27 SECEC-ESSSE CONGRESS | EUROPEAN SOCIETY FOR SURGERY OF THE SHOULDER AND THE ELBOW

BERLIN 2017 · GERMANY · SEPTEMBER 13-16

secondary pectoralis major reconstruction with auto- or allograft

SCHÖN KLINIK Vogtareuth

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Aim and Background

- Pectoralis major ruptures are rare injuries.
- Compared to primary surgical therapy secondary reconstruction leads to inferior results.
- Can results of secondary reconstruction be improved by the additional use of auto- or allografts?

Acute / Chronic

- Achilles tendon rupture 1 week / 4 weeks
- dist. Biceps tendon rupture 6 weeks / 12 weeks
- Pectoralis maj. Tendon rupt. 6 weeks / 6 weeks
- ACL tear 6 weeks / 6 months
- ant. shoulder instability 2 weeks / 6 months
- AC joint dislocation 3 weeks / 6 weeks

chronic Pectoralis major Rupture

- 2 different Typs: Defekt Typ / Scarf Typ

chronic Pectoralis major Rupture

- loss of performance up to 50%
- cosmesis
- cramps
- pain

Clinical key aspect

„Contour sign / Shape sign"
Loss of contour of the axillary fold in 90° ABDuction > pathognomonic!

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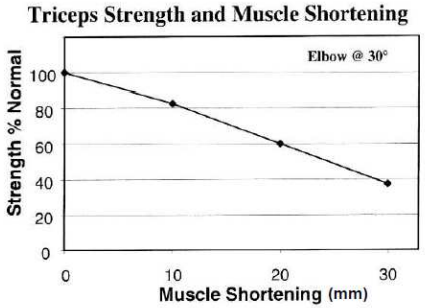
Chronic Pectoralis major Tear

- Aim: restore normal muscle tendon length



Hughes et al. 1997

Previous Pectoralis major Tear Study

- 105 Pectoralis major Ruptures in 92 Patients
- 64 operative Therapy
- 37 primary, postprimary
  - 37 good and very good
  - 32 prior level of strength
- 27 chronic (incl. 5 Reruptures)
  - 12 good, 8 satisfied, 7 poor
  - 12 prior level of strength
- good results in only 44% of the chronic cases

Ritsch SECEC 2009,2010

Methods

- 300 Pectoralis major tears in 280 patients
- 220 operative reconstructions single surgeon
- 25 Auto or Allografts, 21 Power athletes
- FU 1-3y, ø 36,3y, ø 182 cm, ø 98 kg, ø 16,9y Train.
- Location: myotend. junction 21, tendon 3, muscle 1
- Extent: compl. 3 x, psc+pabd 18 x, psc 1 x, pabd 3 x
- Cause: Bench pressing 13x, Fall 7x, Wrestling 3x
- Time to OP ø 39 month (4 month-18 years)

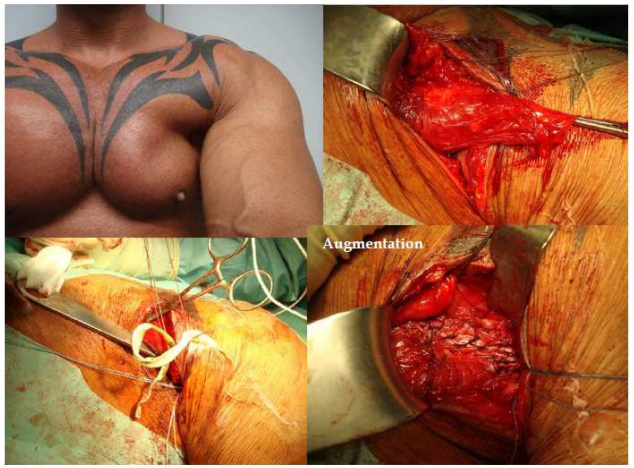
Methods

- 7 Autografts (6 Semitendinosus, 1 Gracilis)
- 18 Allografts from DIZG (13 Semitendinosus, 4 Gracilis, 1 Fascia lata)
- sharp mobilisation
- Refixation with 2-4 2,9mm Juggerknots ™

- Grafts in W or V shape
- Augmentation or Interposition
- Rehab: Immobilisation 6 weeks in a sling
- 12 weeks no weight bearing

Results

- 23/25 Patients (92%) good and very good results
  2 satisfied (Bak Classification - Bak et al. 2000)
- Return to sport 100%
- Return to prior performance 80%
- complication rate 24%
- minor complications 16%
  wound healing disorders
- major complications 8%
  1 deep infection (Autograft), 1 deep arm thrombosis
- problems with the lifting defect of the Autografts in athletes



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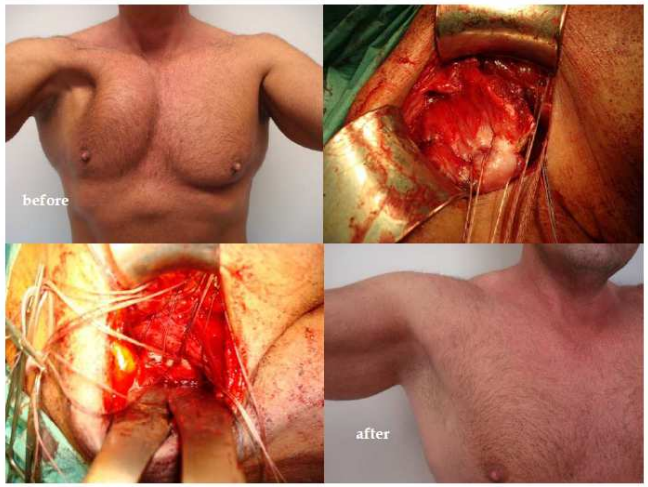

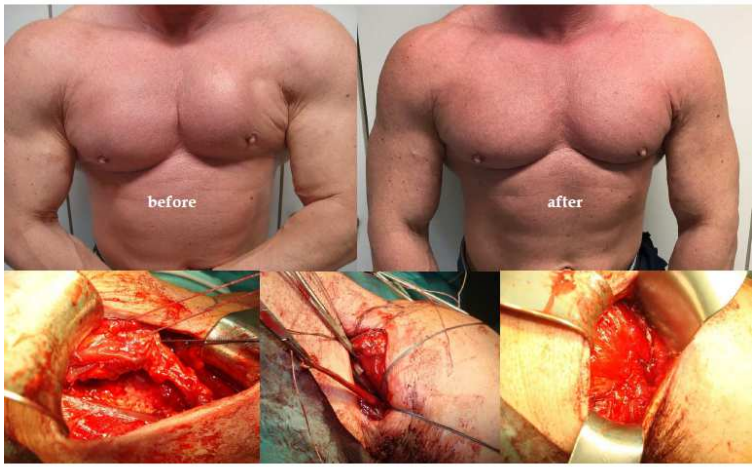

Conclusion

- 2 different types in chronic cases
- secondary pectoralis major reconstruction in chronic defect type cases with Auto or Allograft achieve good results
- in contrast to a previous study with direct repair the results with graft are better 92% vs 44% good
- no differences regarding the different parts of pectoralis major. Maybe the pars sternalis is more difficult to reconstruct.
- no differences in outcome between Allo- and Autograft reconstruction
- High complication rate in this series

Chronic Pectoralis major Rupture

- Defect Type

Mobilisation of the ruptured tissue and refixation to the humerus, if possible. In most cases a tendon graft Interposition or Augmentation is needed.

- Fascia scarf Type

Mobilisation of the scarf tissue and refixation to the humerus. There in normally no tendon graft needed.

Conclusion

- early, acute operation achieve the best results
- avoid chronic cases
- Refixation in chronic cases not always needed
- high complication rate, additional Autograft
- difficult soft tissue surgery, needs experience
- good mobilisation of the Pect. major muscle and suture anchor refixation is needed
- Hamstring Allograft is a good alternative to Autograft
- the Hamstring lifting defect in power athletes is much smaller when taking gracilis tendon