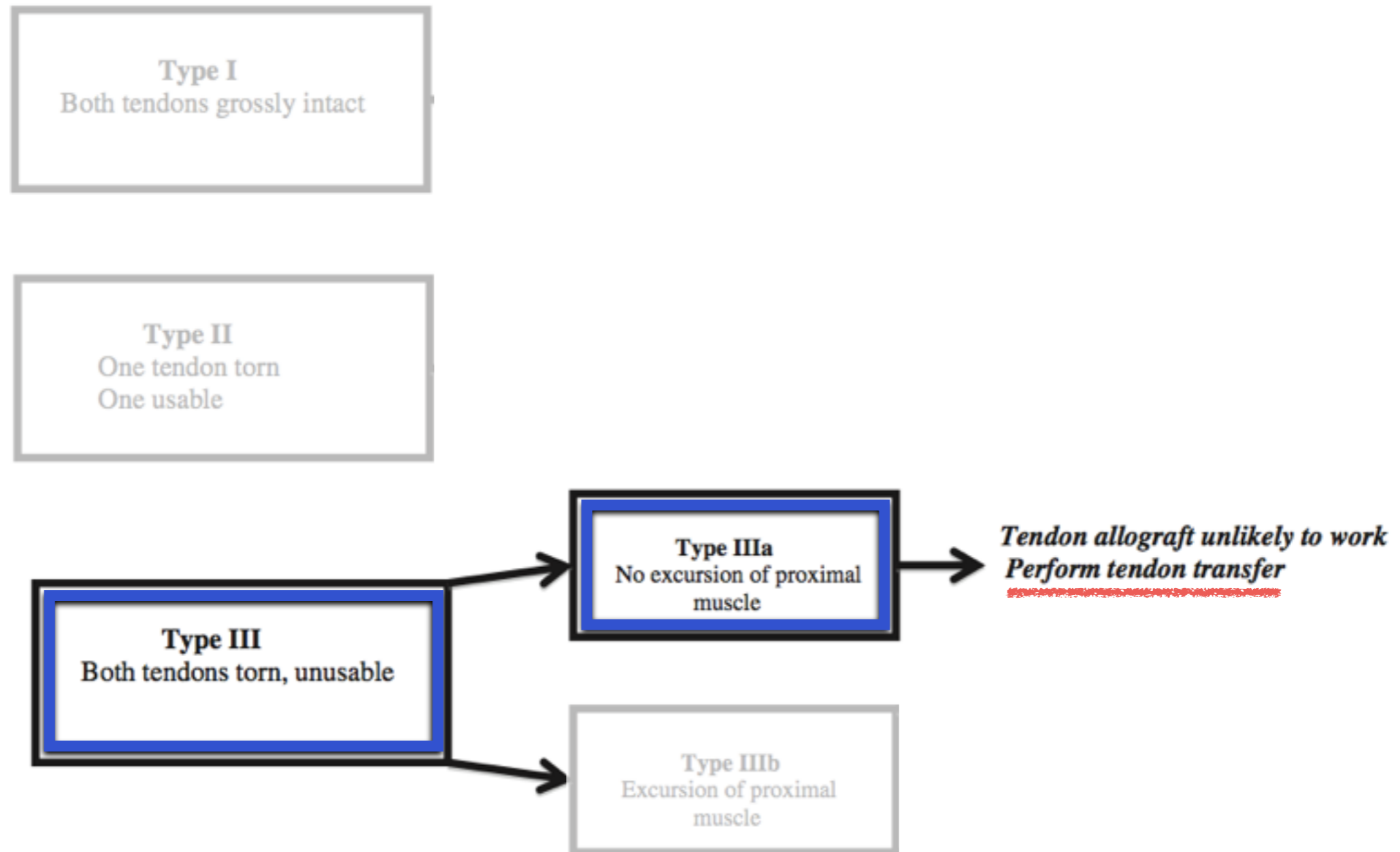


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The management of concomitant tears of the peroneus longus and brevis tendons.

Foot Ankle Int. 2004 Oct;25(10):695-707.

- lesión de ambos tendones

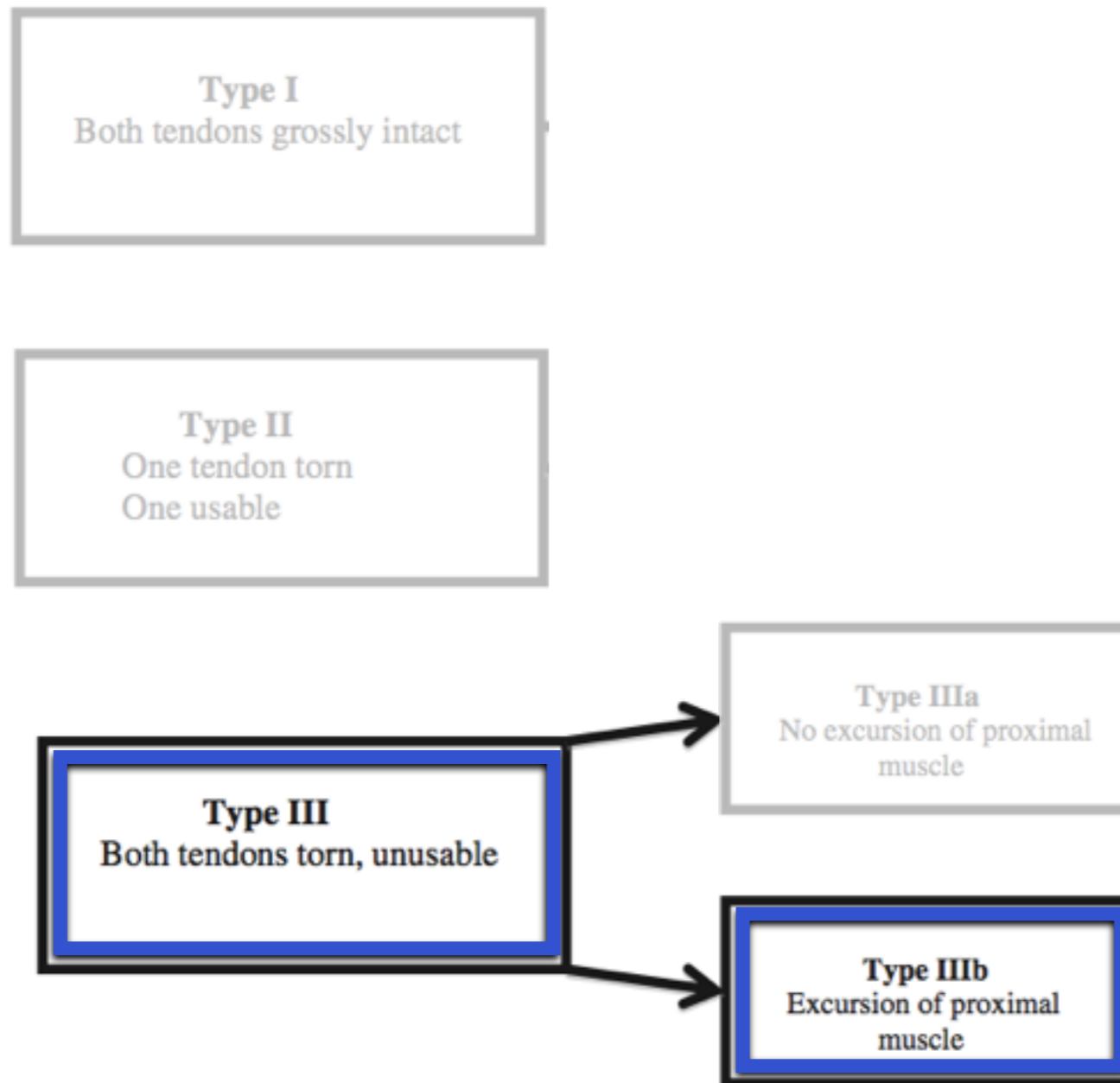


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The management of concomitant tears of the peroneus longus and brevis tendons.

Foot Ankle Int. 2004 Oct;25(10):695-707.

- lesión de ambos tendones

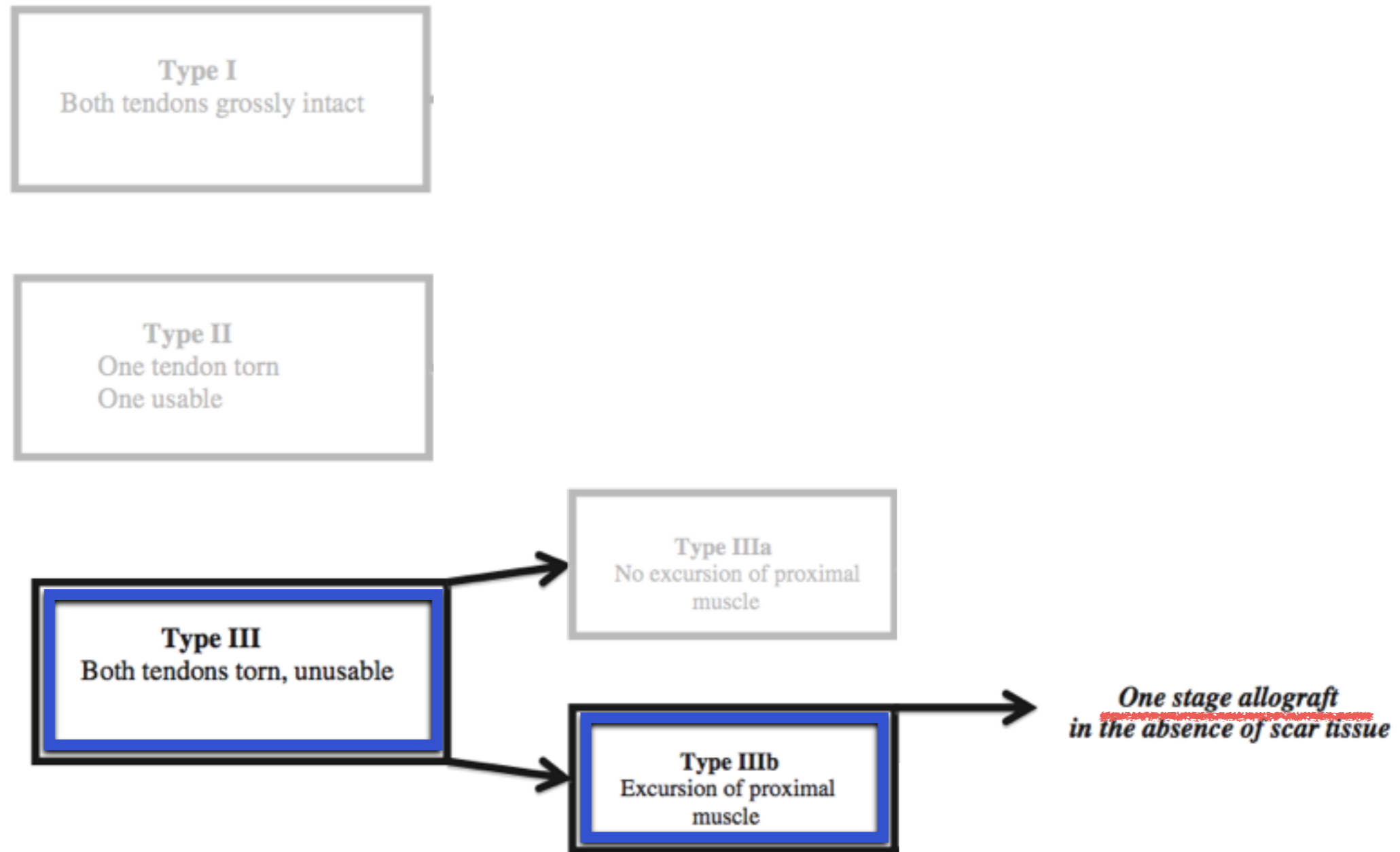


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The management of concomitant tears of the peroneus longus and brevis tendons.

Foot Ankle Int. 2004 Oct;25(10):695-707.

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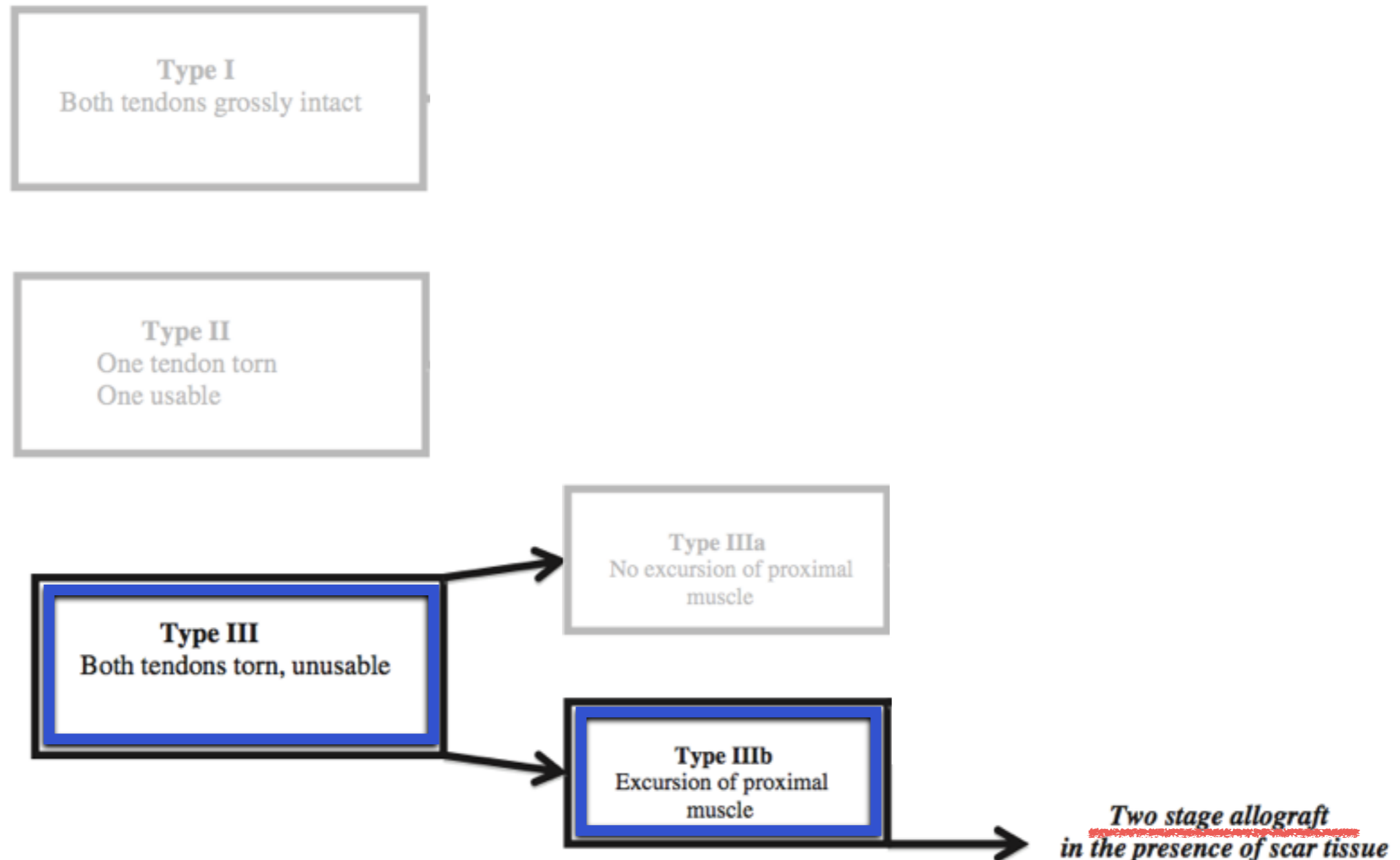


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The management of concomitant tears of the peroneus longus and brevis tendons.

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- lesión de ambos tendones



Redfern D, Myerson M.

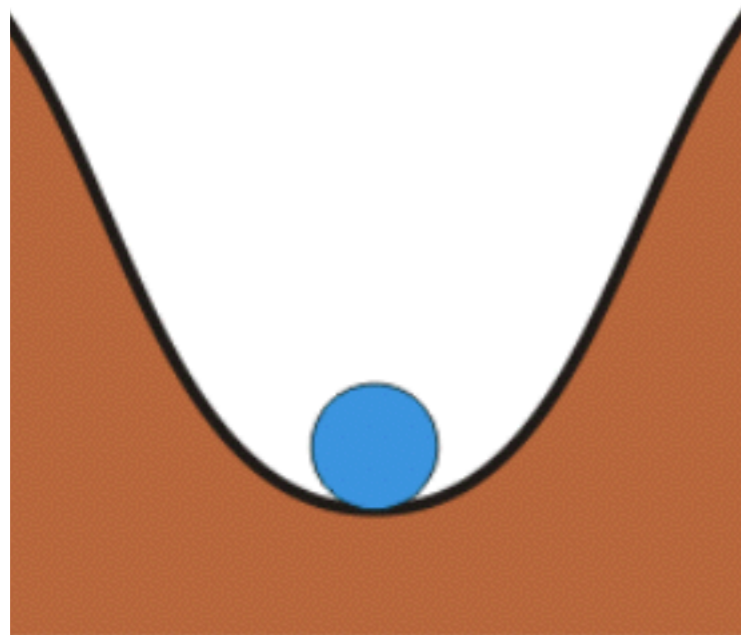
The management of concomitant tears of the peroneus longus and brevis tendons.

Foot Ankle Int. 2004 Oct;25(10):695-707.

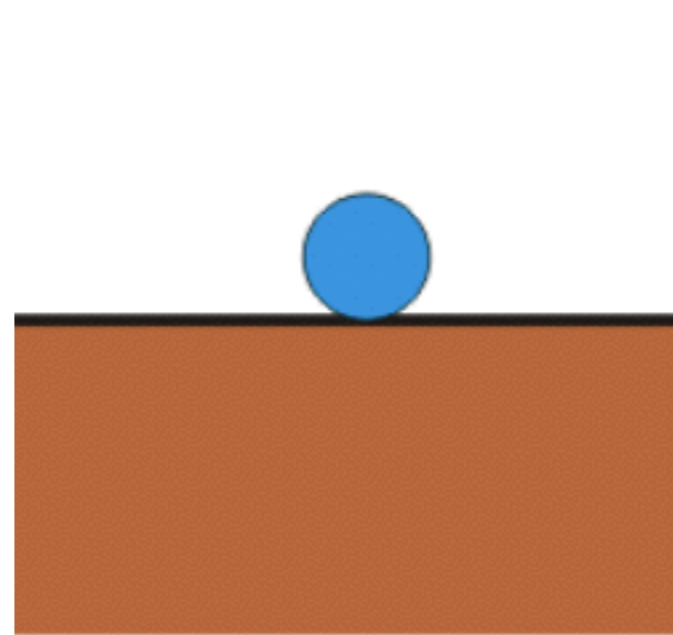


tratamiento:

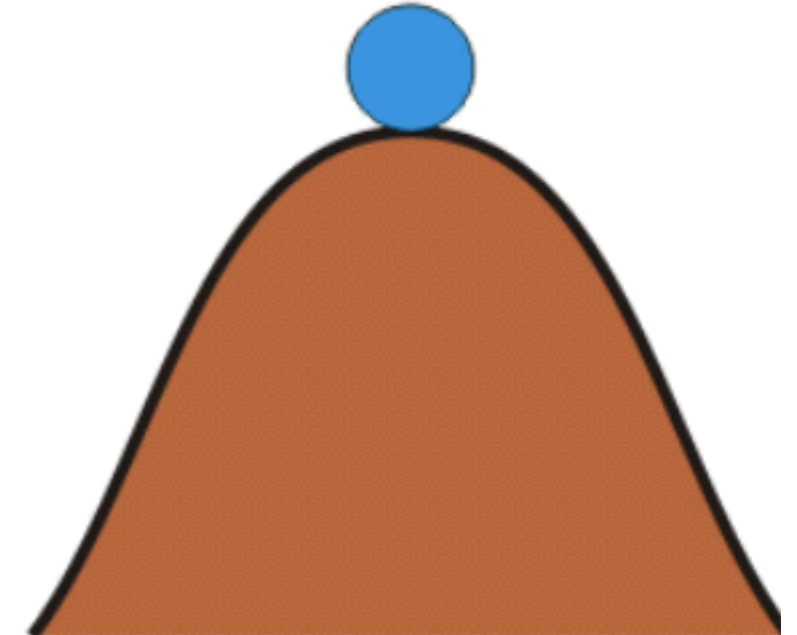
- tendinitis
- ruptura
- inestabilidad



82 %



11 %



7 %

1928

Edwards ME.

The relation of the peroneal tendons to the fibula, calcaneus, and cuboideum.

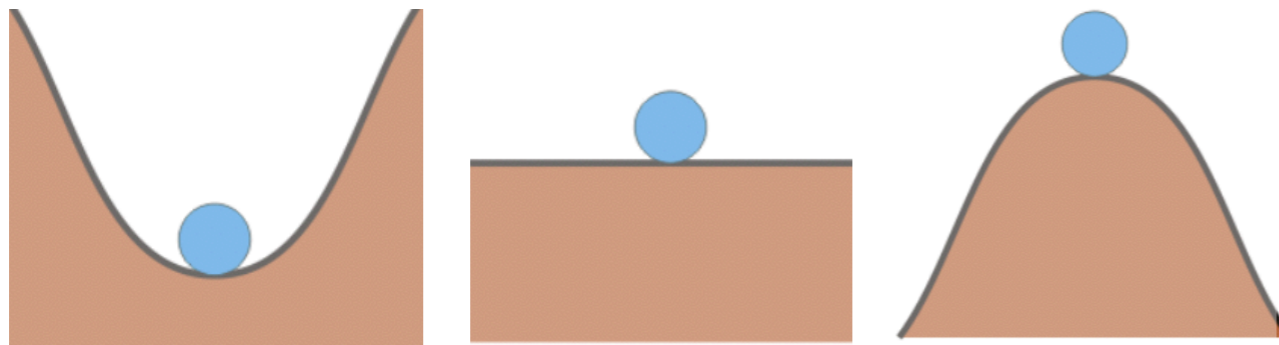
Am J Anat 1928;42:213–53.

2008

Ozbag D, Gumusalam Y, Uzel M, et al.

Morphometrical features of the human malleolar groove.

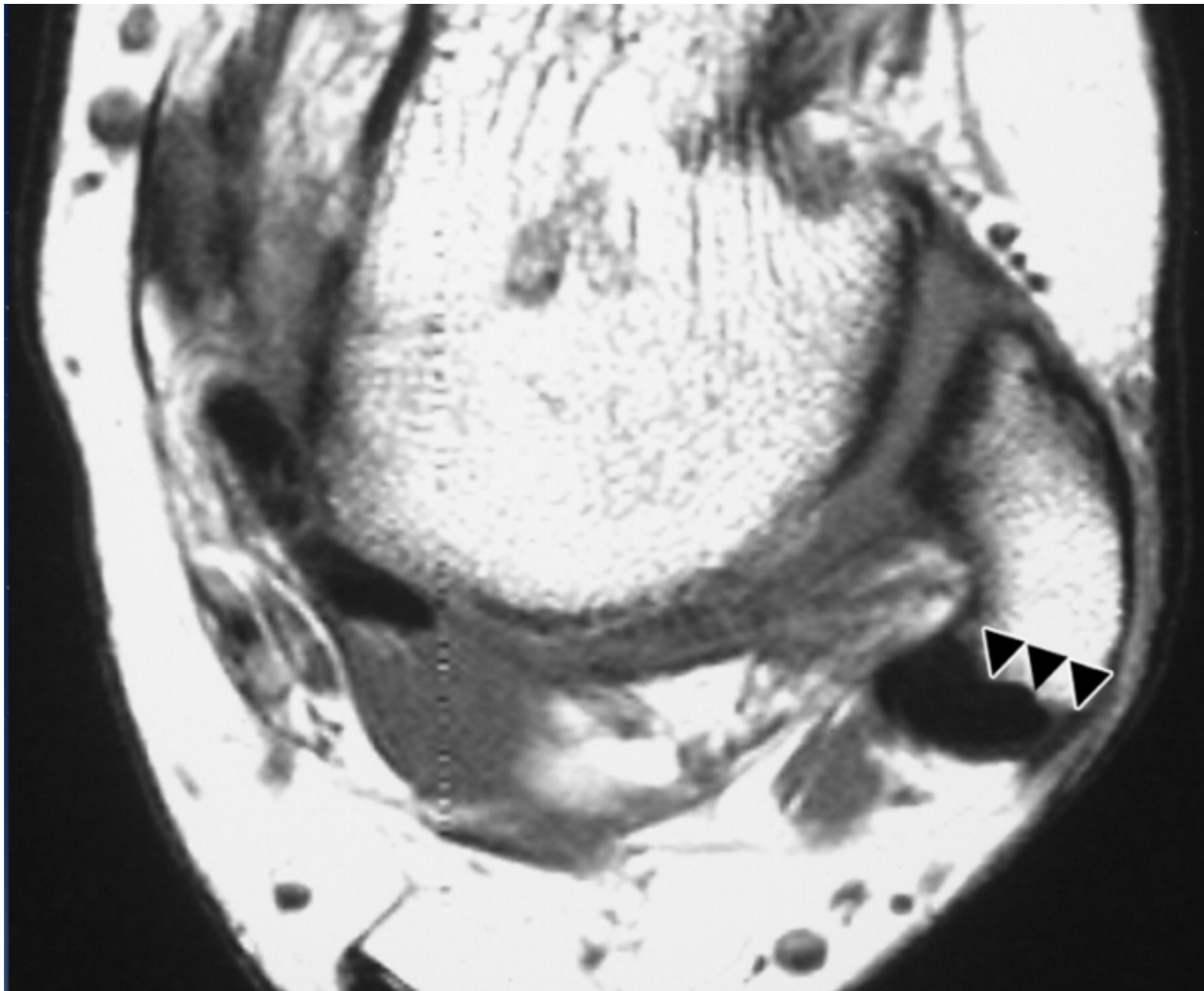
Foot Ankle Int 2008;29:77–81.



WangXT, RosenbergZS, MechlinMB, SchweitzerME.

Normal variants and diseases of the peroneal tendons and superior peroneal retinaculum:
MR imaging features.

Radiographics 25:587–602, 2005.



WangXT, RosenbergZS, MechlinMB, SchweitzerME.

Normal variants and diseases of the peroneal tendons and superior peroneal retinaculum:
MR imaging features.

Radiographics 25:587–602, 2005.

There was no significant difference found between the retromalleolar groove morphology among the patients with peroneal tendon injury and those without.



AdachiN, FukuharaK, KobayashiT, et al.

Morphologic variations of the fibular malleolar groove with recurrent dislocation of the peroneal tendons.

Foot Ankle Int 2009;30:540-4.

Peroneal groove shape

Flat	39 (36.11)
Convex	48 (44.44)
Concave	4 (3.70)
Undulating	17 (15.74)

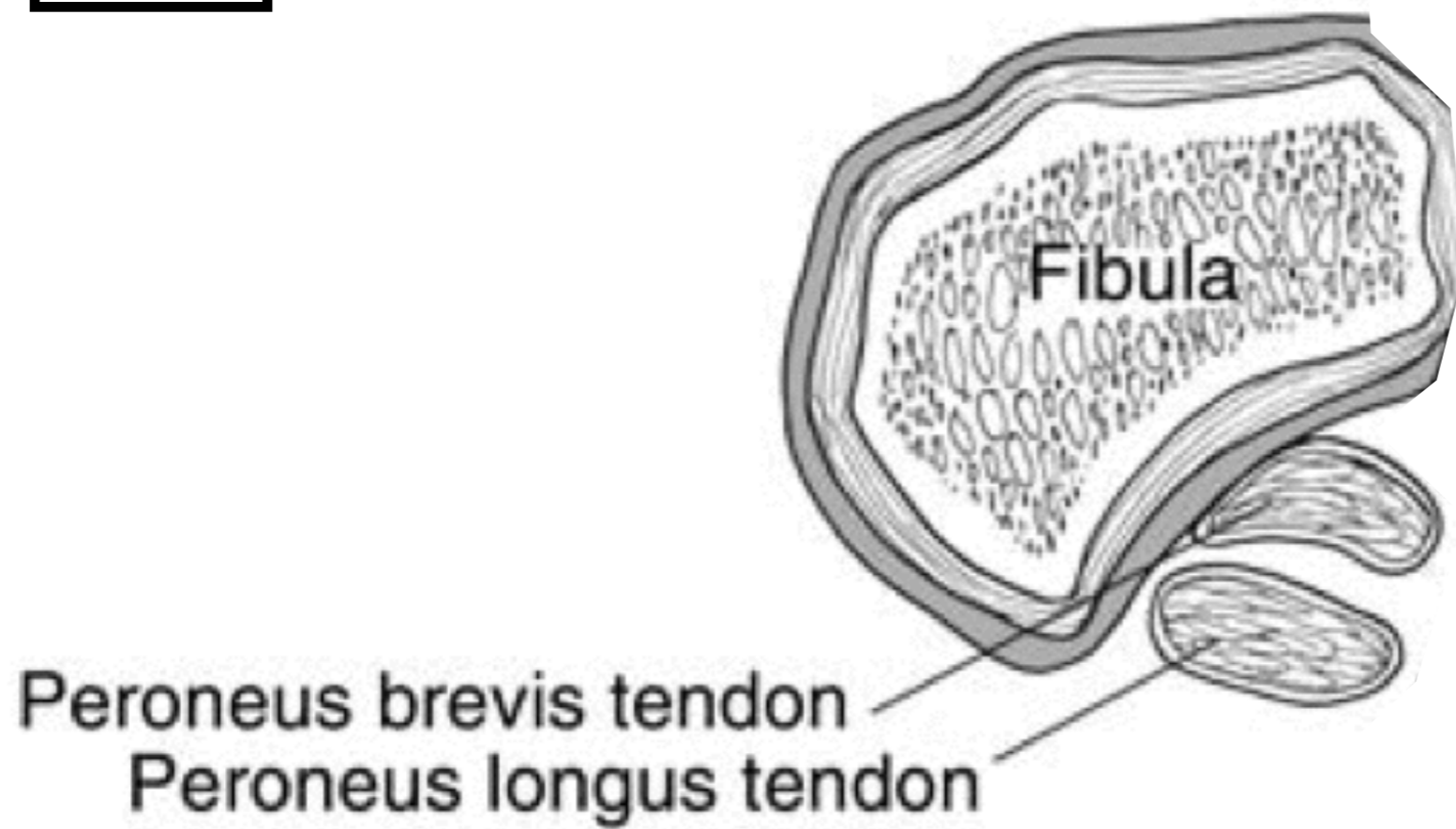
“an undulating peroneal groove might predispose the peroneal brevis to injury”

Galli M, Protzman N, Mandelker E et al.

An examination of anatomic variants and incidental peroneal tendon pathologic features: a comprehensive MRI review of asymptomatic lateral ankles.

J Foot Ankle Surg. 2015 Mar-Apr;54(2):164-72

1976



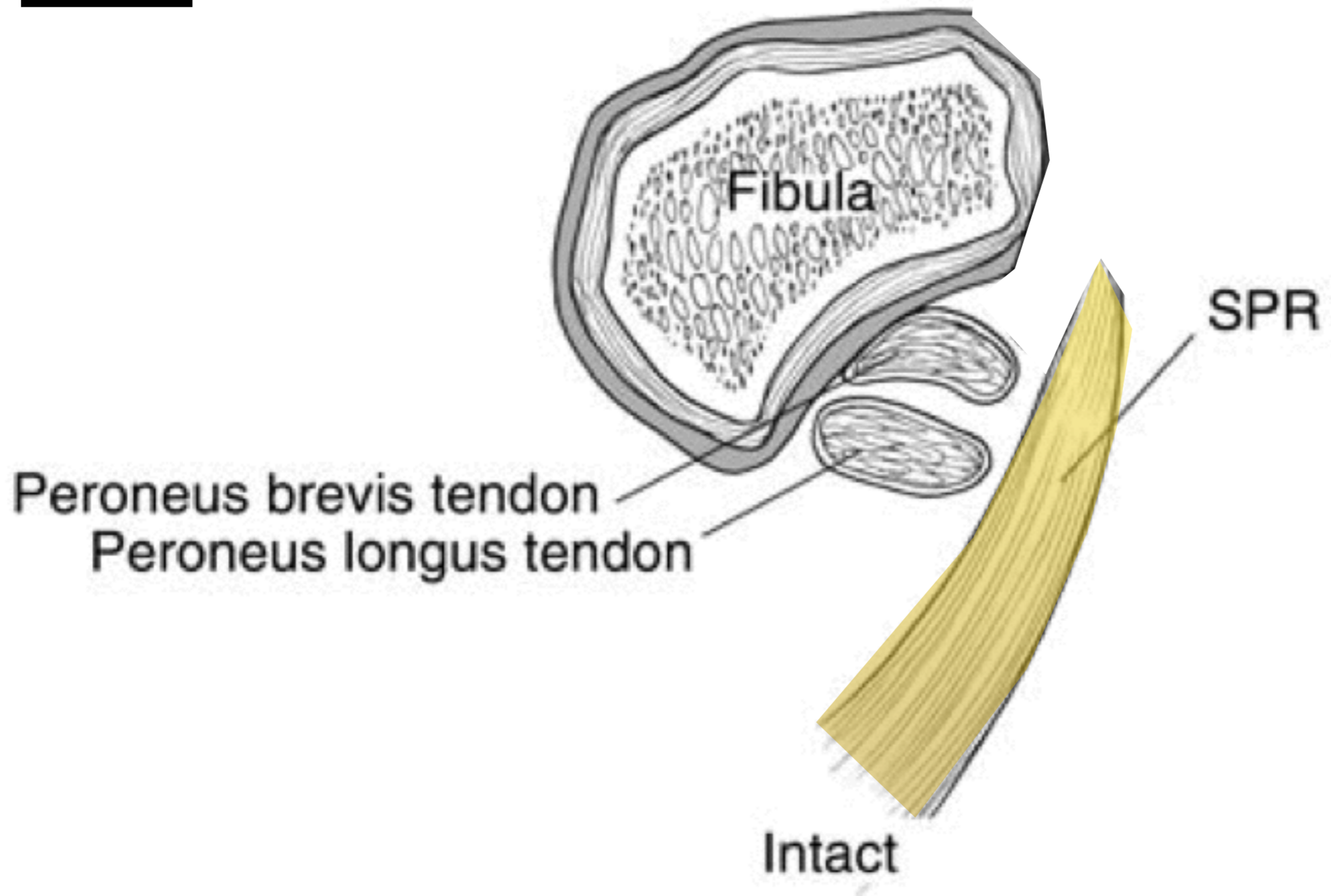
Intact

Eckert WR, Davis EA Jr

Acute rupture of the peroneal retinaculum.

J Bone Joint Surg Am 1976;58:670-672.

1976

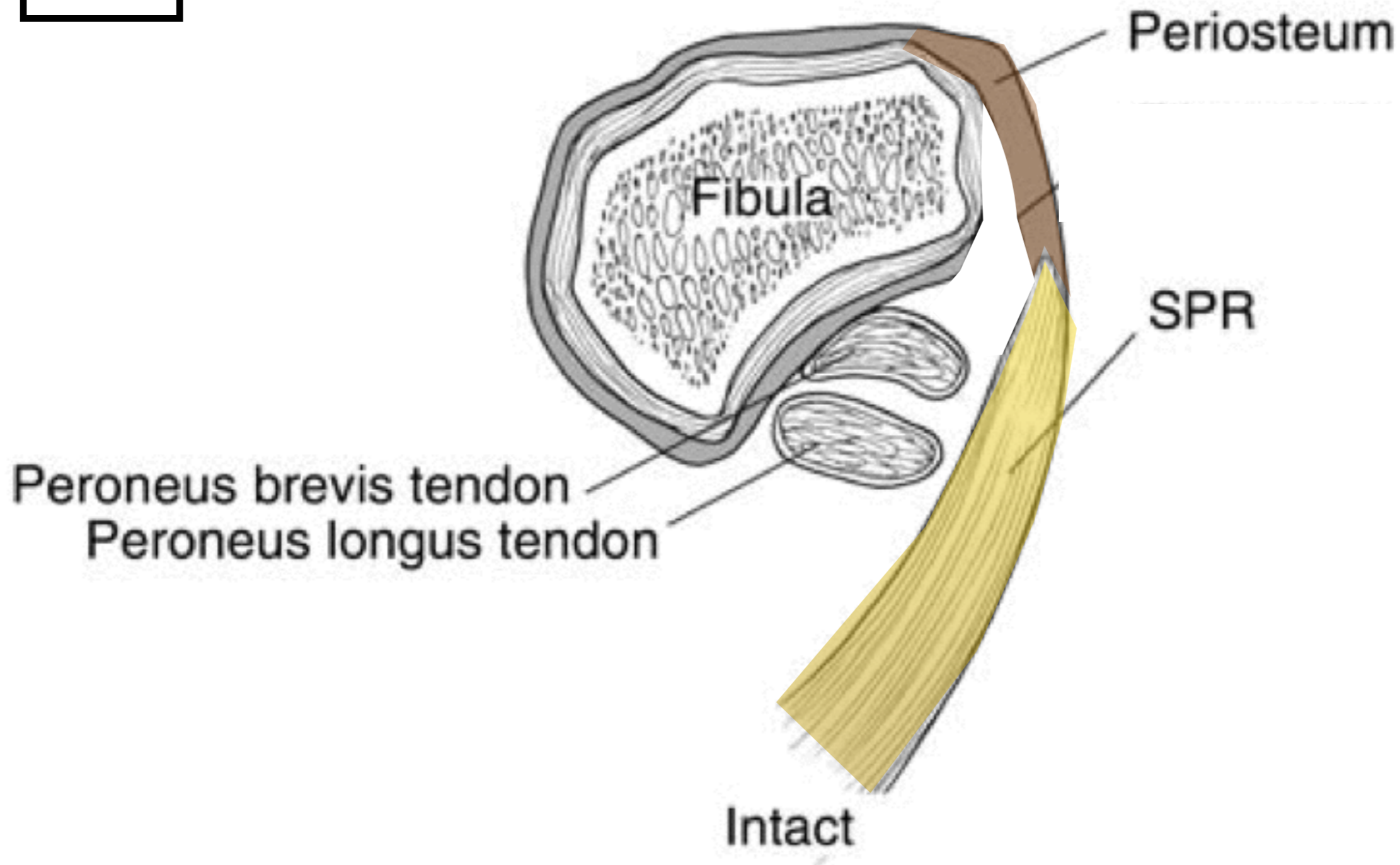


Eckert WR, Davis EA Jr

Acute rupture of the peroneal retinaculum.

J Bone Joint Surg Am 1976;58:670-672.

1976

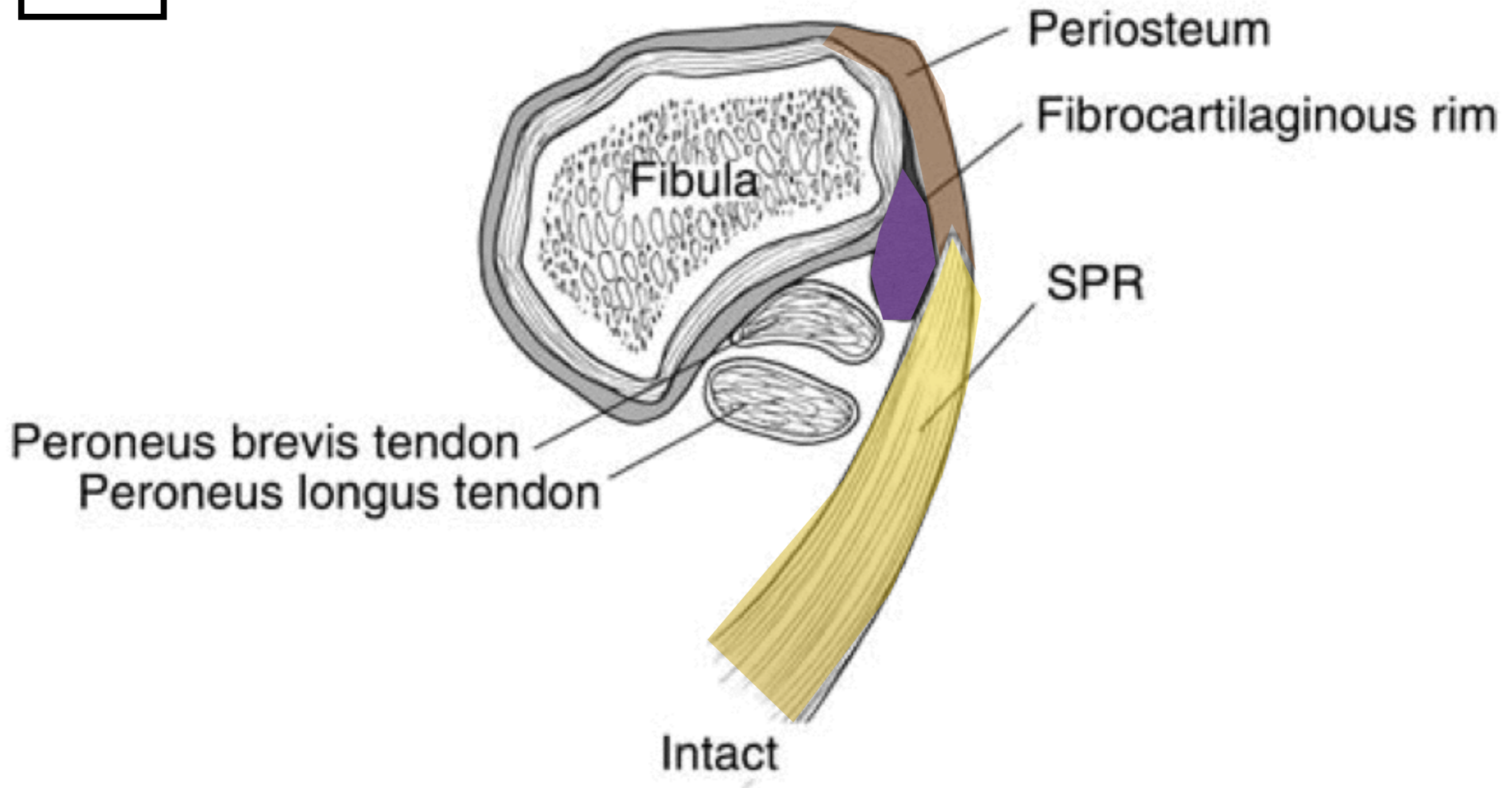


Eckert WR, Davis EA Jr

Acute rupture of the peroneal retinaculum.

J Bone Joint Surg Am 1976;58:670-672.

1976



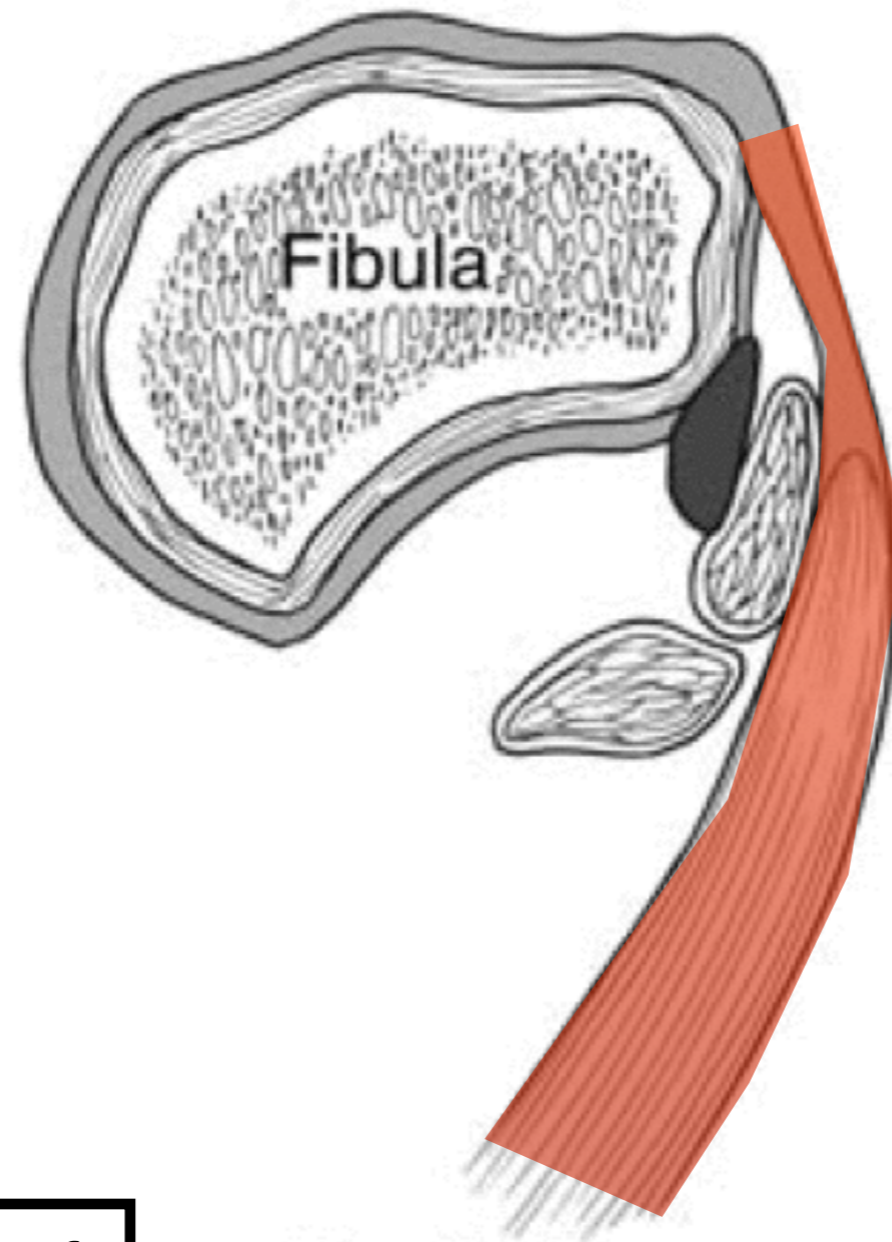
Eckert WR, Davis EA Jr

Acute rupture of the peroneal retinaculum.

J Bone Joint Surg Am 1976;58:670-672.

51%

elevación del RPS y periostio



+ fr

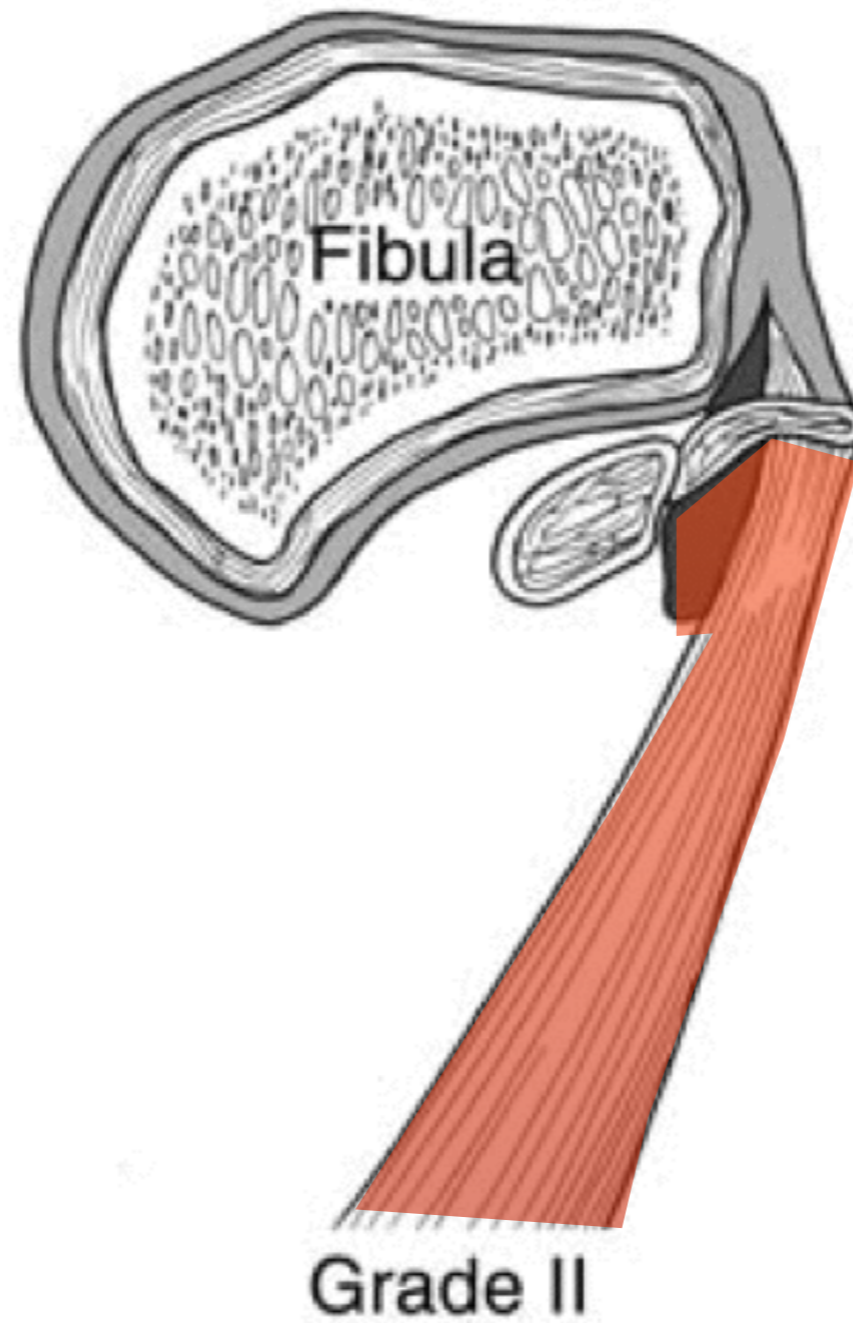
Grade I

Eckert WR, Davis EA Jr

Acute rupture of the peroneal retinaculum.

J Bone Joint Surg Am 1976;58:670-672.

33% elevación del RPS y del reborde fibroso



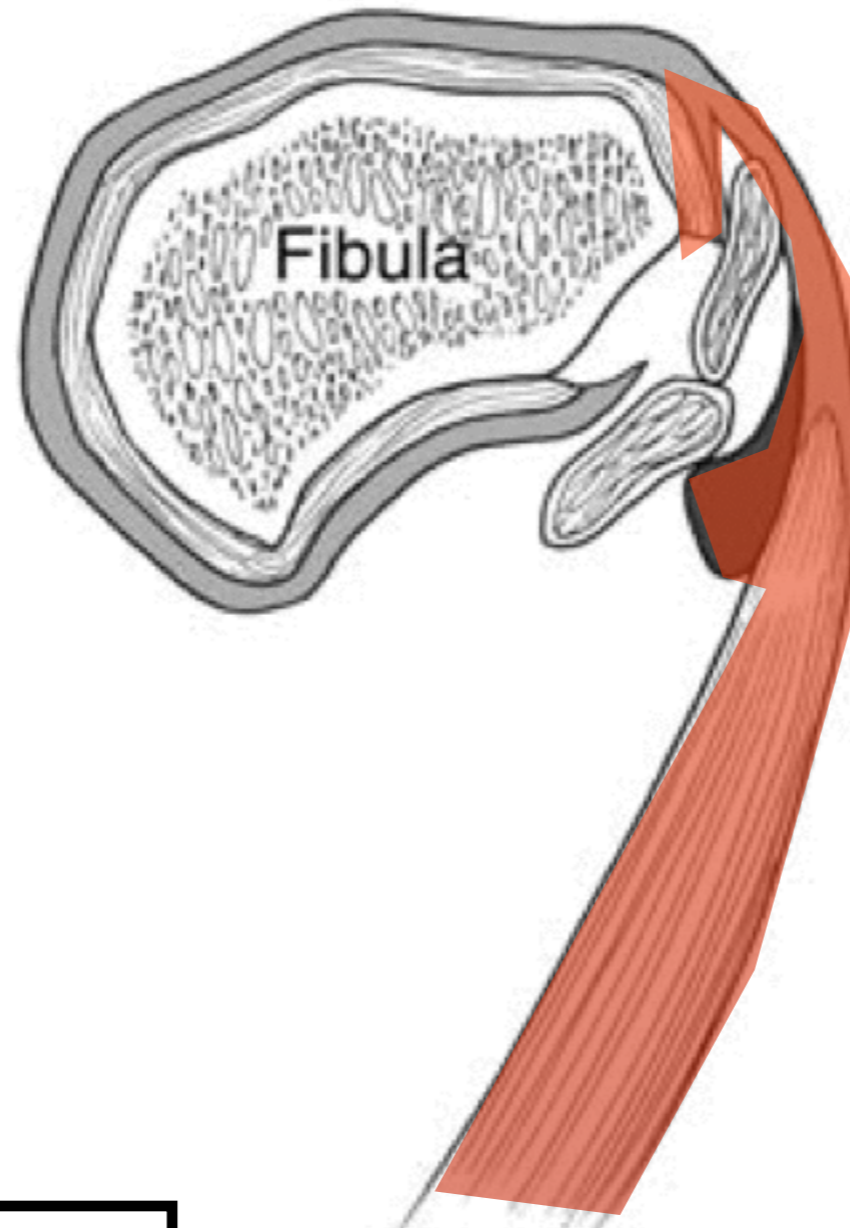
Eckert WR, Davis EA Jr

Acute rupture of the peroneal retinaculum.

J Bone Joint Surg Am 1976;58:670-672.

16%

fina avulsi3n 3sea m3s



2^a + fr

Grade III

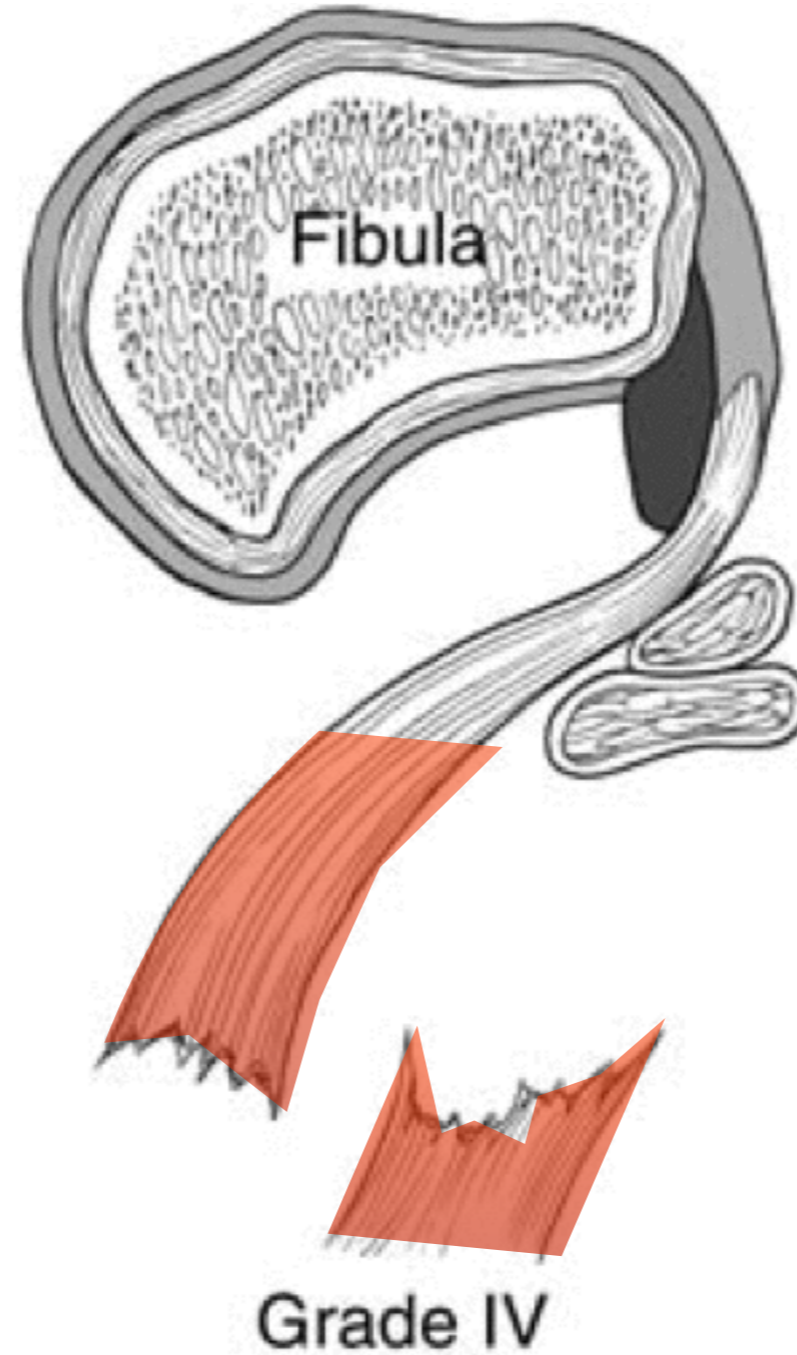
Eckert WR, Davis EA Jr

Acute rupture of the peroneal retinaculum.

J Bone Joint Surg Am 1976;58:670-672.

1987

avulsión de retenciones posteriores

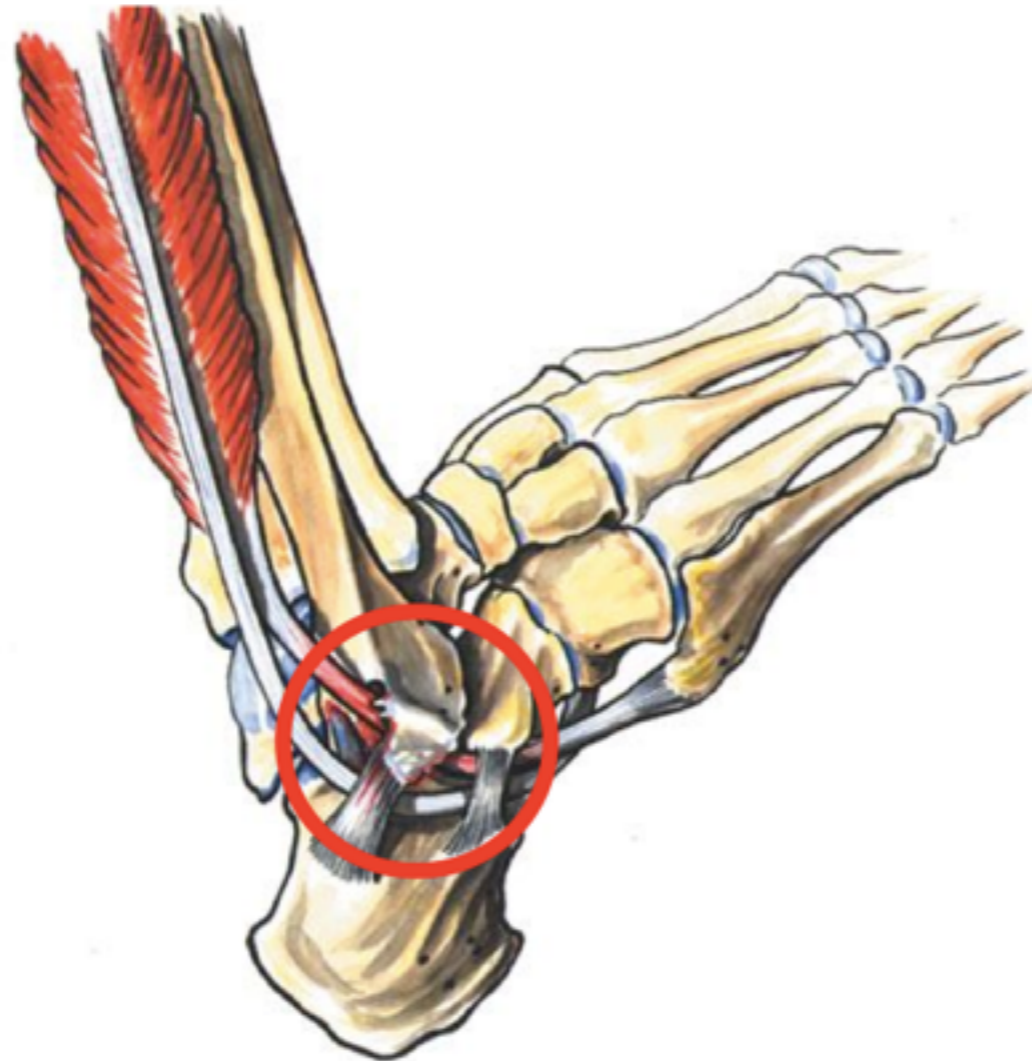


Oden RR

Tendon injuries about the ankle resulting from skiing.

Clin Orthop Relat Res 1987;216:63-69.

contracción brusca
en posición de dorsiflexión





tratamiento conservador:
malos resultados



tratamiento quirúrgico



tratamiento quirúrgico

- **reforzar** el retináculo superior de los peroneos (SPR)

- **aumentar** el continente

tratamiento quirúrgico

- **reforzar** el retináculo superior de los peroneos (RSP)

- suturar
- reforzar

- **aumentar** el continente

tratamiento quirúrgico

- **reforzar** el retináculo superior de los peroneos (RSP)

- suturar
- reforzar

- **aumentar** el continente de los tendones peroneos

- excavar
- amurallar

tratamiento quirúrgico

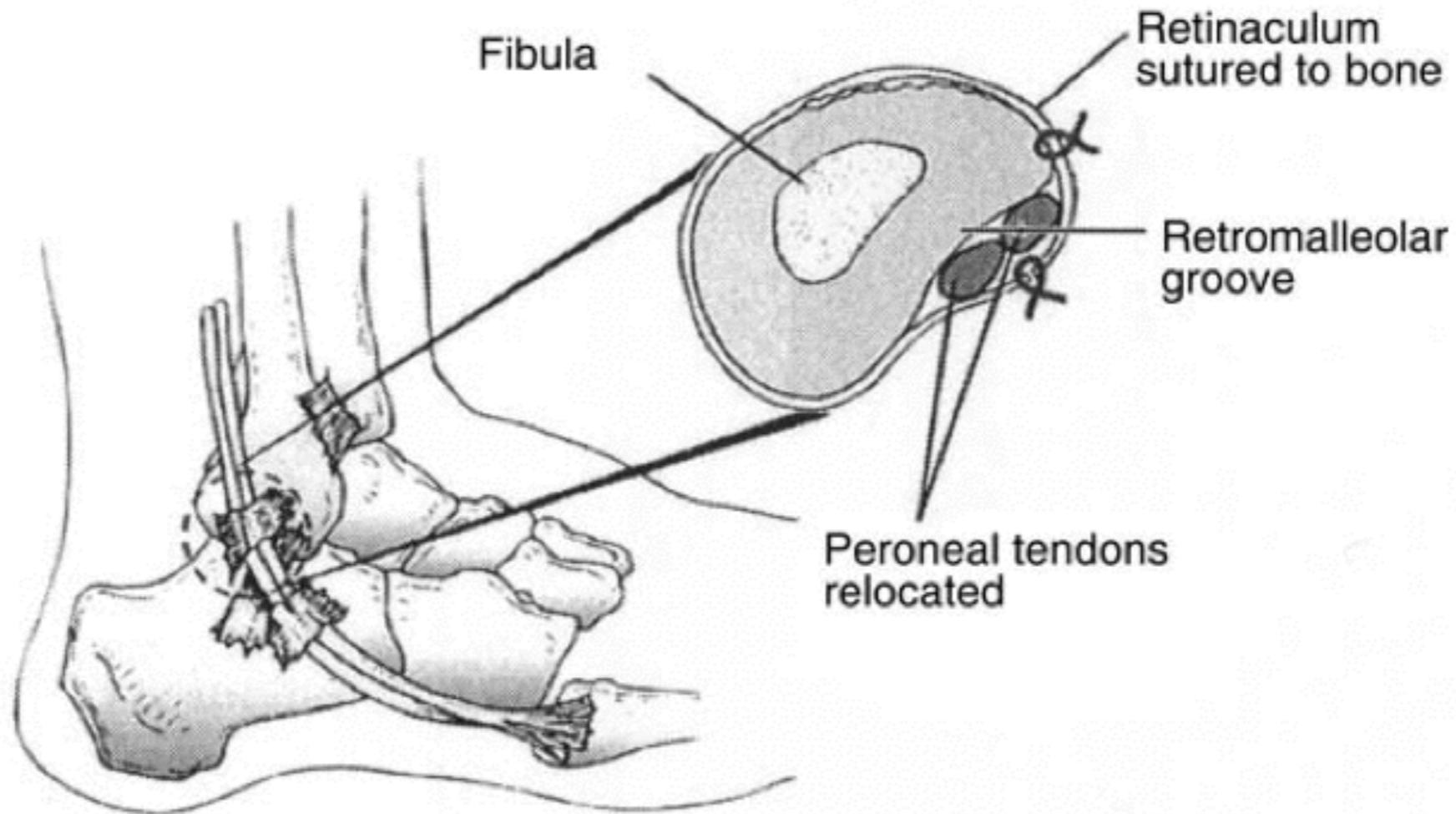
- **reforzar** el retináculo superior de los peroneos (RSP)

- suturar
- reforzar

- **aumentar** el continente de los tendones peroneos

- excavar
- amurallar

lesión aguda: reparación directa

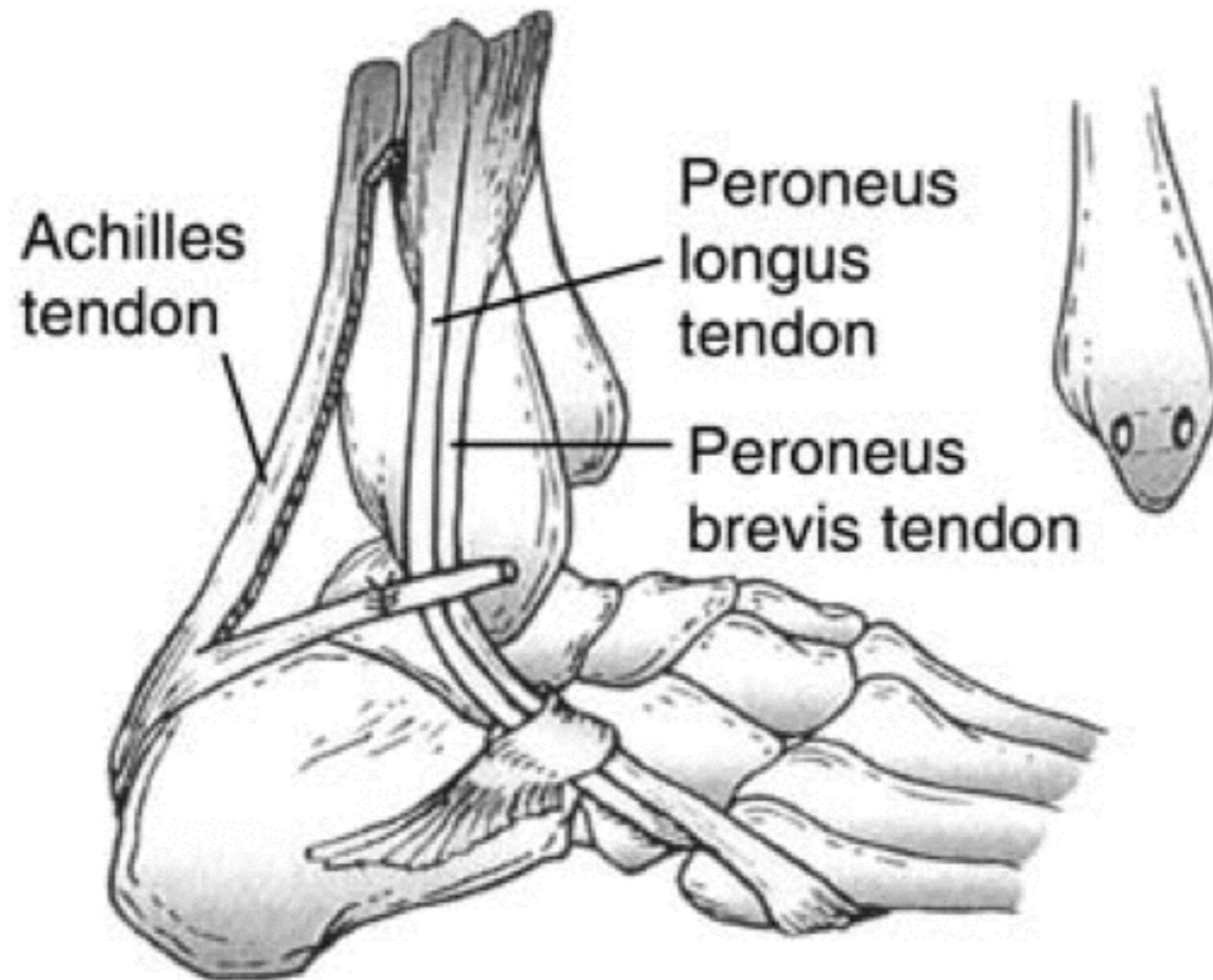


Das De S, Balasubramaniam P

A repair operation for recurrent dislocation of peroneal tendons.

J Bone Joint Surg Br 1985;67:585-587.

lesión crónica: reconstrucción RSP

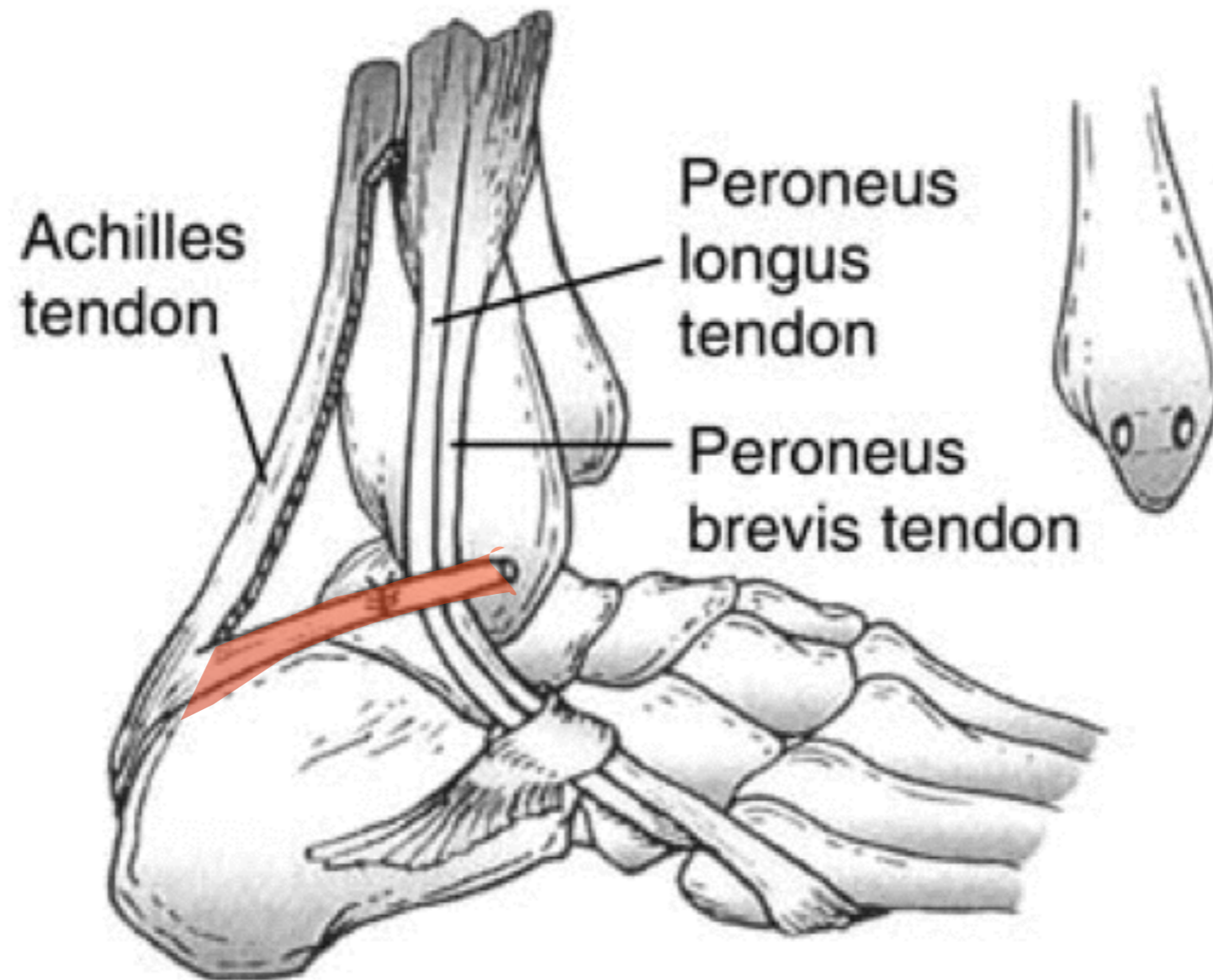


Escalas F, Figueras JM, Merino JA

Dislocation of the peronea tendons: Long-term results of surgical treatment.

J Bone Joint Surg Am 1980;62:451-453

lesión crónica: reconstrucción RSP

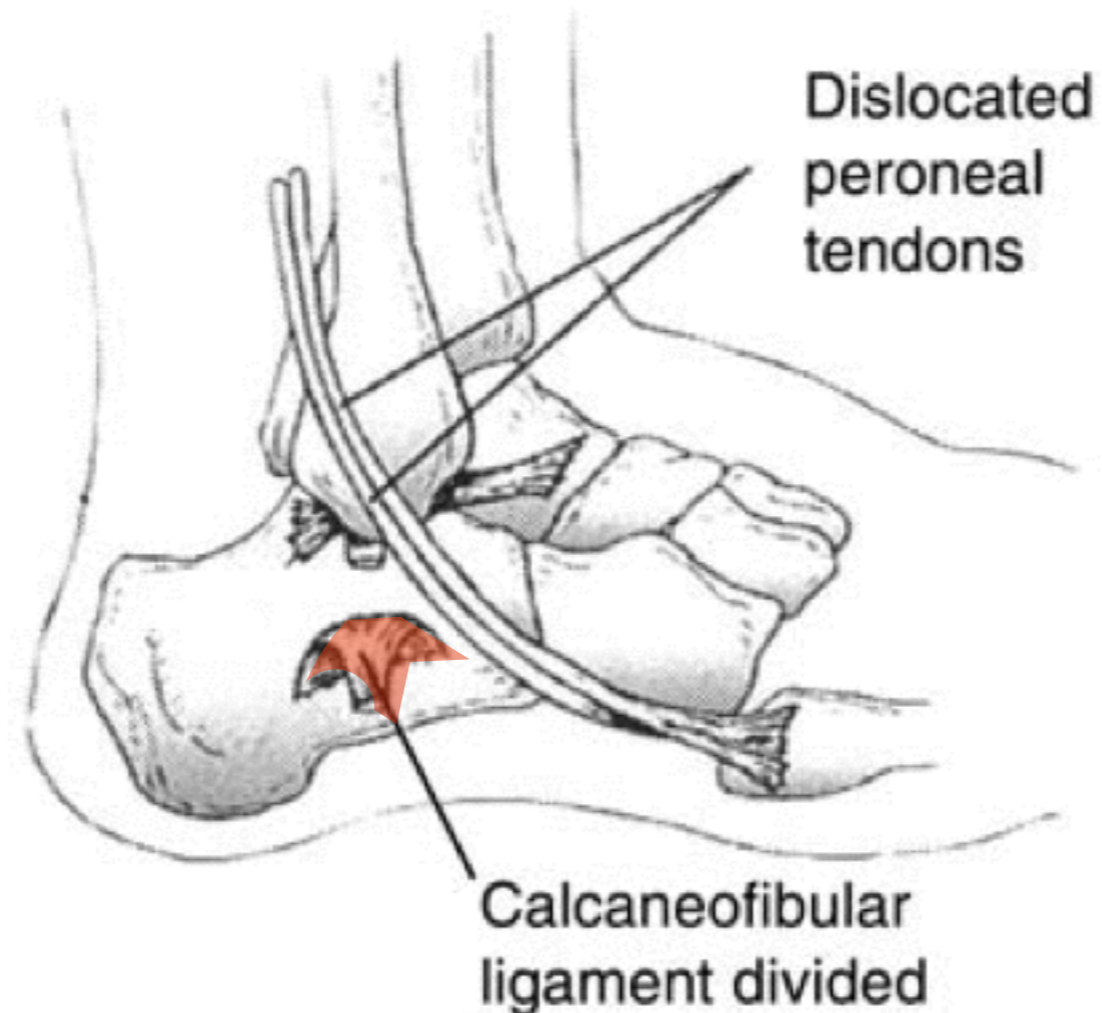


Escalas F, Figueras JM, Merino JA

Dislocation of the peronea tendons: Long-term results of surgical treatment.

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lesión crónica: reconstrucción RSP

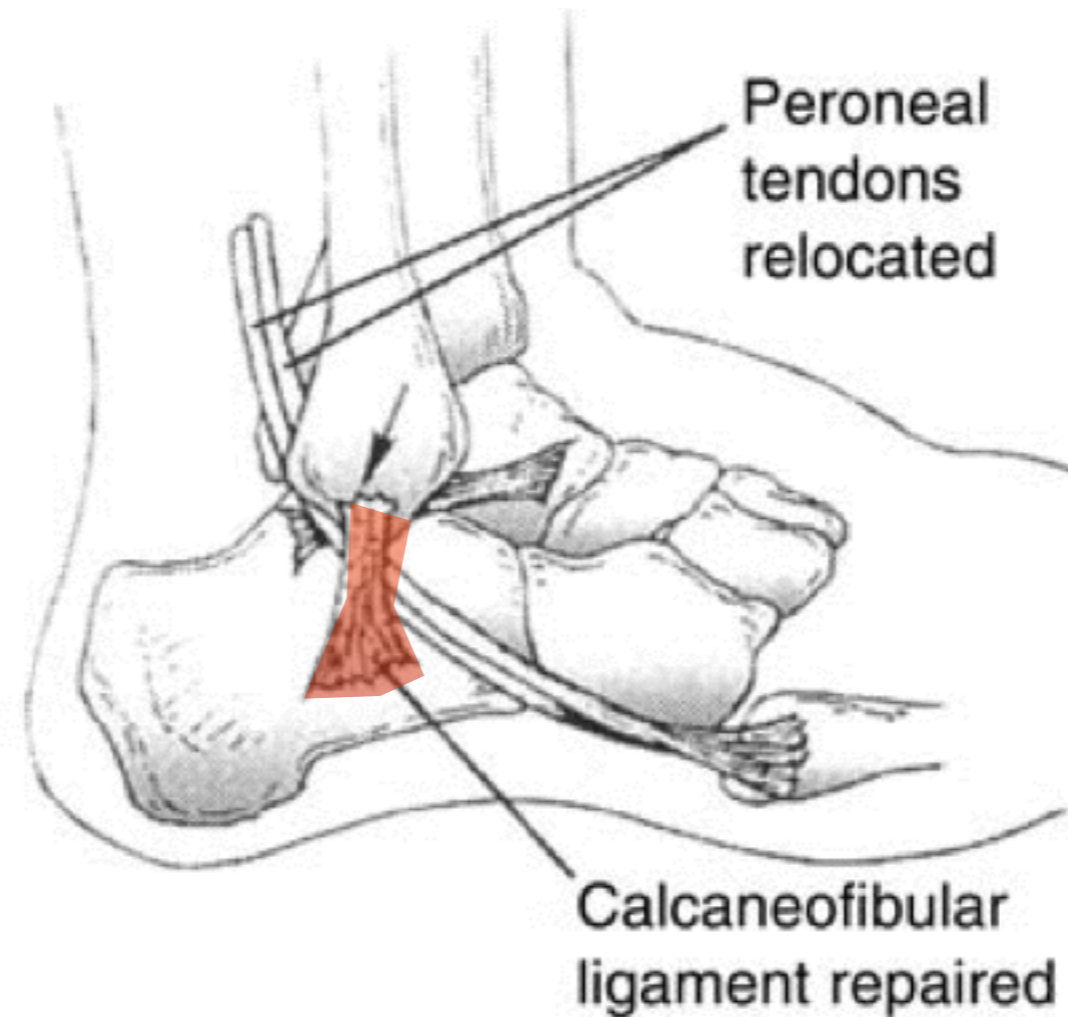


Sarmiento A., Wolf M.

Subluxation of peroneal tendons. Case treated by rerouting tendons under calcaneofibular ligament.

J. Bone Joint Surg. Am. (1975) 57: 115–116.

lesión crónica: reconstrucción RSP



Sarmiento A., Wolf M.

Subluxation of peroneal tendons. Case treated by rerouting tendons under calcaneofibular ligament.

J. Bone Joint Surg. Am. (1975) 57: 115–116.

tratamiento quirúrgico

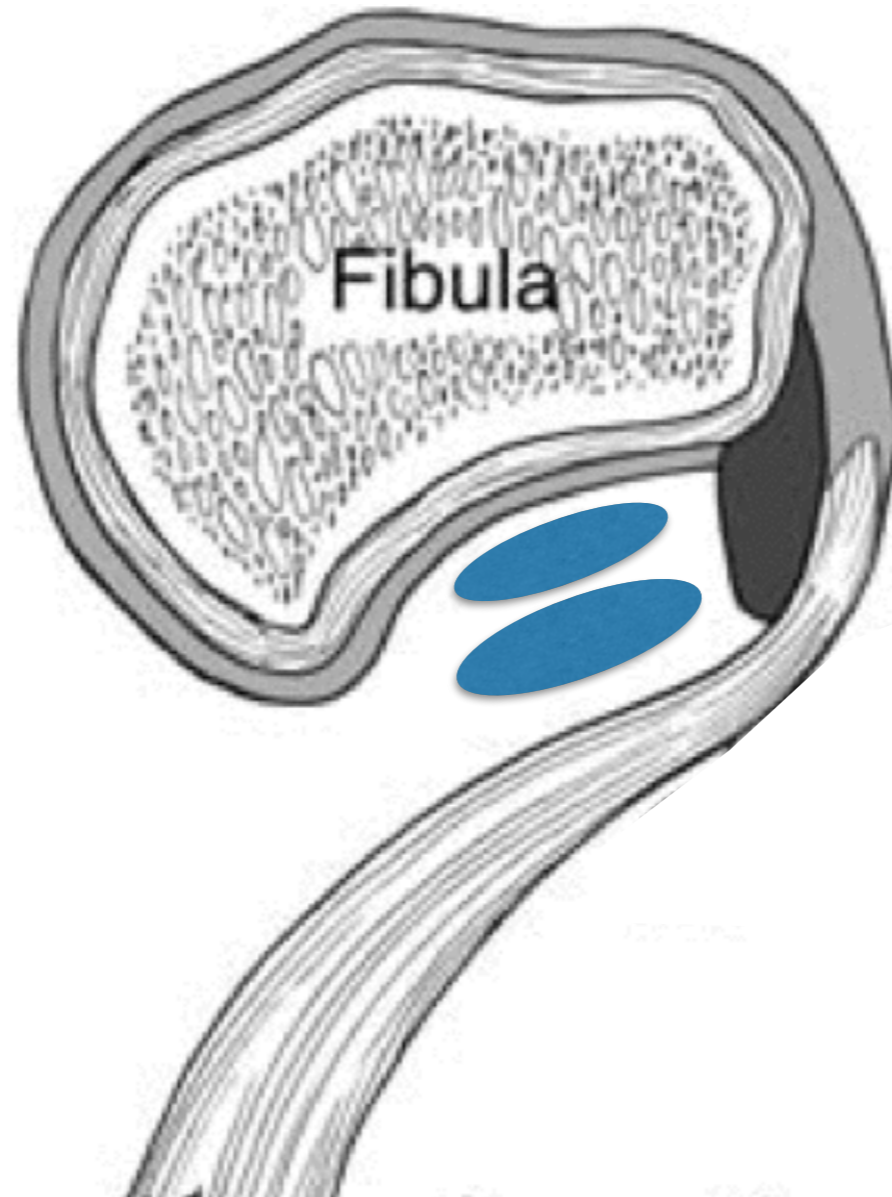
- **reforzar** el retináculo superior de los peroneos (SPR)

- suturar
- reforzar

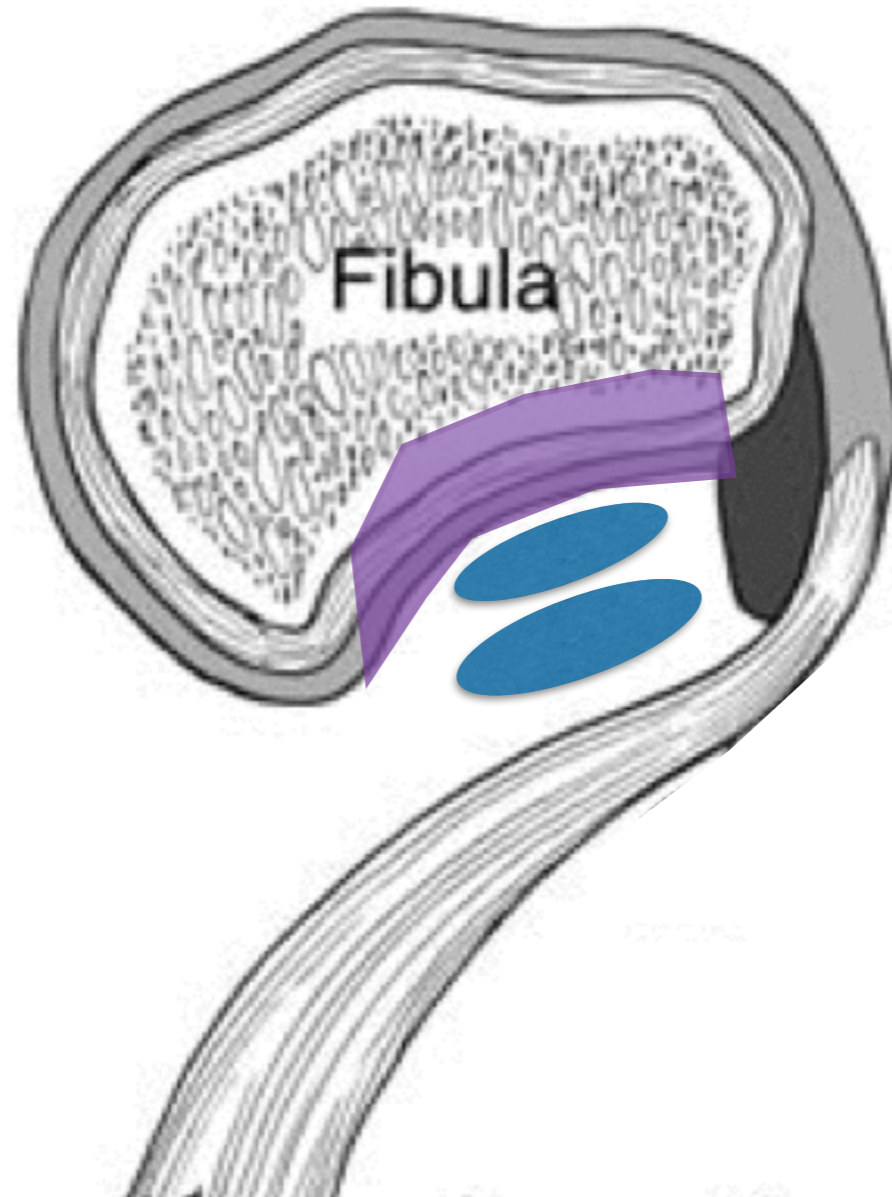
- **aumentar** el continente de los tendones peroneos

- excavar
- amurallar

excabar



excabar

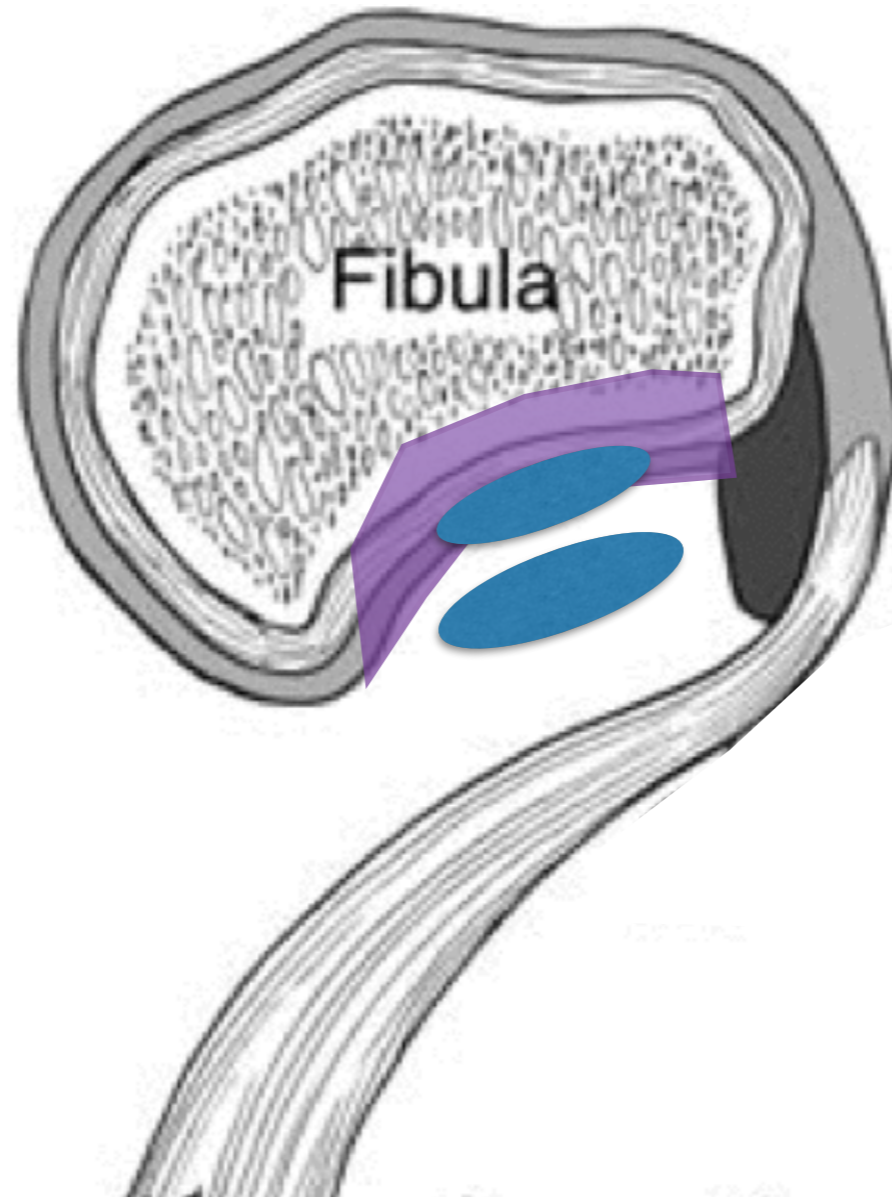


Zoellner G, Clancy W Jr.

Recurrent dislocation of the peroneal tendon.

J Bone Joint Surg Am 1979;61:292-294.

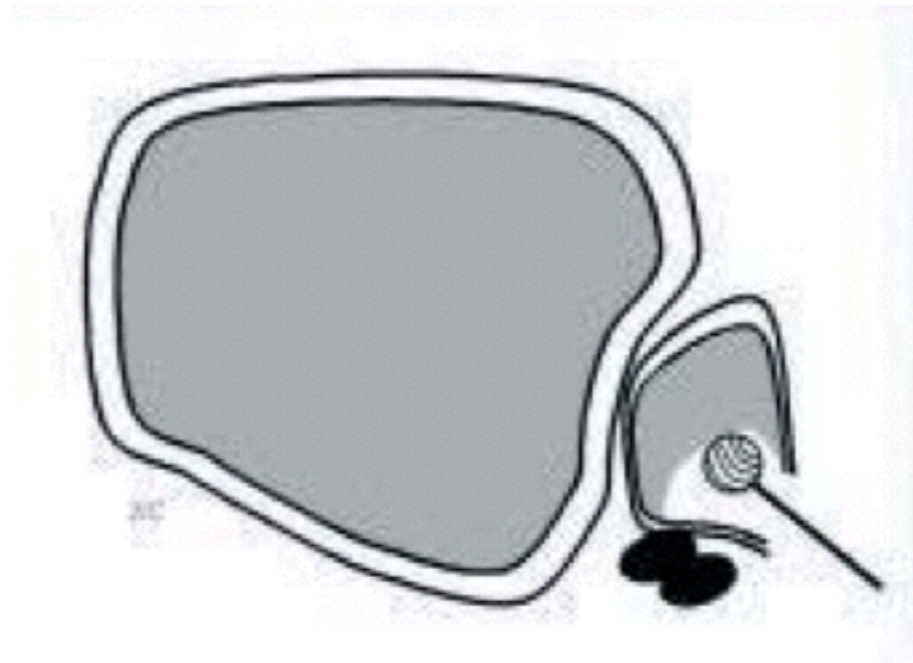
excabar



Zoellner G, Clancy W Jr.

Recurrent dislocation of the peroneal tendon.

J Bone Joint Surg Am 1979;61:292-294.



Porter D., McCarroll J., Knapp E., Torma J.

Peroneal Tendon Subluxation in Athletes: Fibular Groove Deepening and Retinacular Reconstruction.

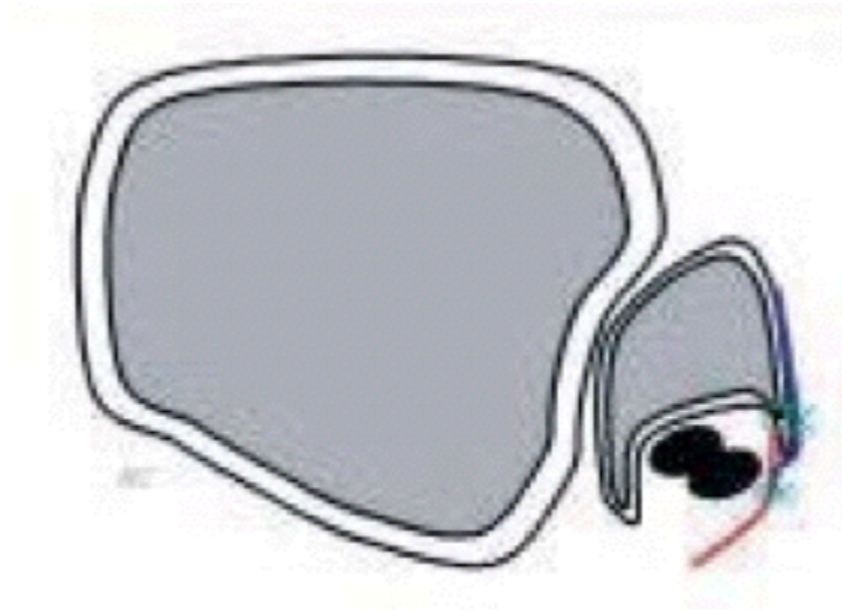
Foot Ankle Int. (Jun) 26(6): 436–441.



Porter D., McCarroll J., Knapp E., Torma J.

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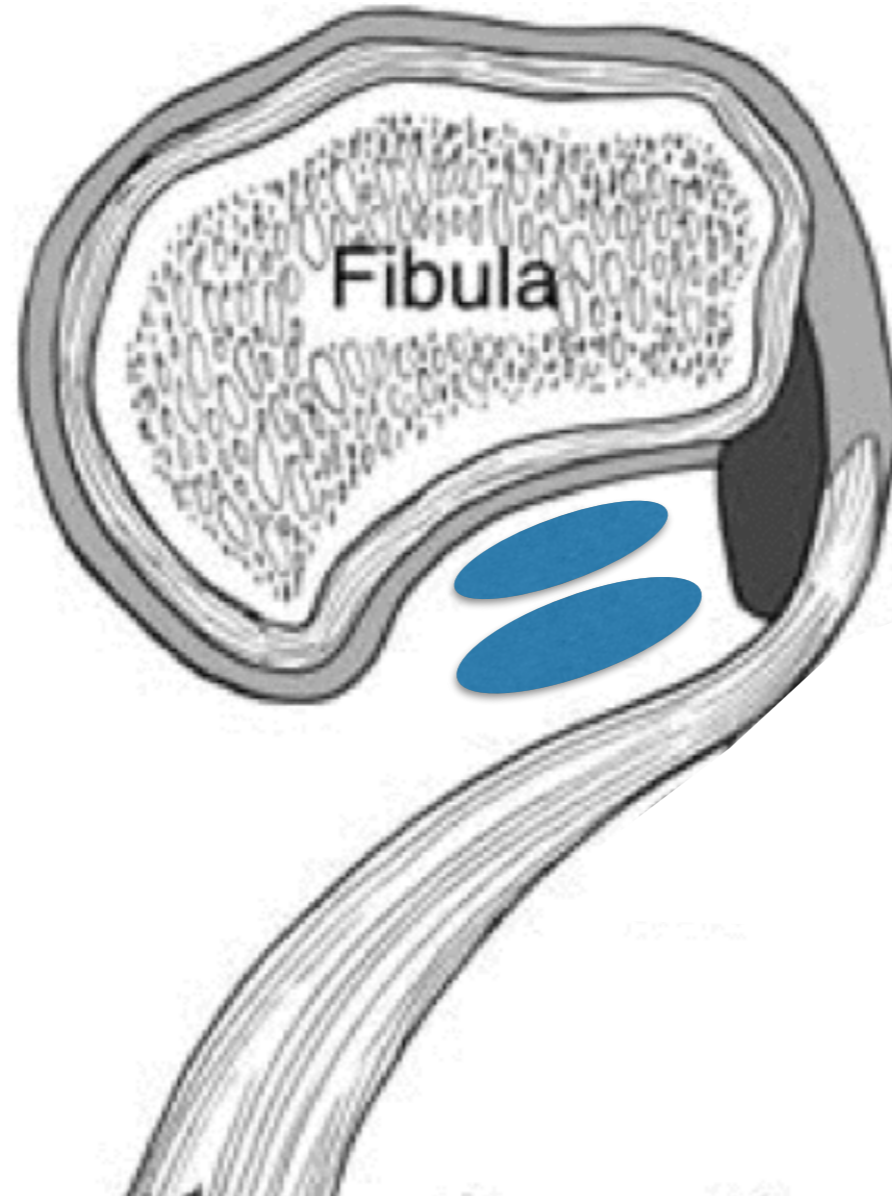


Porter D., McCarroll J., Knapp E., Torma J.

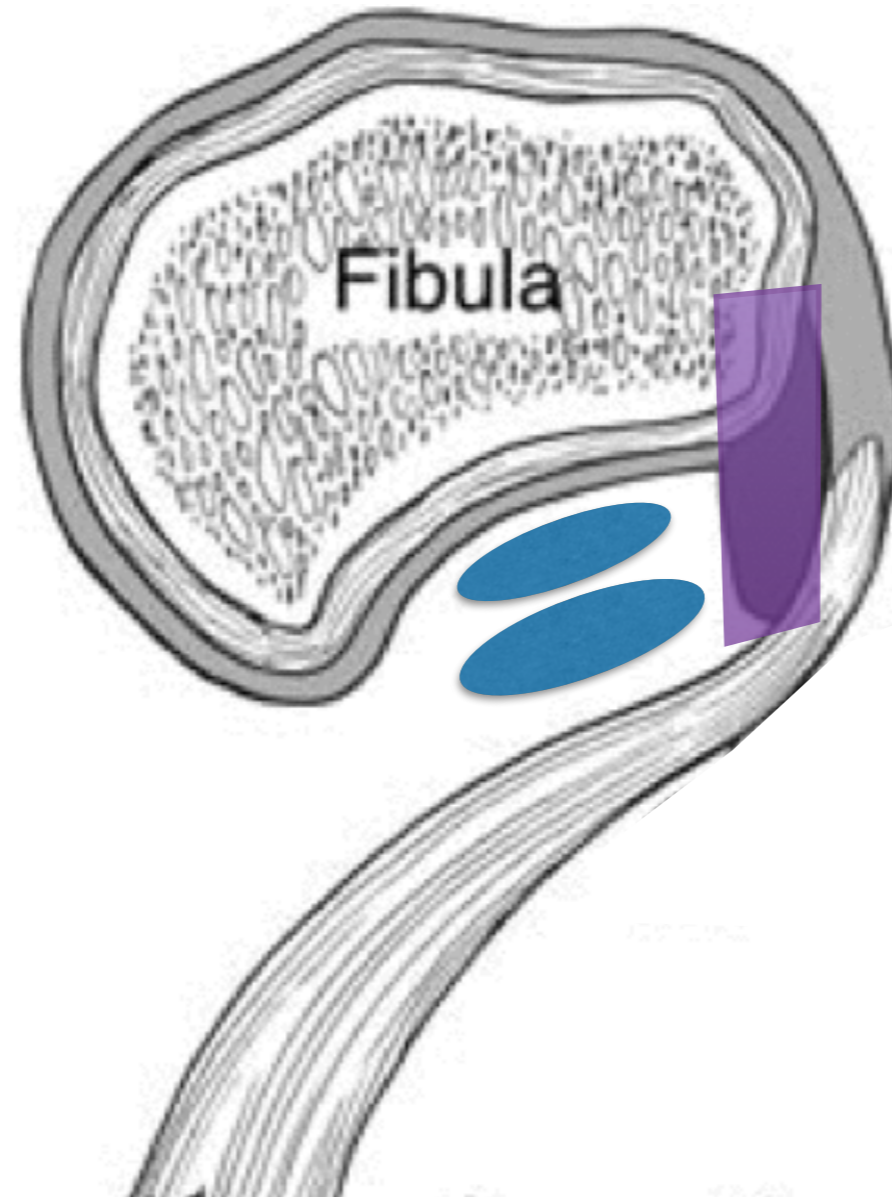
Peroneal Tendon Subluxation in Athletes: Fibular Groove Deepening and Retinacular Reconstruction.

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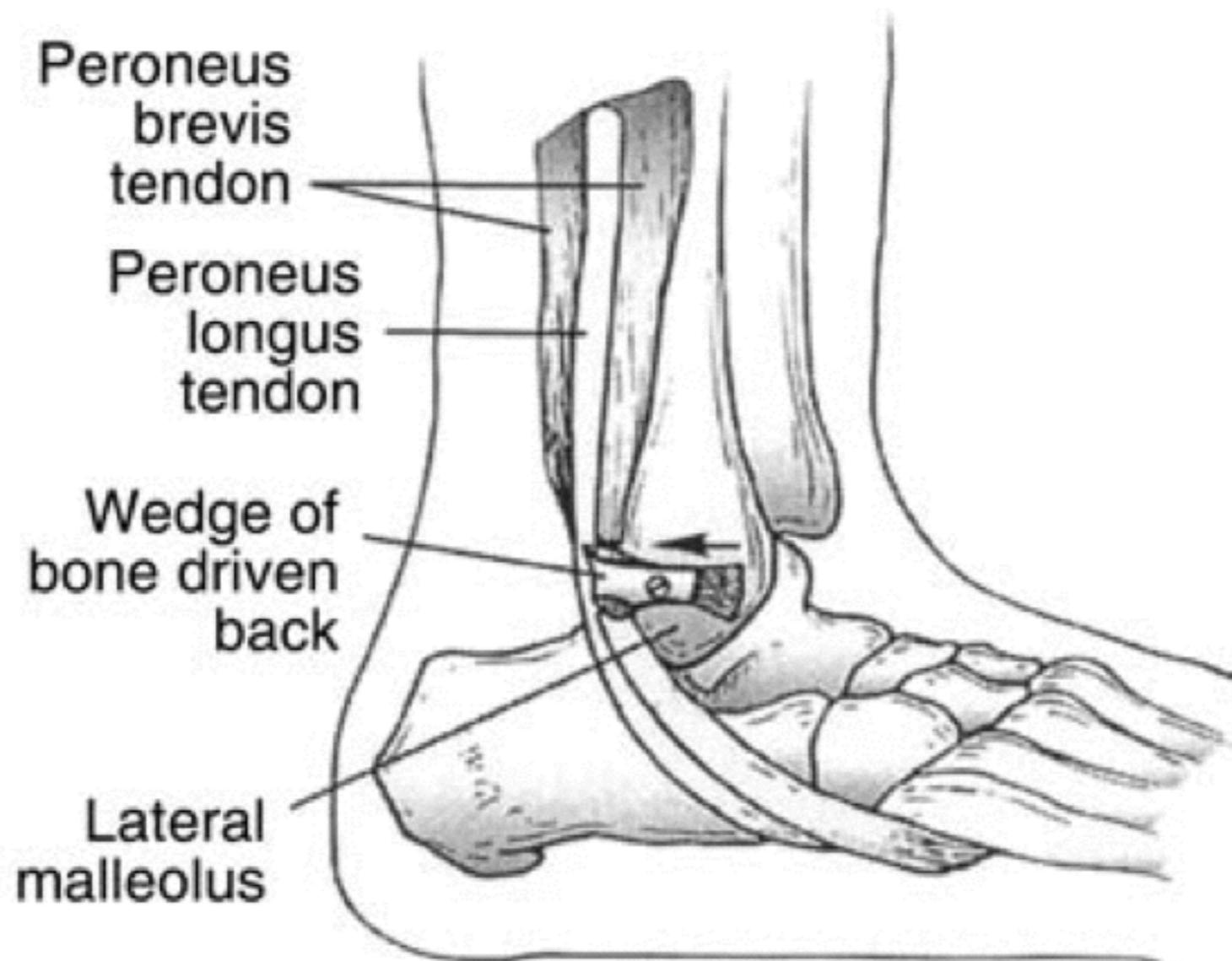
amurallar



Ogawa BK, Thordarson DB

Current concepts review: Peroneal tendon subluxation and dislocation.

Foot Ankle Int 2007;28:1034-1040.



Ogawa BK, Thordarson DB

Current concepts review: Peroneal tendon subluxation and dislocation.

Foot Ankle Int 2007;28:1034-1040.

A close-up photograph of a glass of beer with a thick, light-colored head of foam. The glass is positioned in the center. To the right, a red Coca-Cola can is partially visible, with the word 'Coca-Cola' in white script. In the background on the left, there is a white object with colorful polka dots and the letters 'Z', 'H', and 'T' repeated. The entire scene is set on a light-colored wooden surface.

Kali-Motxo



reforzar el RSP

+

escavar el canal

Zoellner G, Clancy W Jr

Recurrent dislocation of the peroneal tendon.

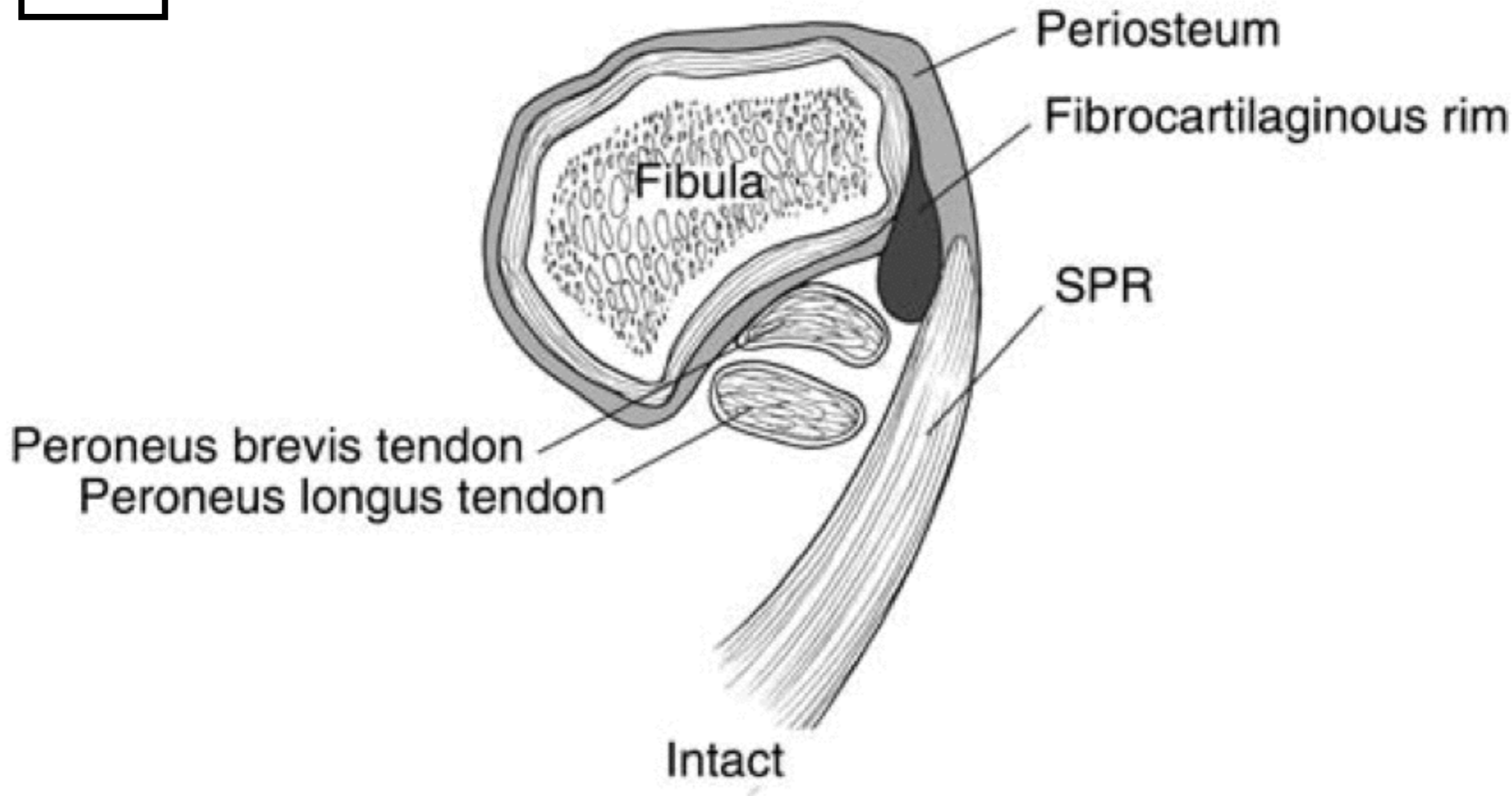
J Bone Joint Surg Am 1979;61:292-294.

gracias por su atención
eskerrik asko zure arretagatik



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1976

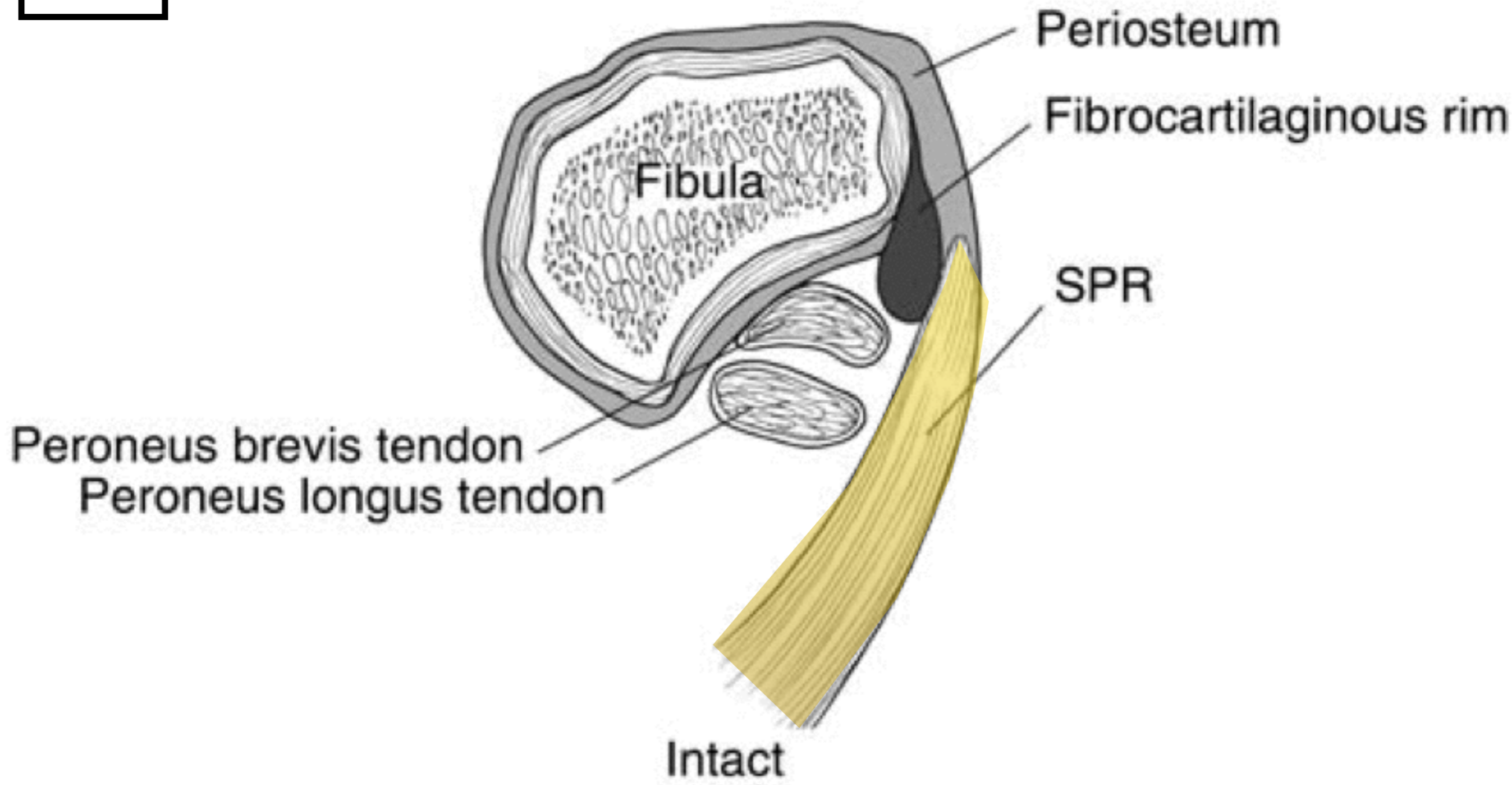


Eckert WR, Davis EA Jr

Acute rupture of the peroneal retinaculum.

J Bone Joint Surg Am 1976;58:670-672.

1976

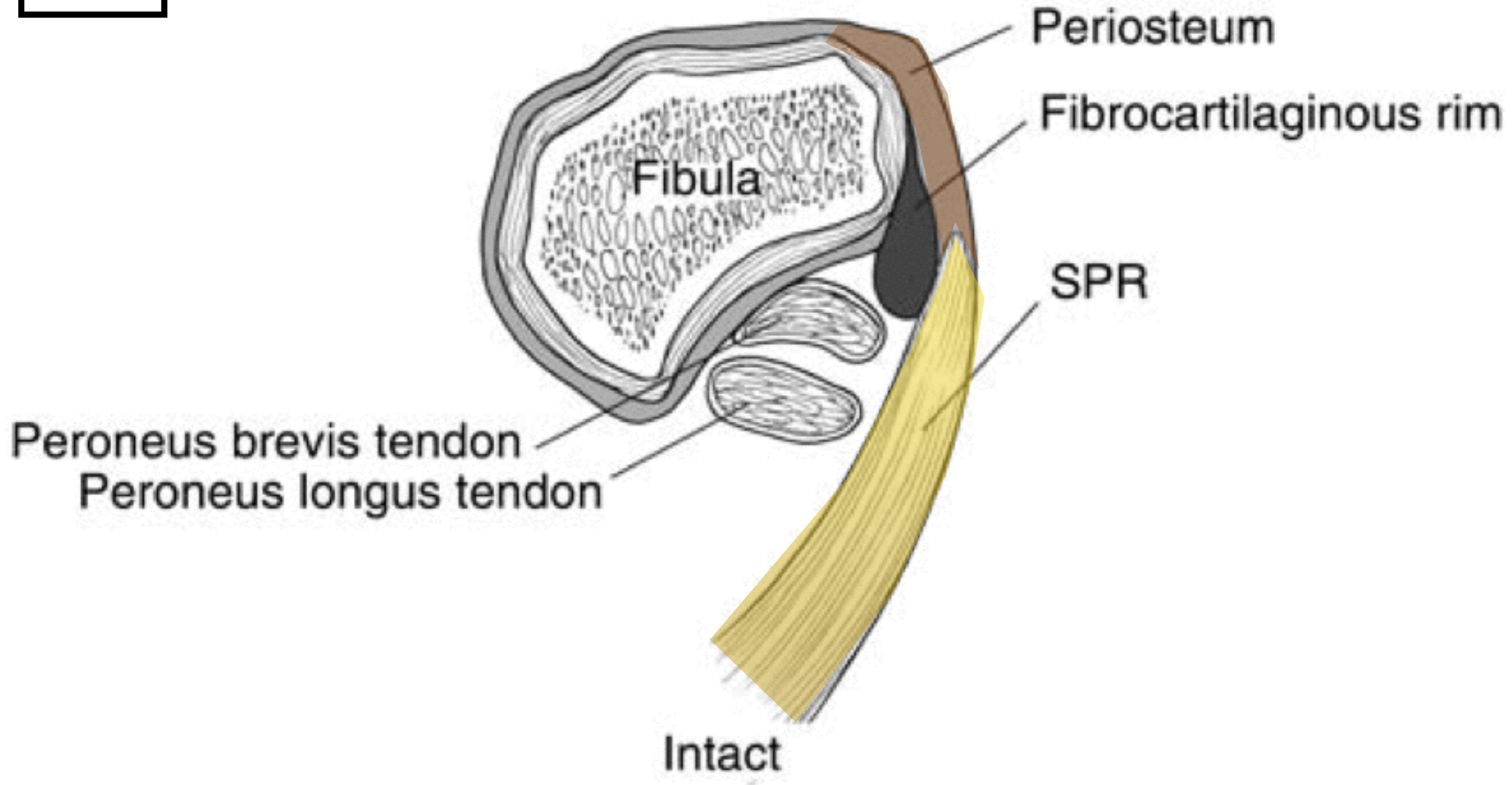


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