

WARUM SCHMERZT DIE SCHULTER ?

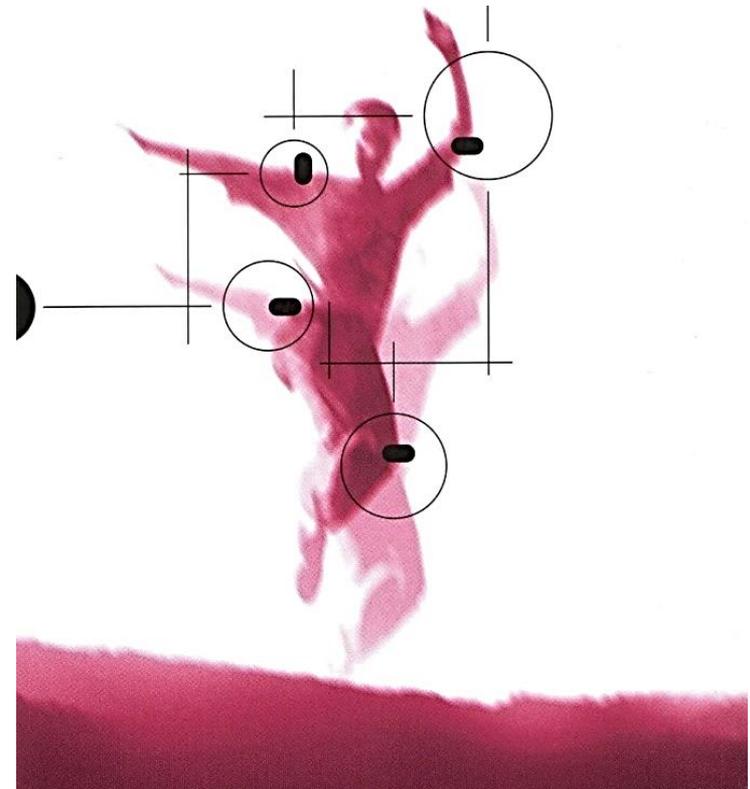
A.G. Schneeberger
Schulter- und Ellbogen-
Chirurgie
Endoclinic Zurich
Klinik Hirslanden



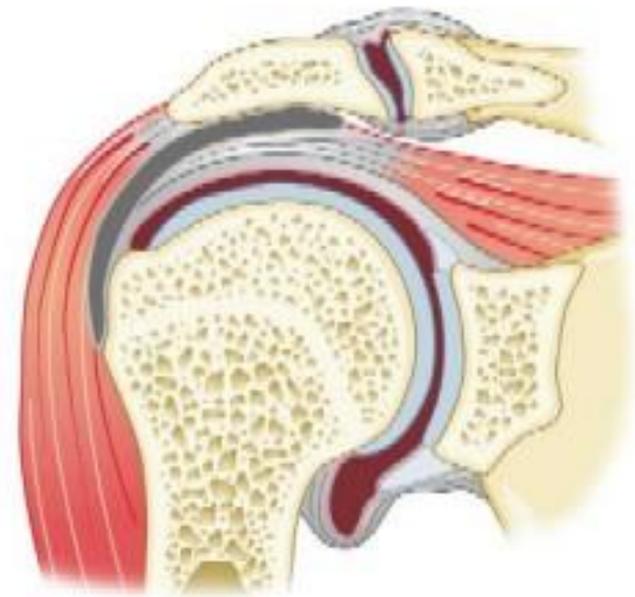
Endoclinic Zürich Klinik Hirslanden

- **PD Dr. med. Alberto Schneeberger**
- **Dr. med. Andreas Keller**
- **Dr. med. Christoph Spormann**
- **PD Dr. med. Beat Simmen**
- **Dr. med. Philipp Nufer**
- **Dr. med. Felix Rapp**
- **Prof. med. José Romero**

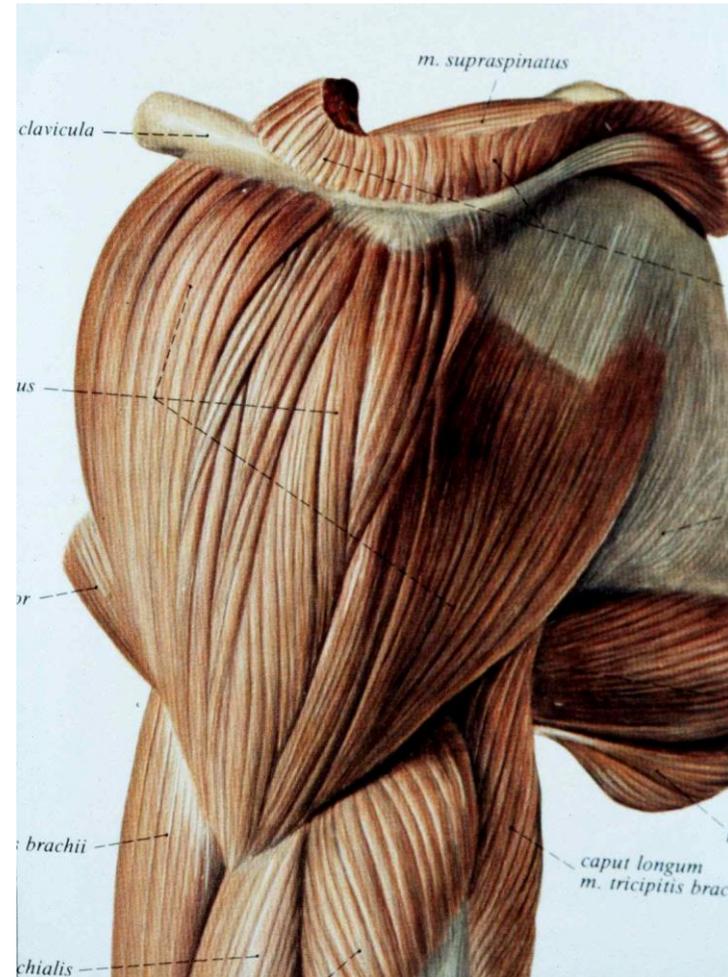
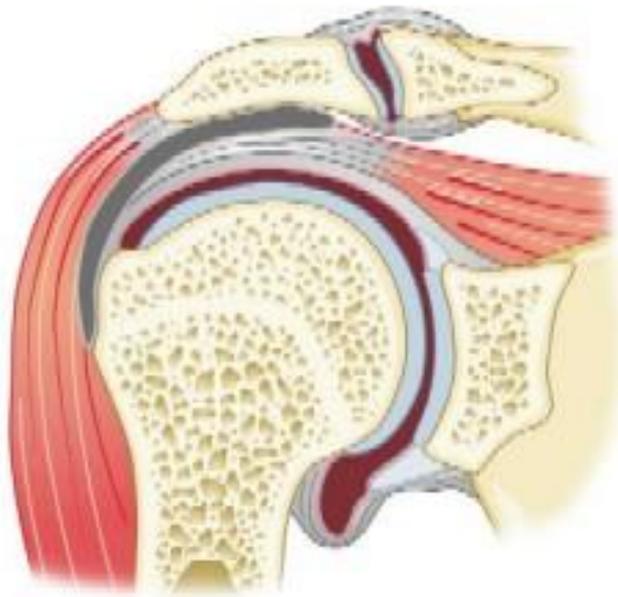
***Zentrum für Gelenkchirurgie
und Endoprothetik***



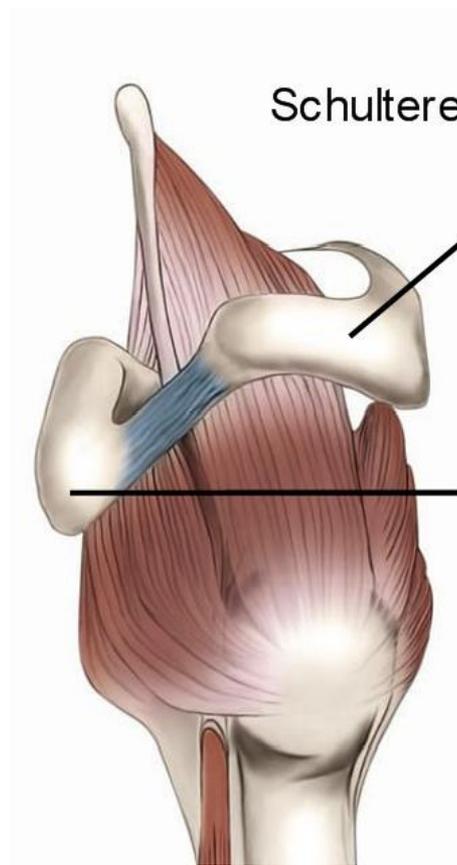
SCHULTERGELENK



DELTAMUSKEL



ROTATORENMANSCHETTE



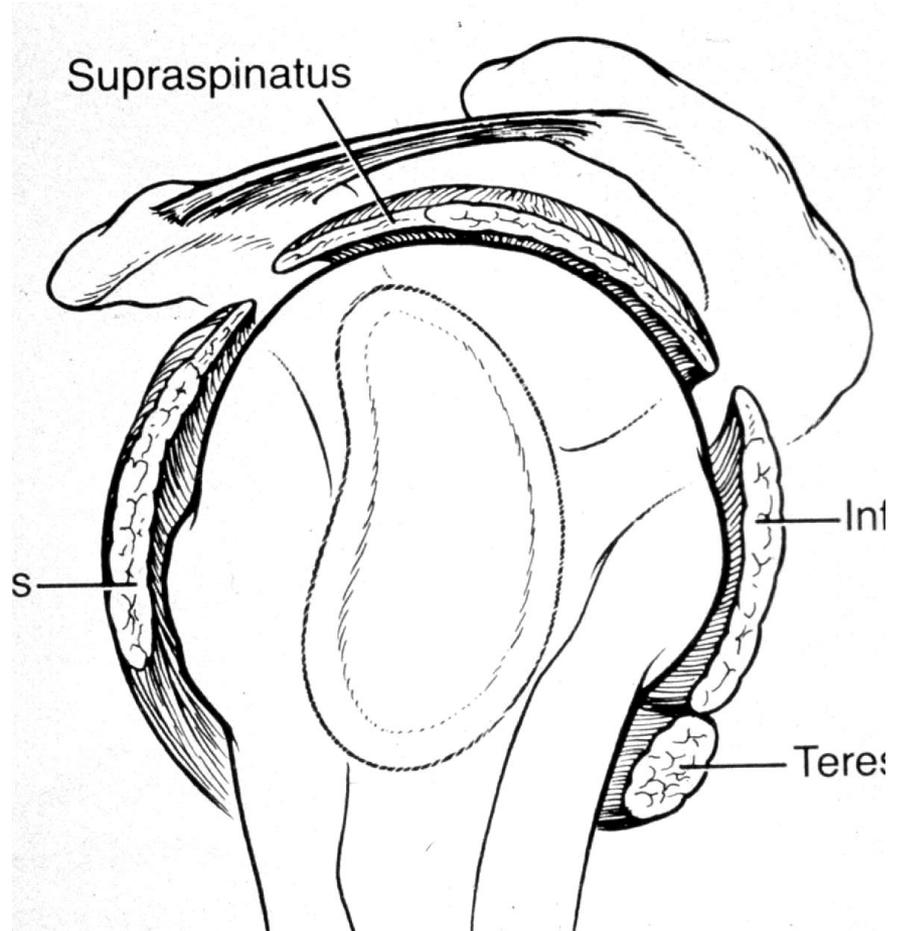
ROTATORENMANSCHETTE

M. subscapularis

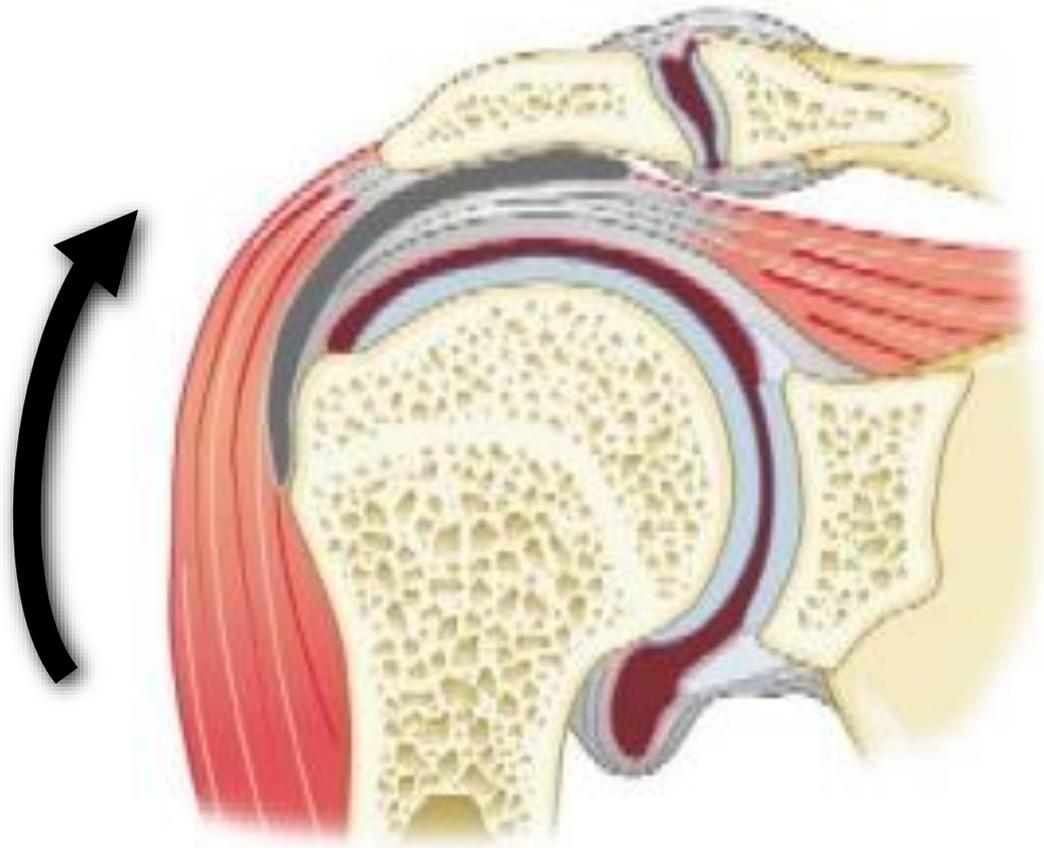
M. supraspinatus

M. infraspinatus

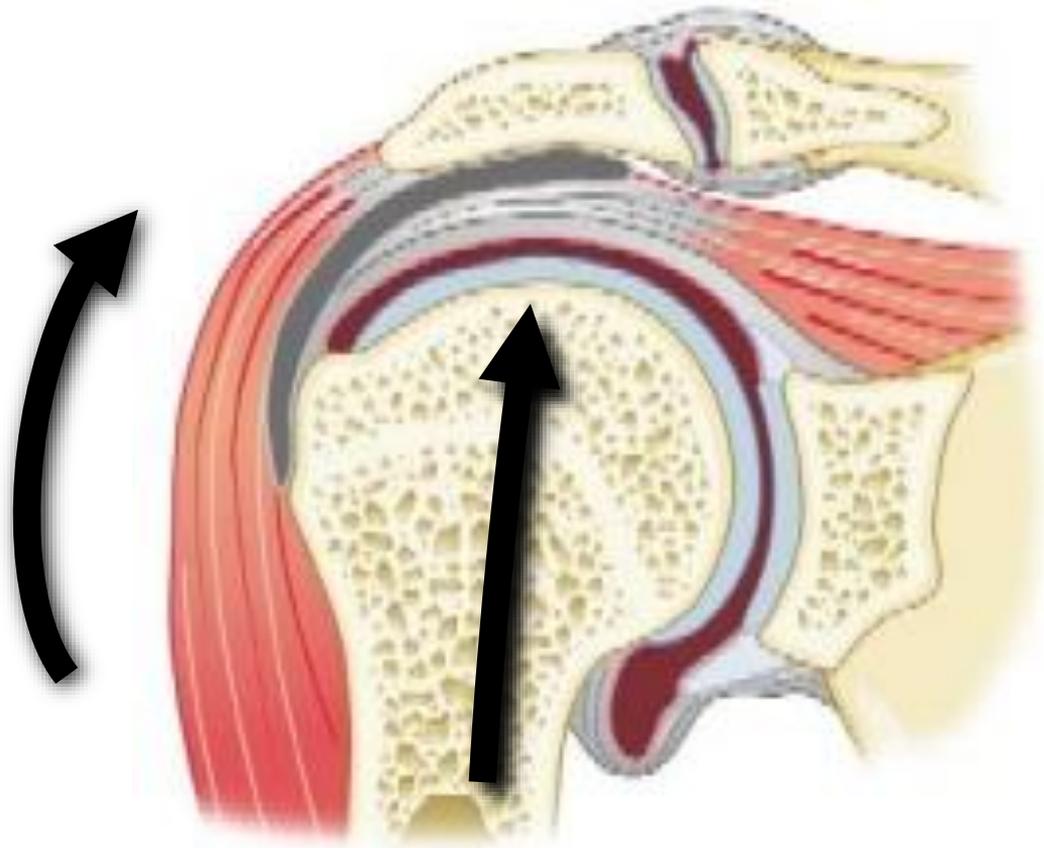
M. teres minor



ABDUKTION

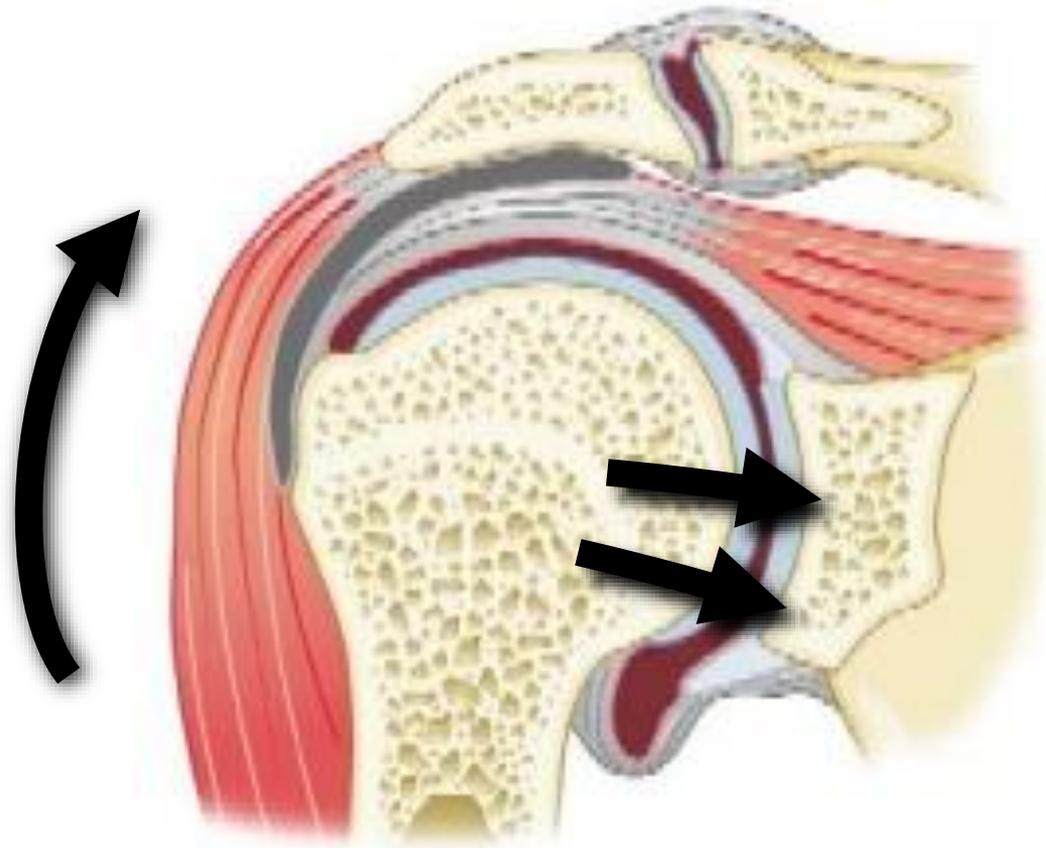


ABDUKTION



ROTATORENMANSCHETTE

ZENTRIERT HUMERUSKOPF IM GELENK



SUBACROMIALER DRUCK



SUBACROMIALER DRUCK



SUBACROMIALER DRUCK



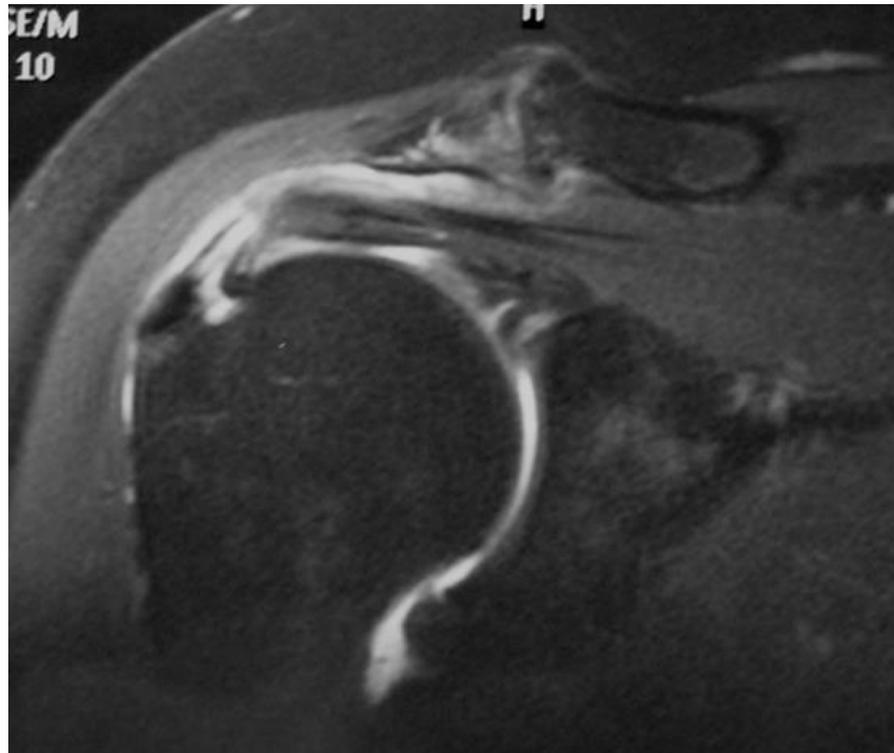
SUBACROMIALES IMPINGEMENT



SUBACROMIALES IMPINGEMENT



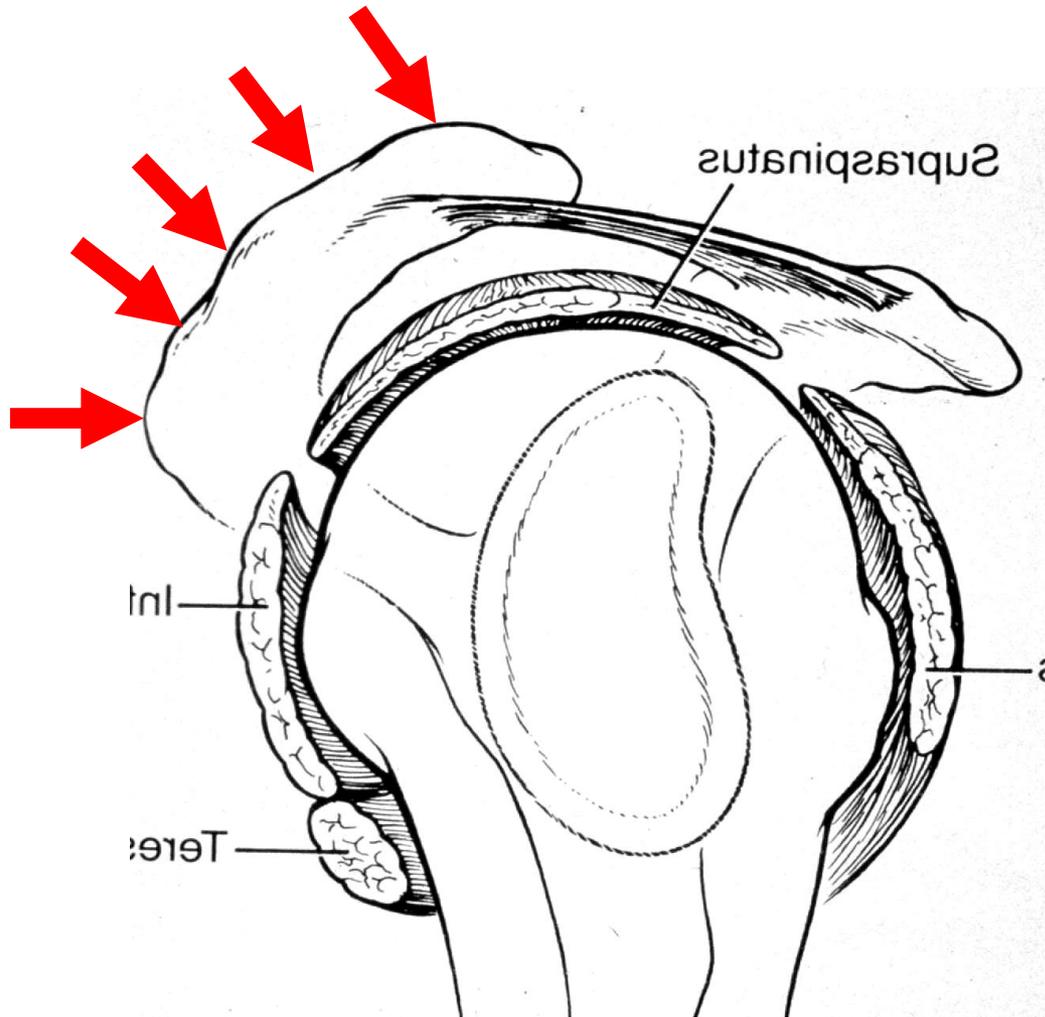
SUBACROMIALES IMPINGEMENT ROTATORENMANSCHETTEN-RUPTUR



SUBACROMIALES IMPINGEMENT ROTATORENMANSCHETTEN-RUPTUR

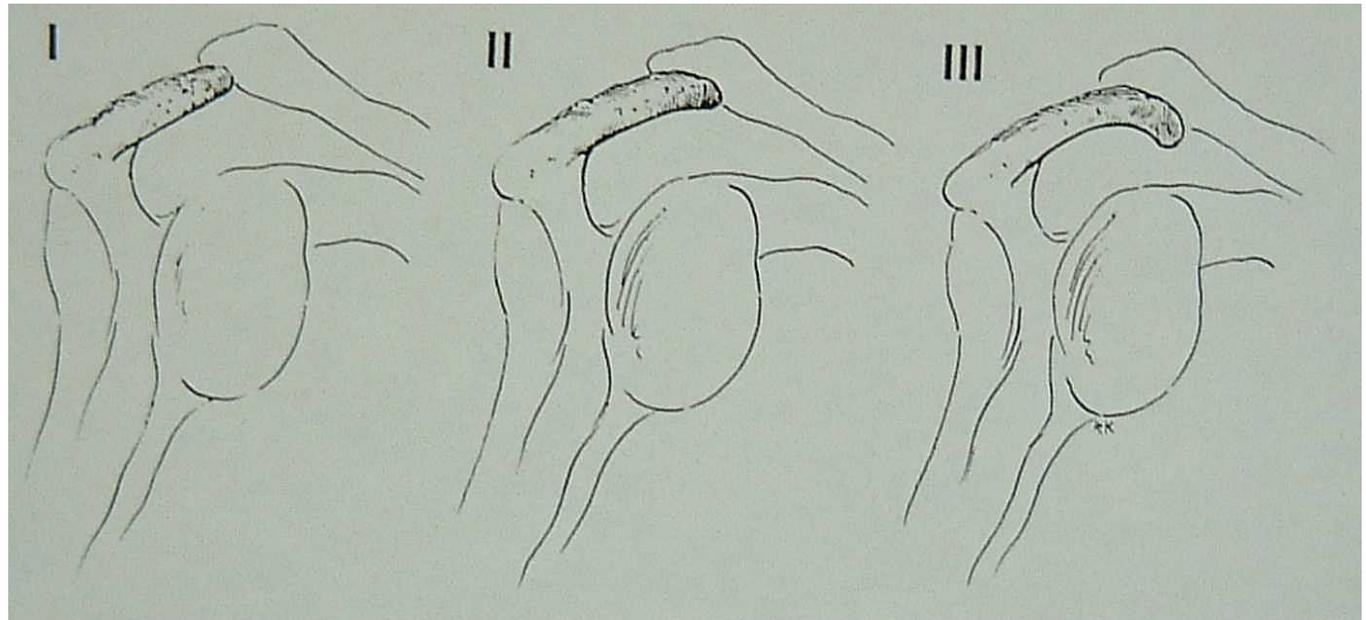


ACROMION



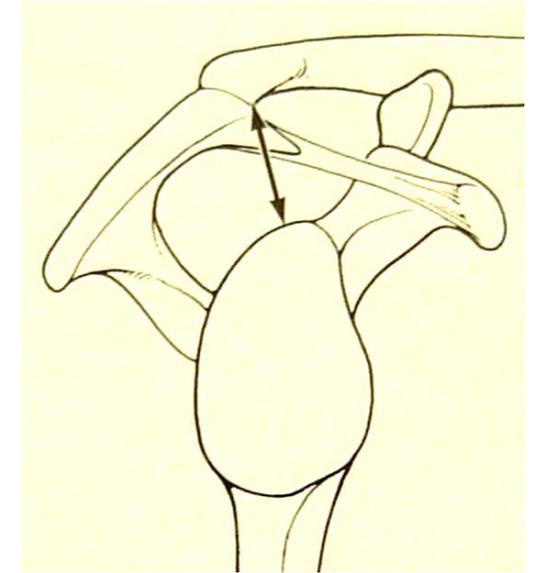
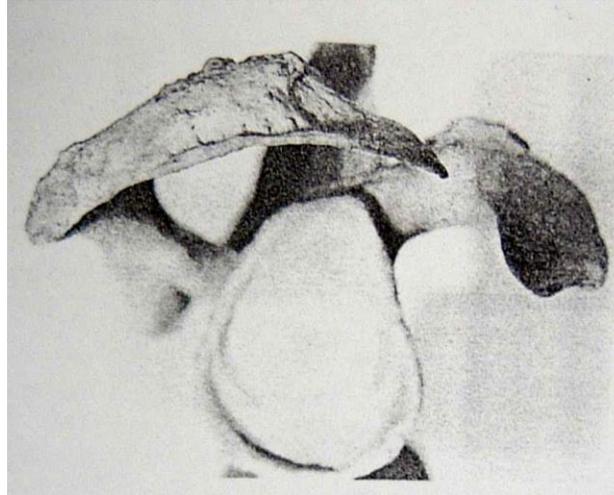
ACROMION

- Typ I-III



Bigliani, Orthop Trans, 1986

ACROMION



- ***Typ III = Verknöcherung des Bandes***
- ***Typ III nicht bei Patienten < 30 Jahre alt***

Edelson, JBJS 77-B, 1995

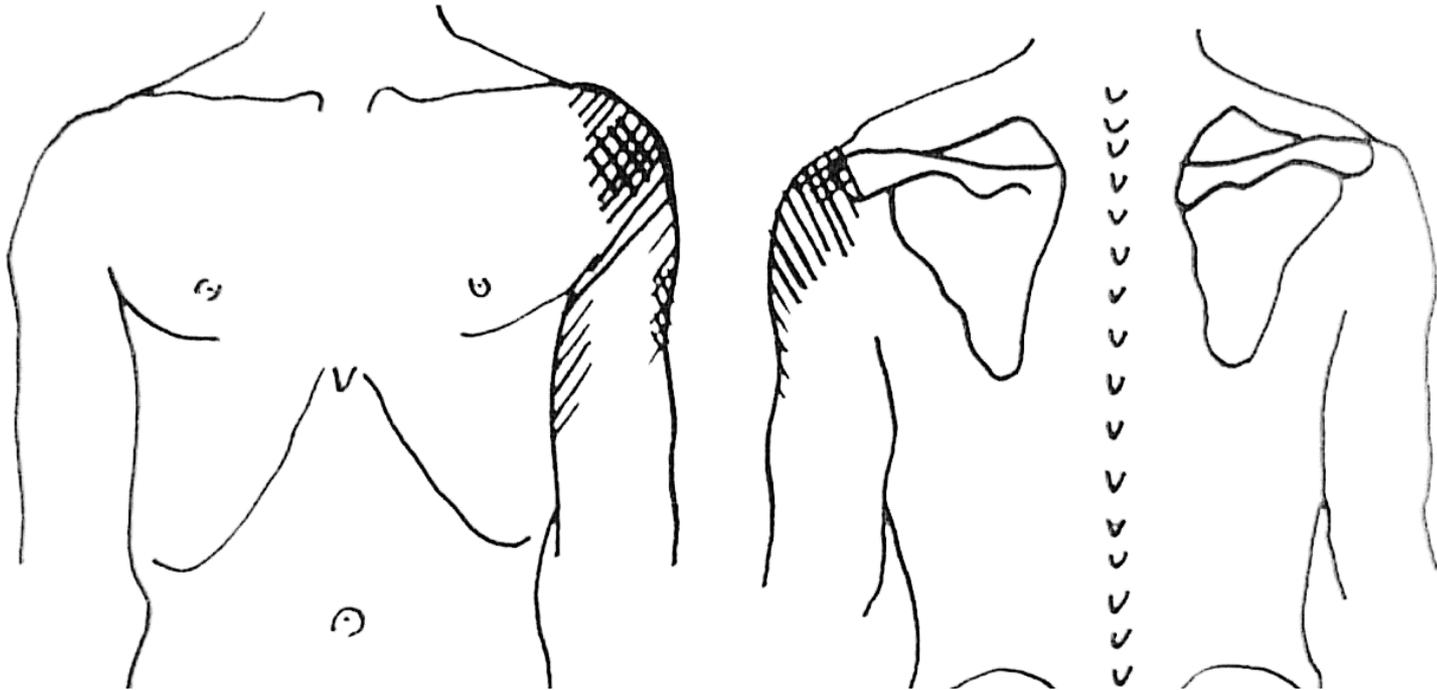
SUBACROMIALES IMPINGEMENT

- “schmerzhafter Bogen”



SUBACROMIALES IMPINGEMENT

- Schmerzlokalisierung



SUBACROMIALES IMPINGEMENT

- Therapie

?

SUBACROMIALES IMPINGEMENT

- Warten



SUBACROMIALES IMPINGEMENT

- Warten

3 – 9 Monate

SUBACROMIALES IMPINGEMENT

- Physiotherapie



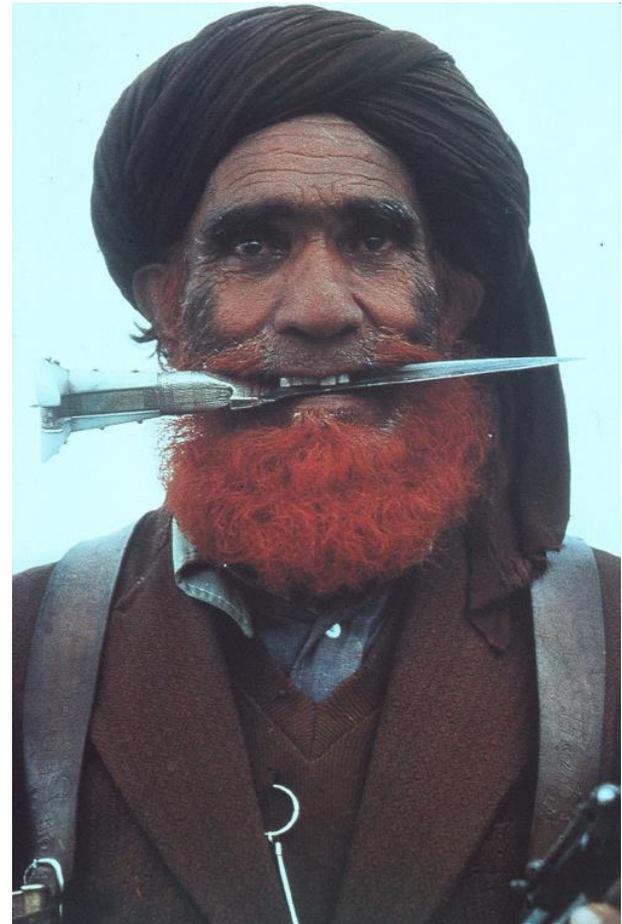
SUBACROMIALES IMPINGEMENT

- Kortisoninjektion



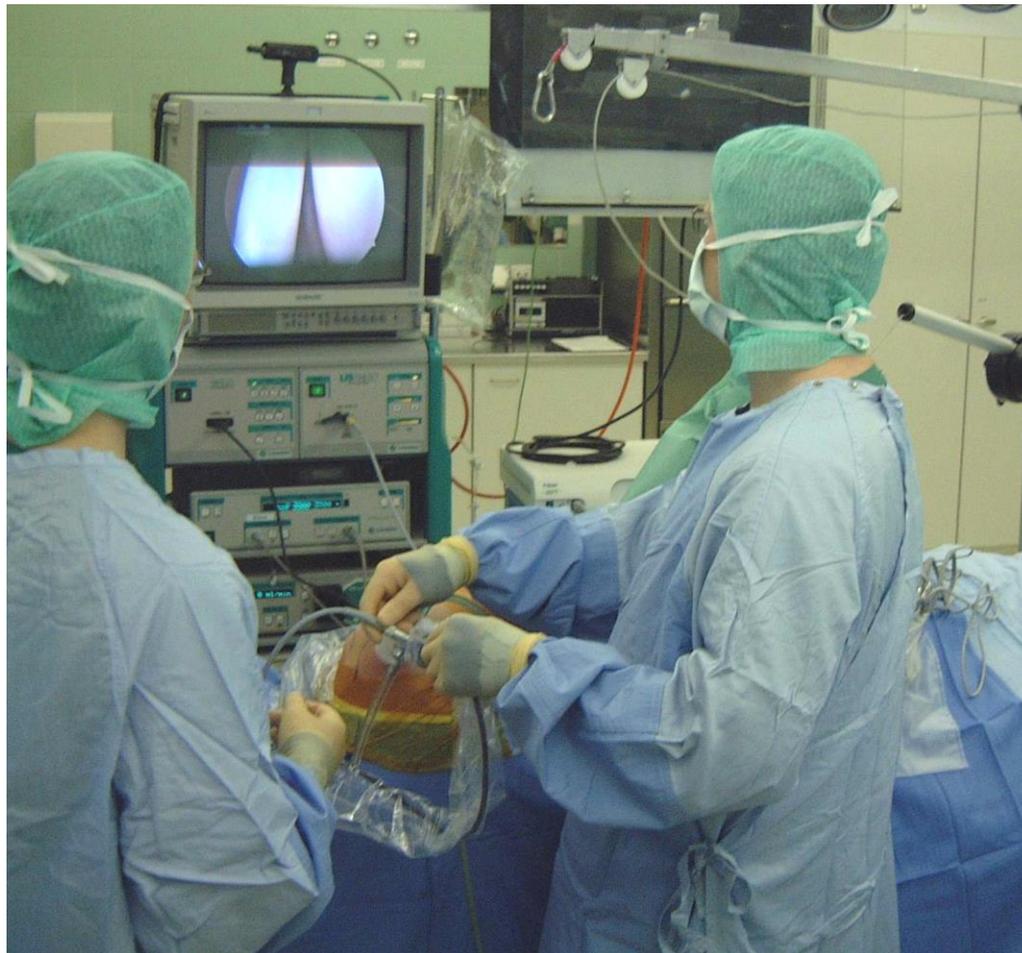
SUBACROMIALES IMPINGEMENT

- Operative Behandlung



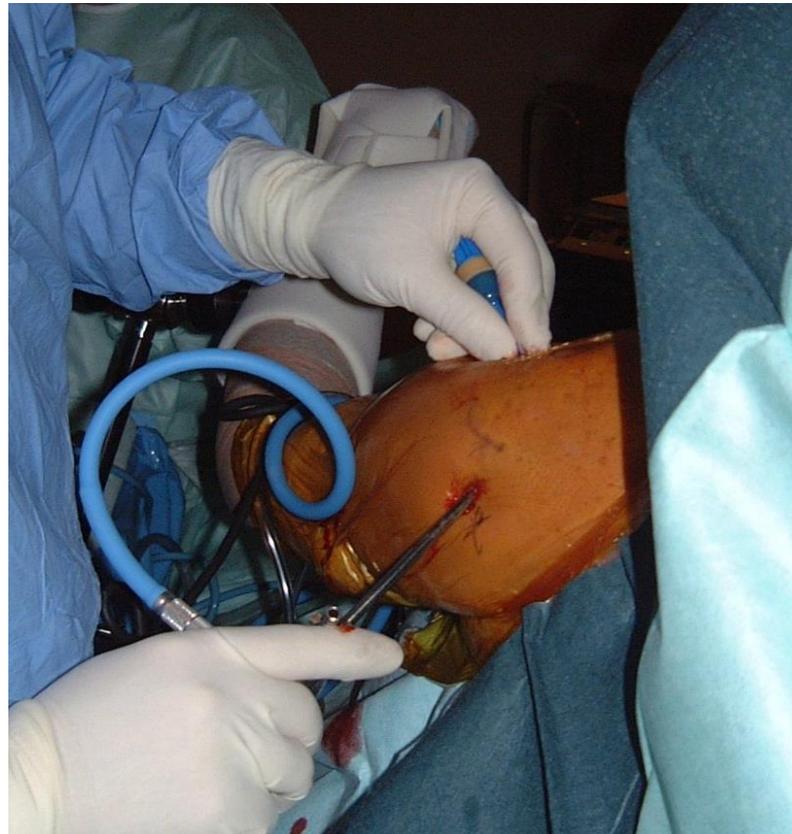
SUBAKROMIALES IMPINGEMENT

Arthroskopische Akromioplastik:



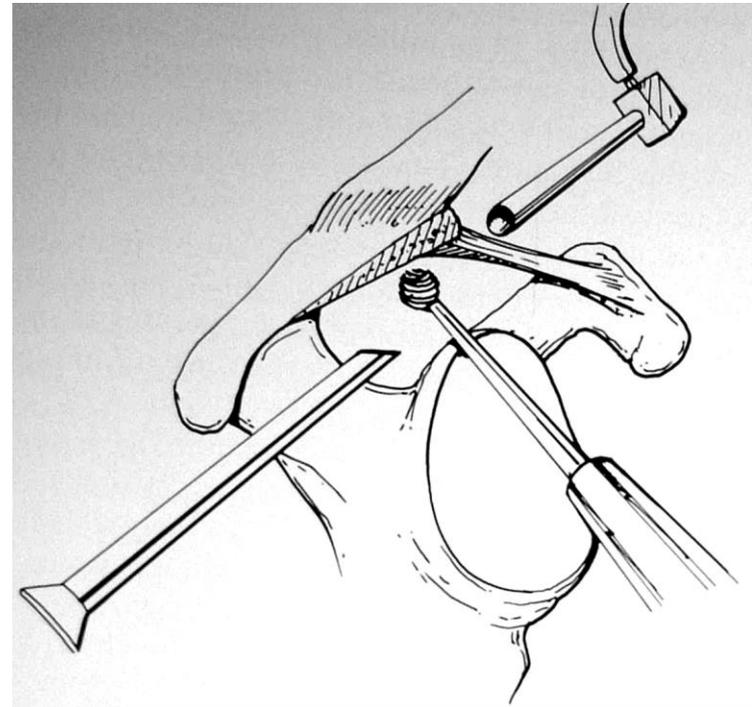
SUBAKROMIALES IMPINGEMENT

Arthroskopische Akromioplastik:



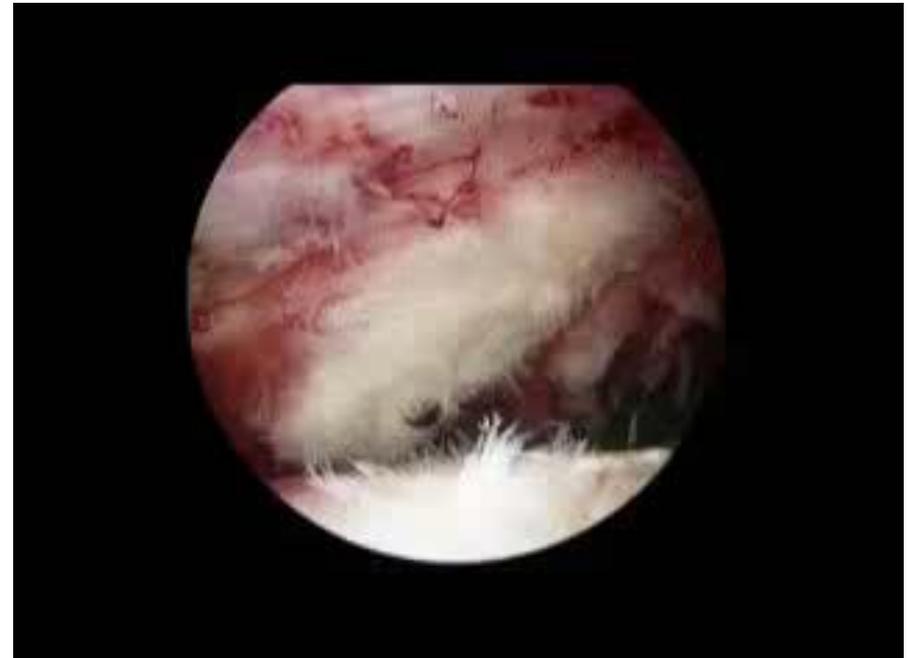
SUBAKROMIALES IMPINGEMENT

**Arthroskopische
Akromioplastik:**



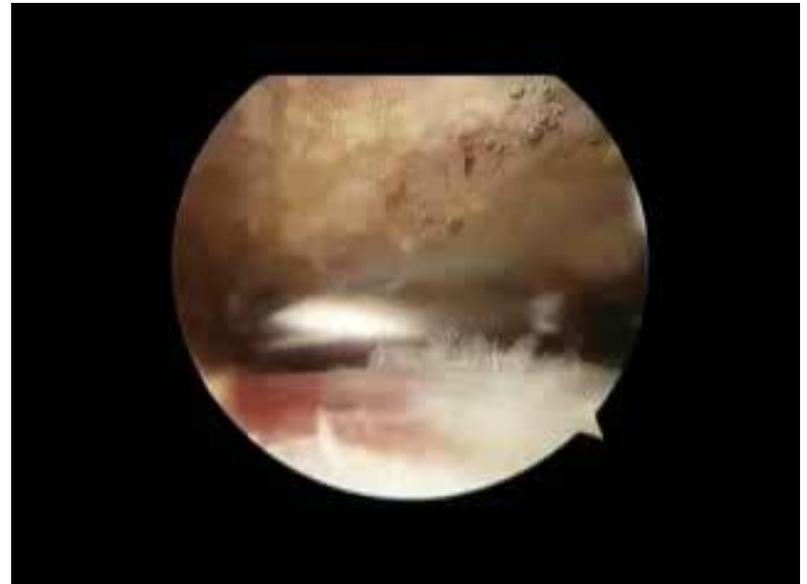
SUBAKROMIALES IMPINGEMENT

**Arthroskopische
Akromioplastik:**



SUBAKROMIALES IMPINGEMENT

**Arthroskopische
Akromioplastik:**

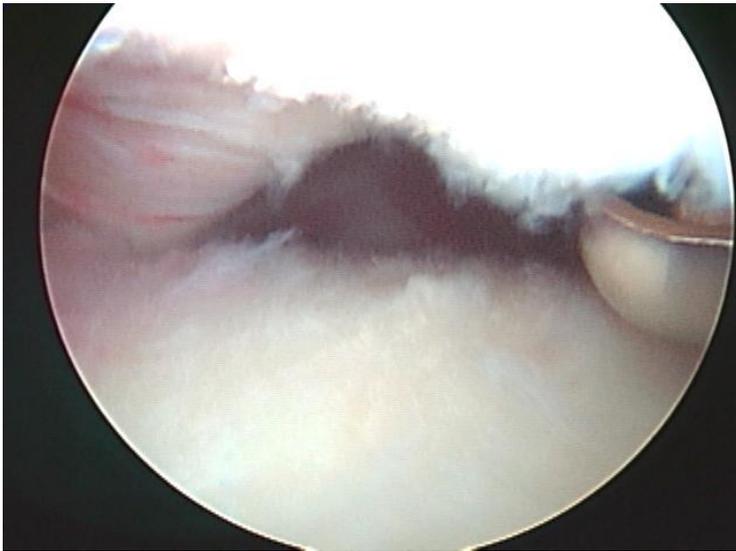


SUBAKROMIALES IMPINGEMENT

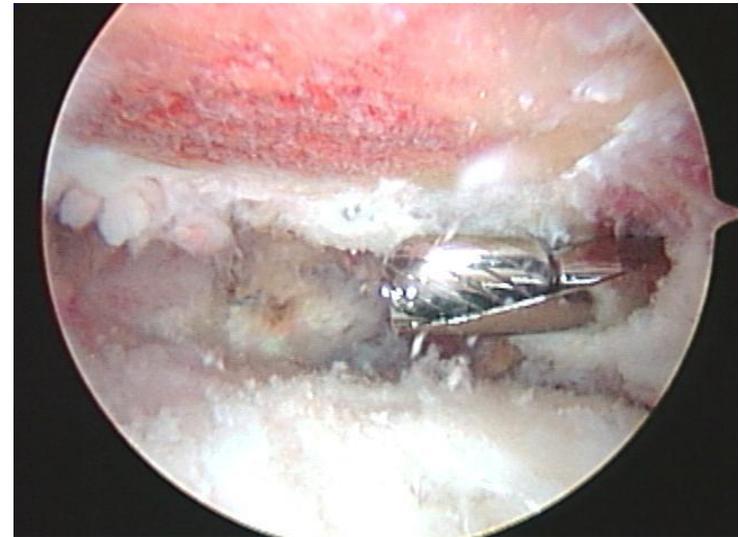
**Arthroskopische
Akromioplastik:**



AKROMIOPLASTIK



vorher



nachher

AKROMIOPLASTIK



vorher

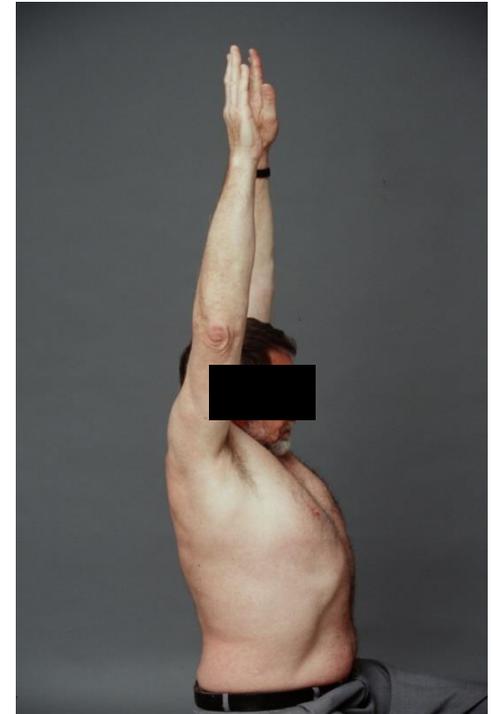


nachher

AKROMIOPLASTIK

Resultate:

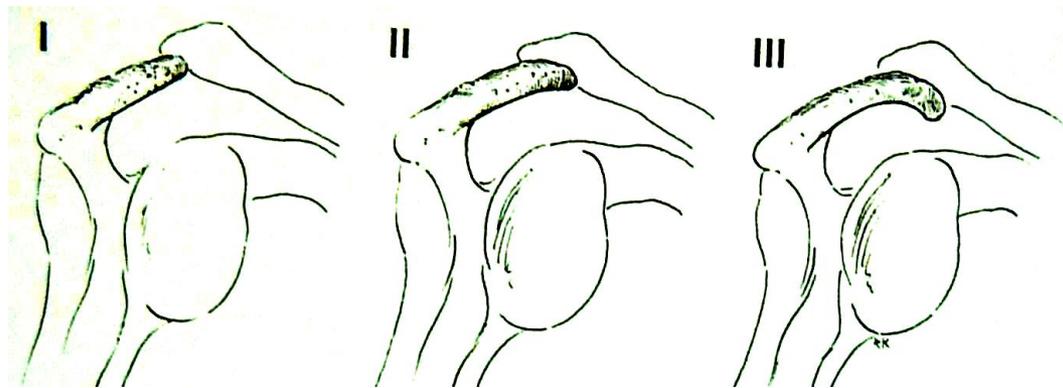
- > 90 zufriedenstellende Resultate
- Rehabilitation 3 - 6 Monate



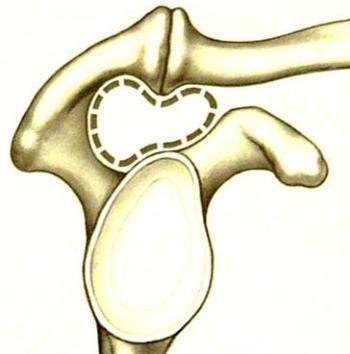
SUBAKROMIALES IMPINGEMENT

gehäuft bei:

- Akromion
Typ II, III



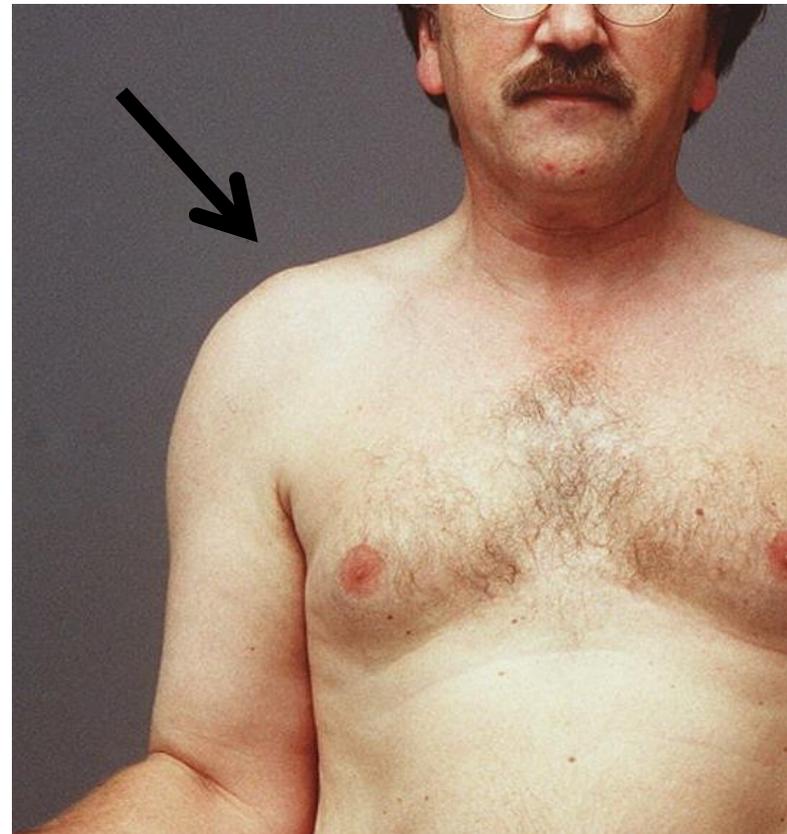
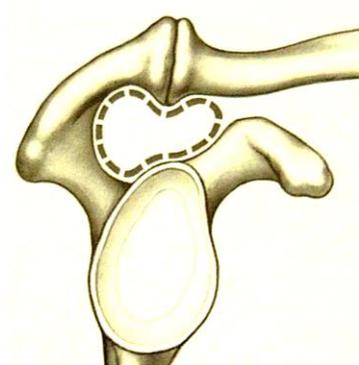
- AC Arthrose



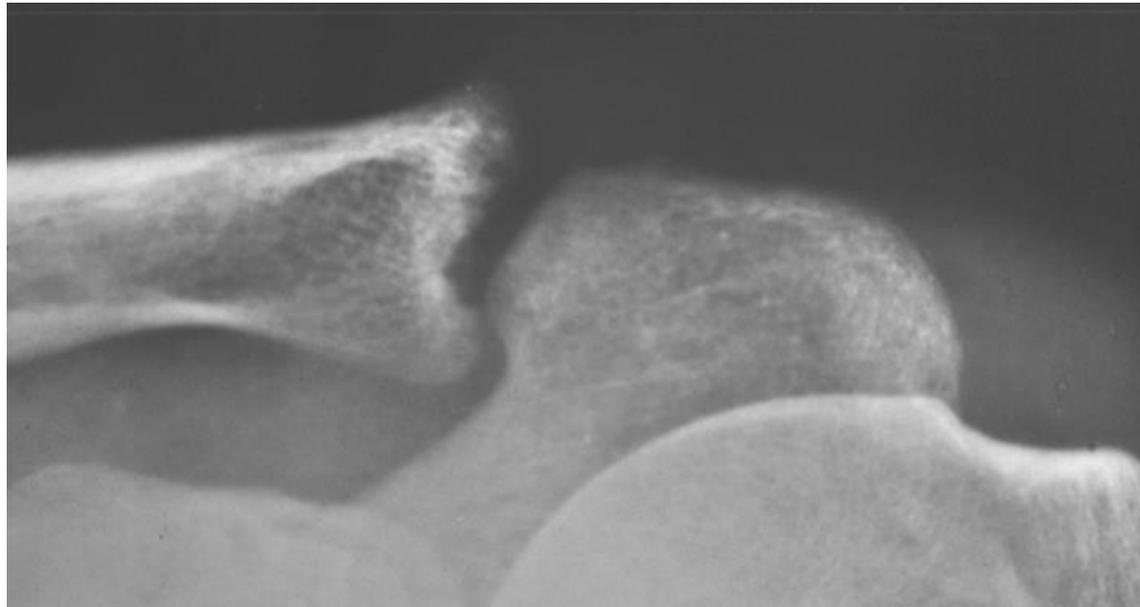
SUBAKROMIALES IMPINGEMENT

gehäuft bei:

- AC Arthrose



AC ARTHROSE

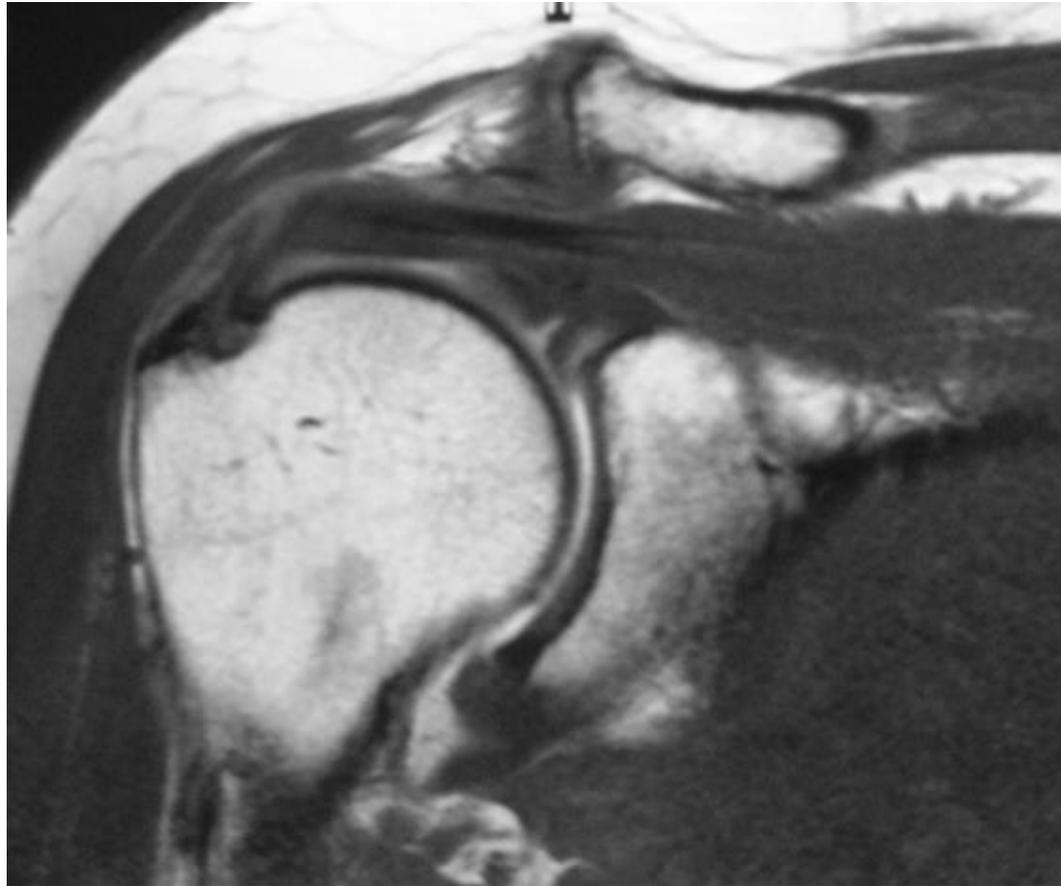


AC-Arthrose

- Schmerzlokalisierung



AC ARTHROSE



AC ARTHROSE

Therapie

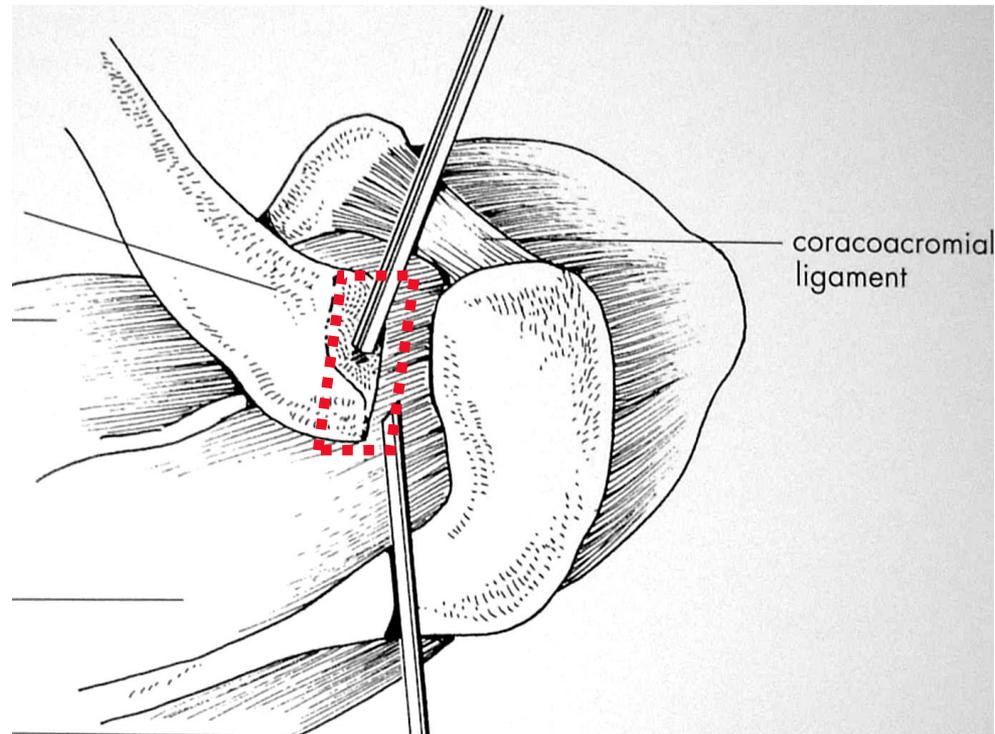
- Kortisoninjektion



AC ARTHROSE

Therapie

- Arthroskopische Resektion



AC ARTHROSE

- Arthroskopische Resektion



AC ARTHROSE

- Arthroskopische Resektion

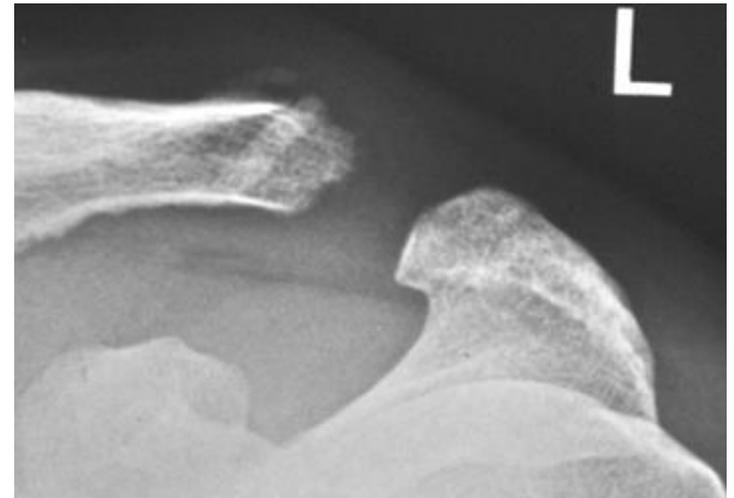


ARTHROSKOPISCHE AC-RESEKTION

Resultate:

- 90 % gut oder sehr gut

Pensak, Arthroscopy, 2010



VIELEN DANK



ARTHROSE DER SCHULTER

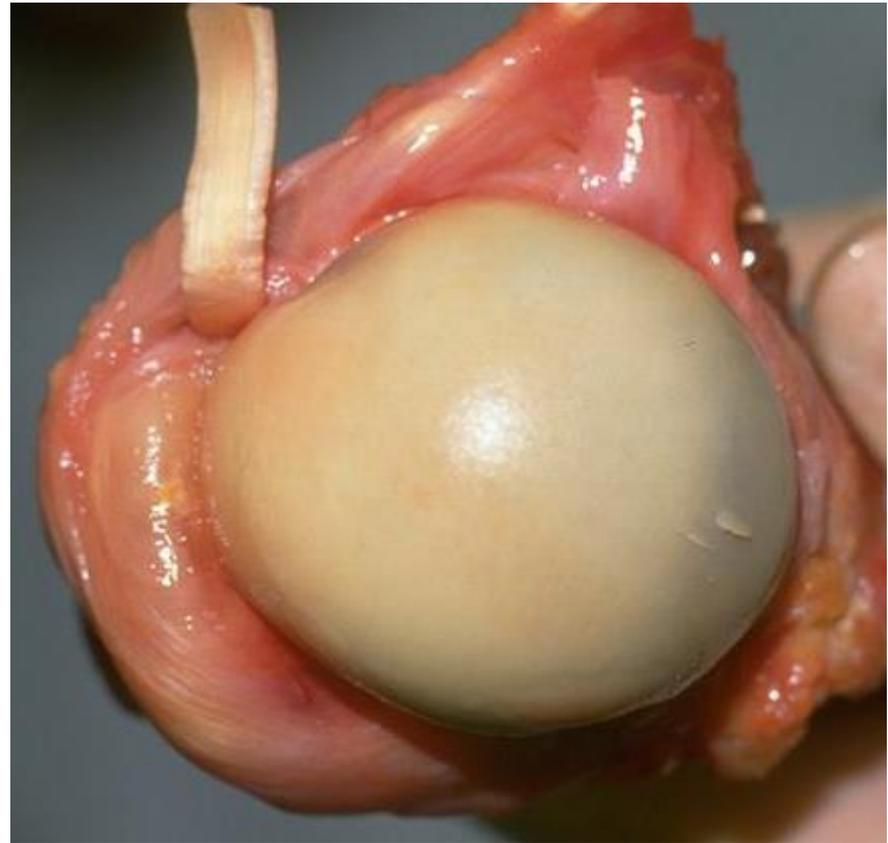
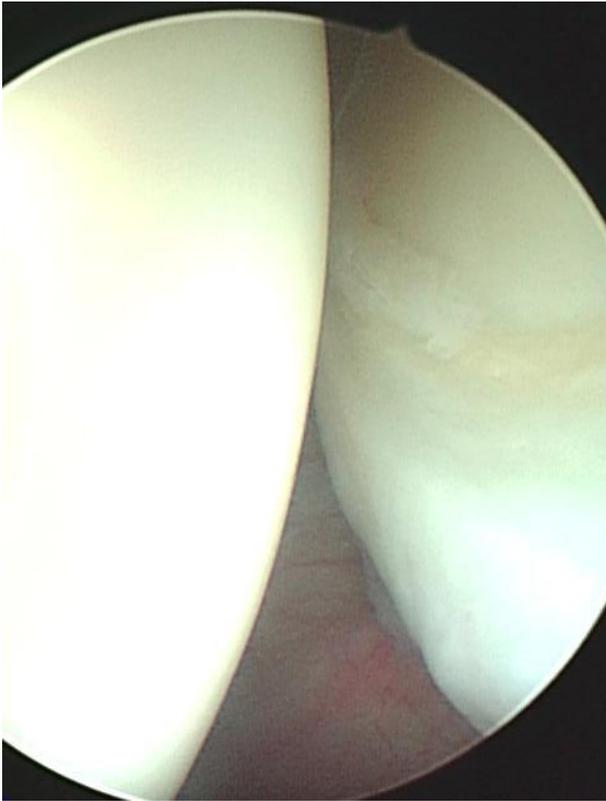
A.G. Schneeberger
Schulter- und Ellbogen-
Chirurgie
Endoclinic Zurich
Klinik Hirslanden



SCHULTERGELENK



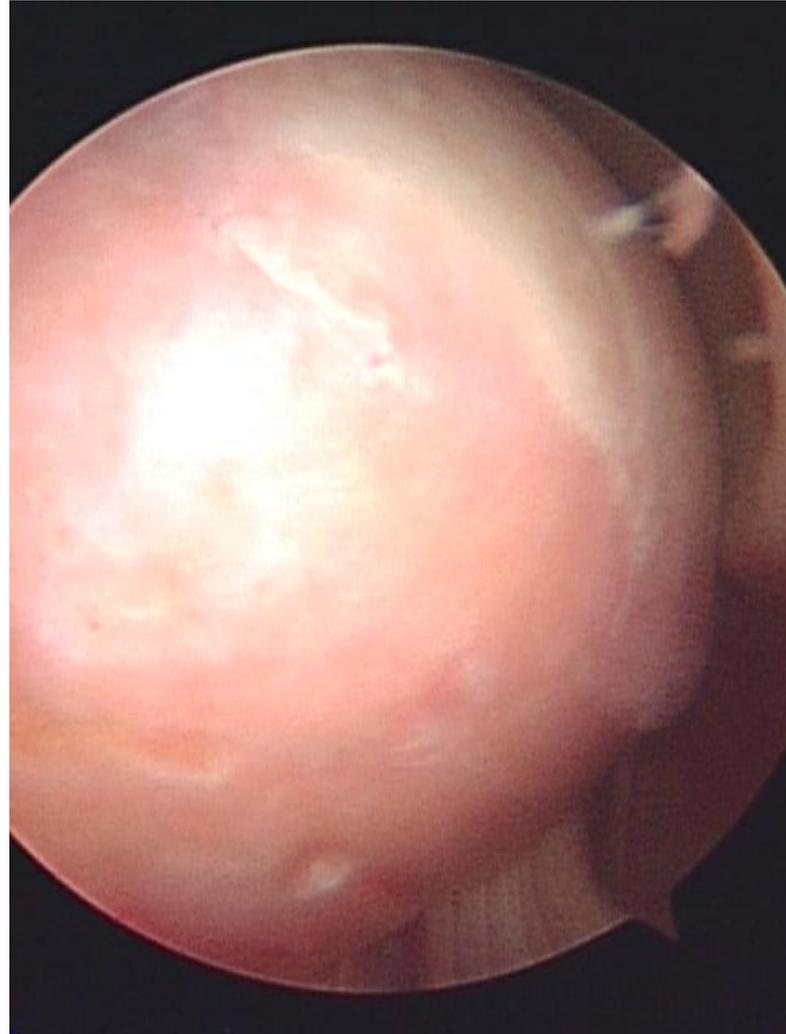
SCHULTERGELENK



KNORPELSCHÄDIGUNG / BEGINNENDE ARTHROSE



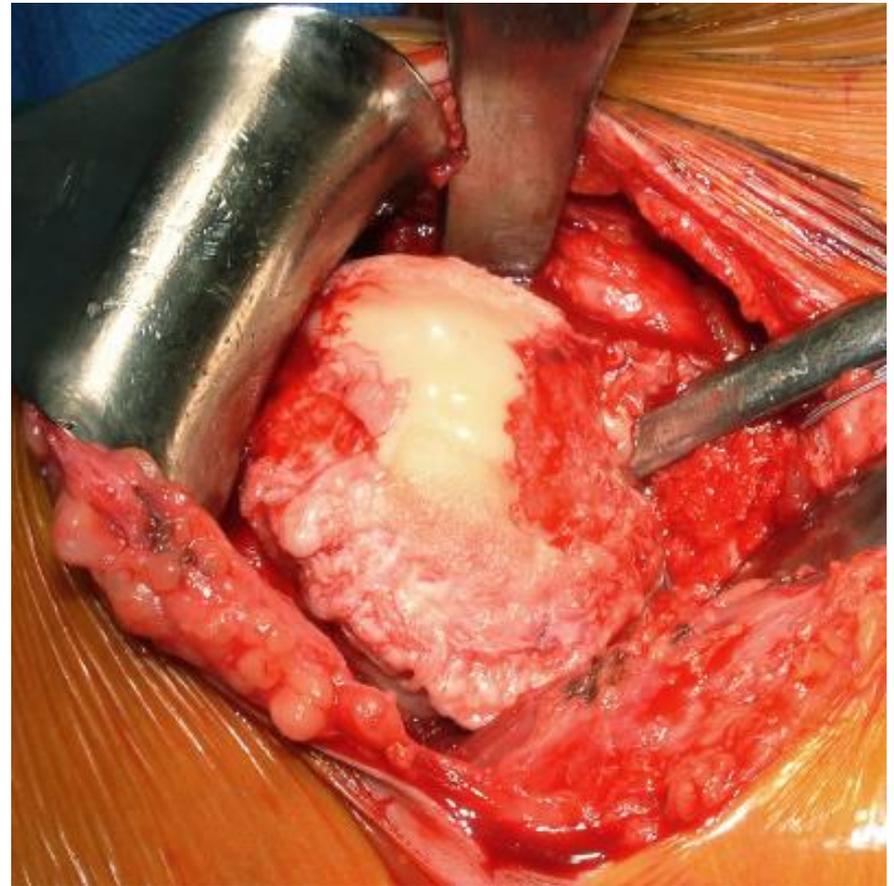
KNORPELSCHÄDIGUNG / ARTHROSE



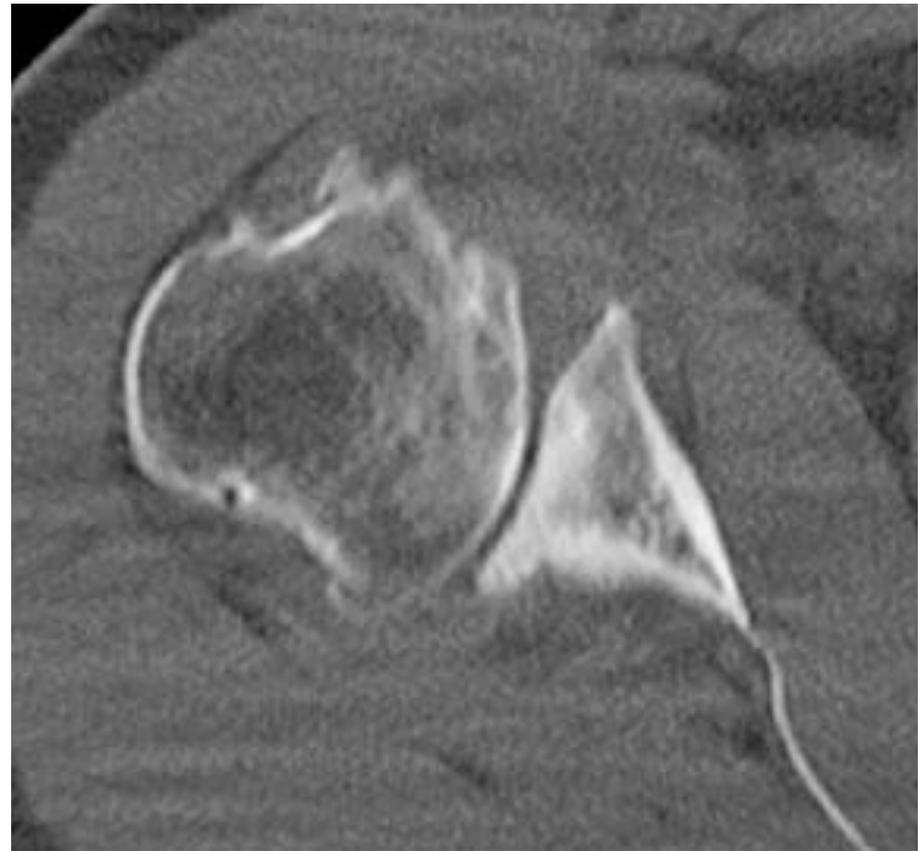
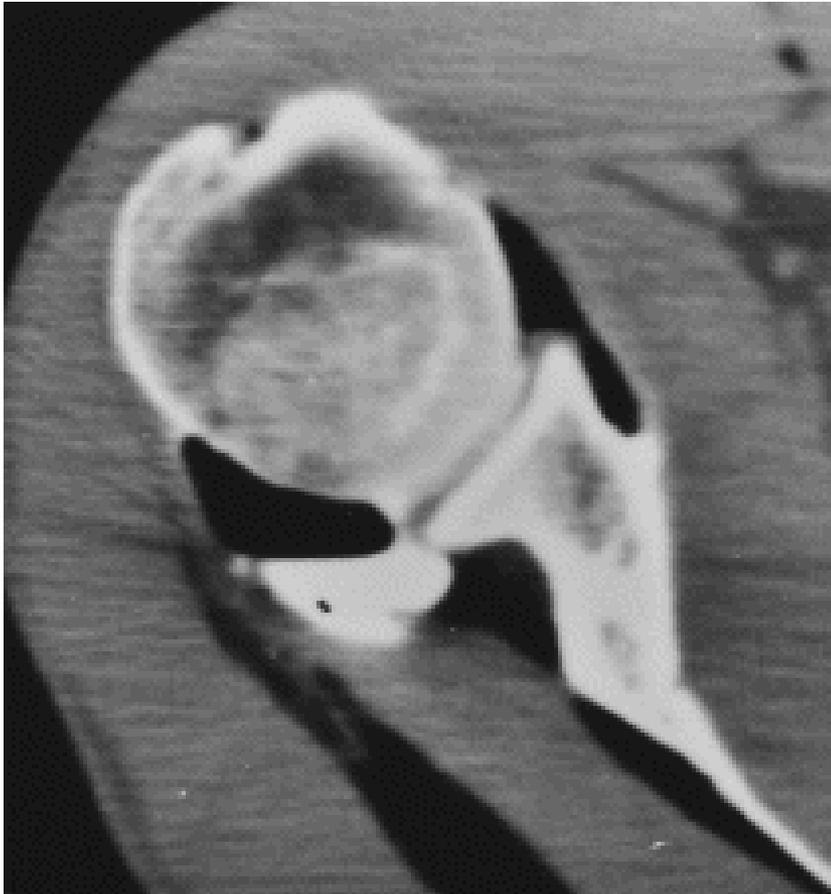
ARTHROSE



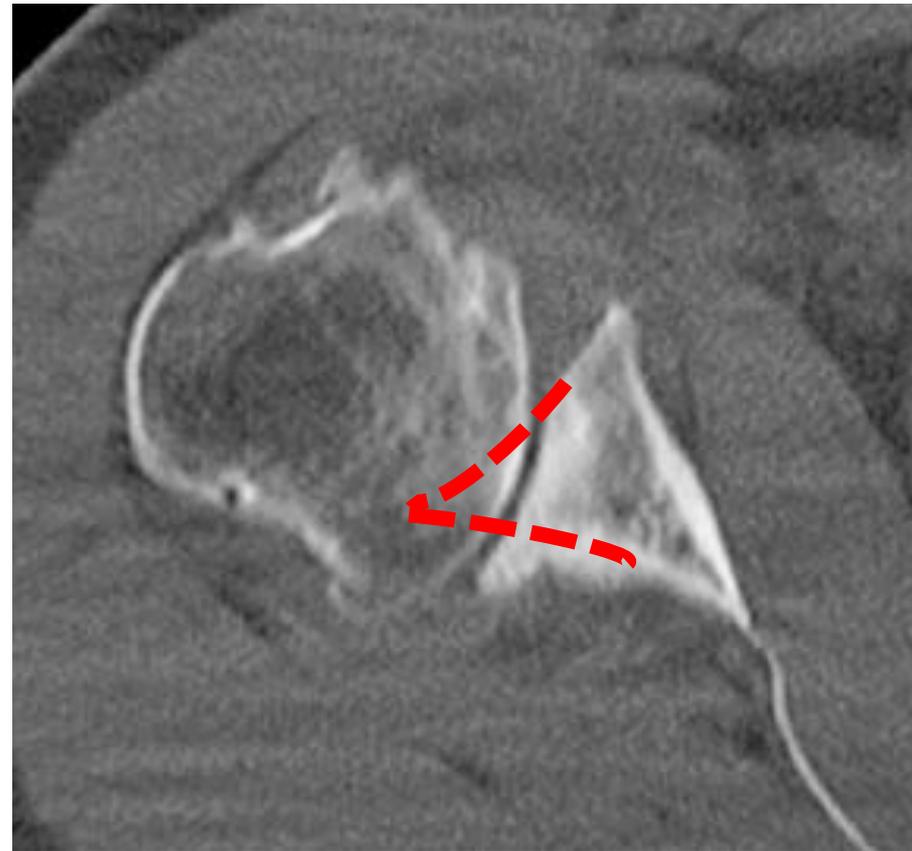
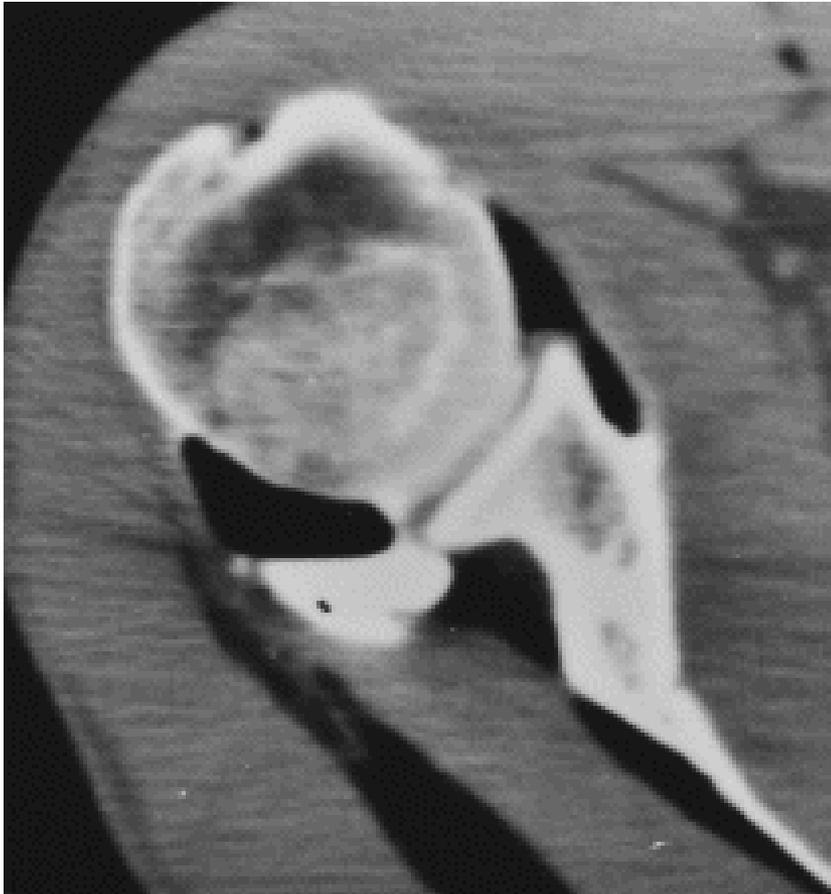
ARTHROSE



ARTHROSE



ARTHROSE



URSACHEN ARTHROSE

- Abnützung
- Alter
- Veranlagung
- Unfall bedingt



ARTHROSE



Therapie ?

THERAPIE ARTHROSE



- warten
- Kortisoninfiltration
- schonen /
anpassen der Aktivitäten

ARTHROSE



Schulterprothese !

BEHANDLUNG DER ARTHROSE

- **anatomische Prothese bei intakter Rotatorenmanschette**
- **inverse Schultertotalprothese bei Rotatorenmanschettenruptur**

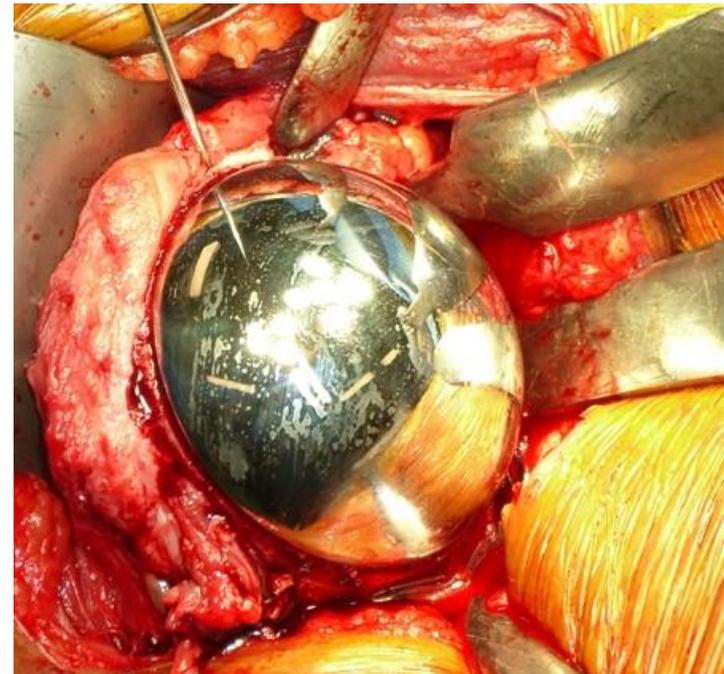
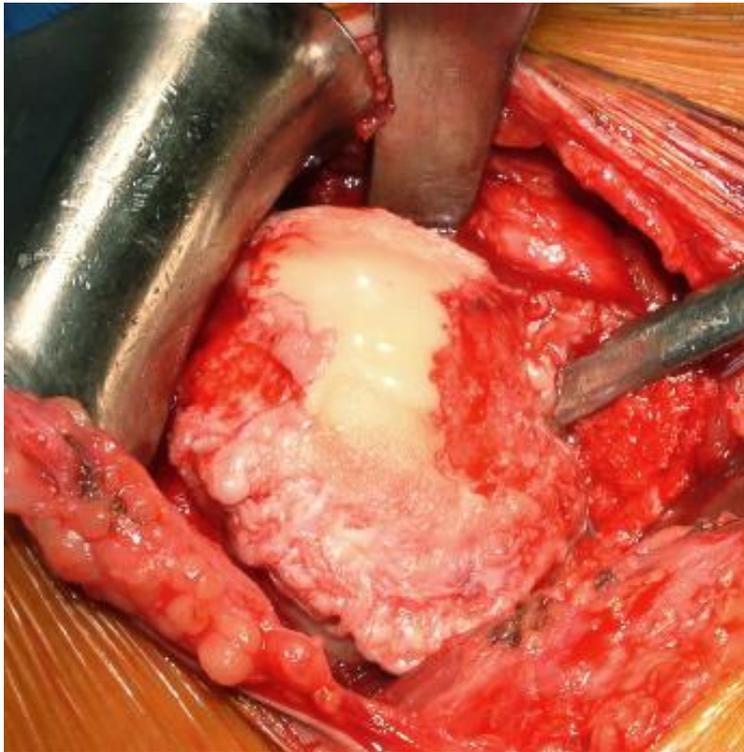


ANATOMISCHE PROTHESE



Ersatz Oberfläche !

SCHULTERTOTALPROTHESE



ANFÄNGE DER SCHULTERPROTHETIK

- eingeführt 1951
- Charles Neer



ANFÄNGE DER SCHULTERPROTHETIK

- Prothese der 1. Generation



ANFÄNGE DER SCHULTERPROTHETIK

ARTICULAR REPLACEMENT FOR THE HUMERAL HEAD

217

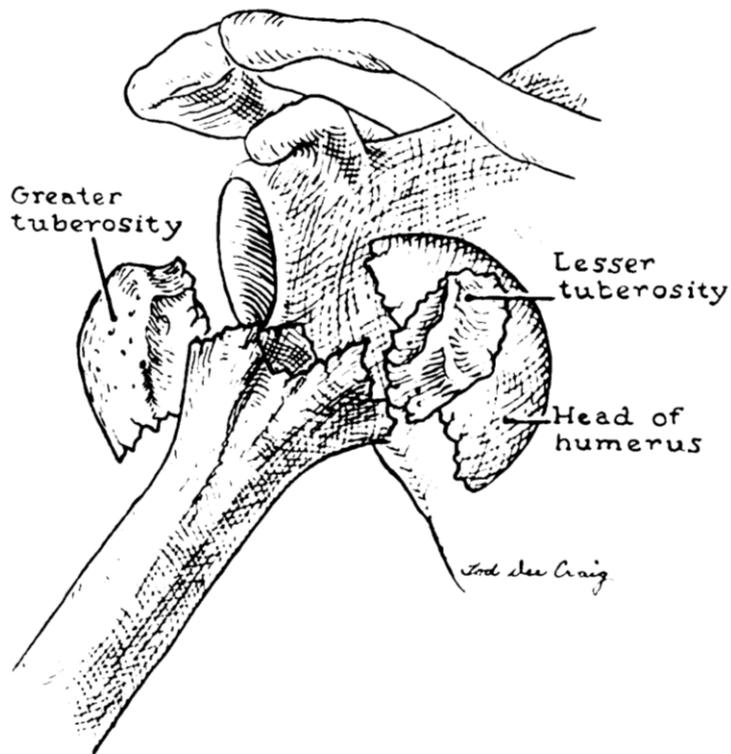
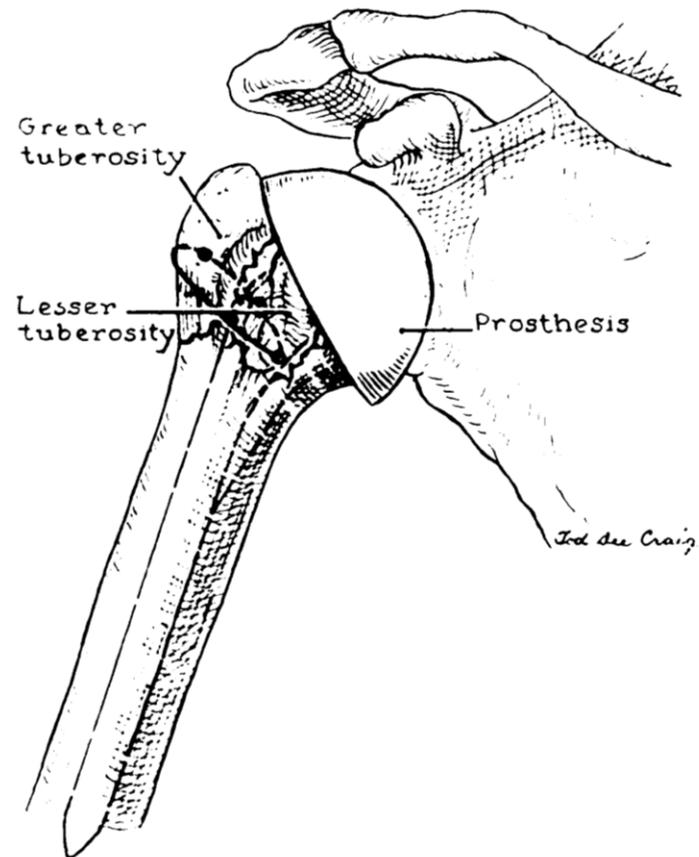


FIG. 2-A

Fig. 2-A: Drawing of a typical fracture-dislocation.



ANFÄNGE DER SCHULTERPROTHETIK

- Charles Neer
- Prothese der 2. Generation
- verschiedene Größen
- Pfannenersatz



ANFÄNGE DER SCHULTERPROTHETIK

- Charles Neer
- Prothese der 2. Generation
- verschiedene Größen
- Pfannenersatz



ANFÄNGE DER SCHULTERPROTHETIK

- Charles Neer
- Prothese der 2. Generation
- verschiedene Grössen
- Pfannenersatz



RESULTATE

NEER PROTHESE 2. GENERATION



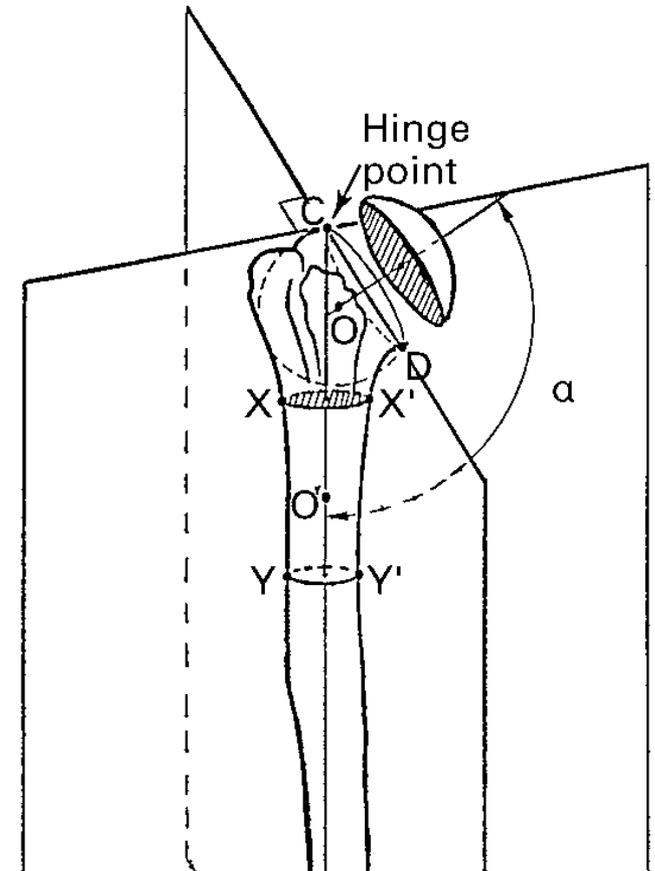
sehr gut	11%
unbefriedigend	48%
revidiert	18%

Sperling, JBJS 80A: 464, 1998

MODERNE SCHULTERTOTALPROTHESEN

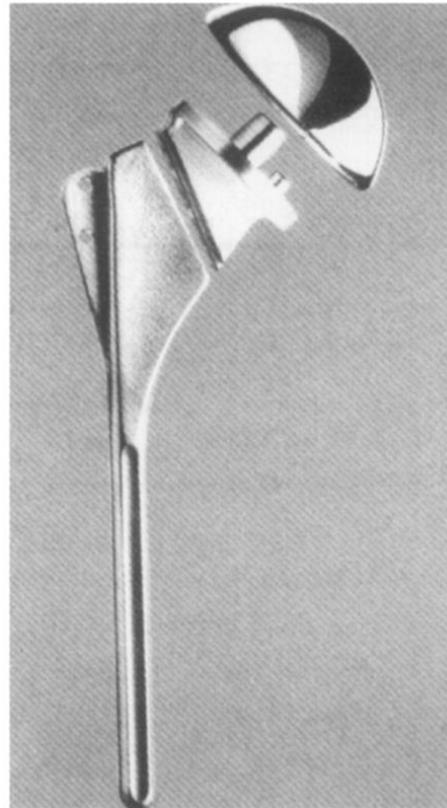
- exakte Anatomie des Oberarmkopfes

Boileau, Walch, JBJS Br 1995



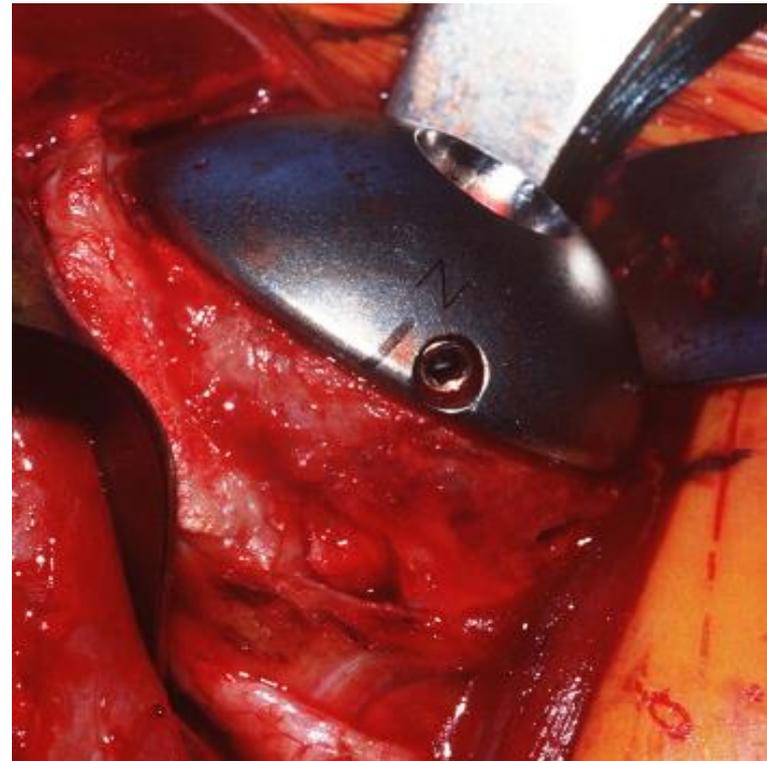
MODERNE SCHULTERTOTALPROTHESEN

- 3. Generation
- modulares System



Boileau, Walch, JBJS Br 1995

VARIABLER KOPF-SCHAFT WINKEL



3. Generation
Schultertotalprothese

MODERNE SCHULTERTOTALPROTHESEN

- 3. Generation
- modular –
anatomische
Rekonstruktion

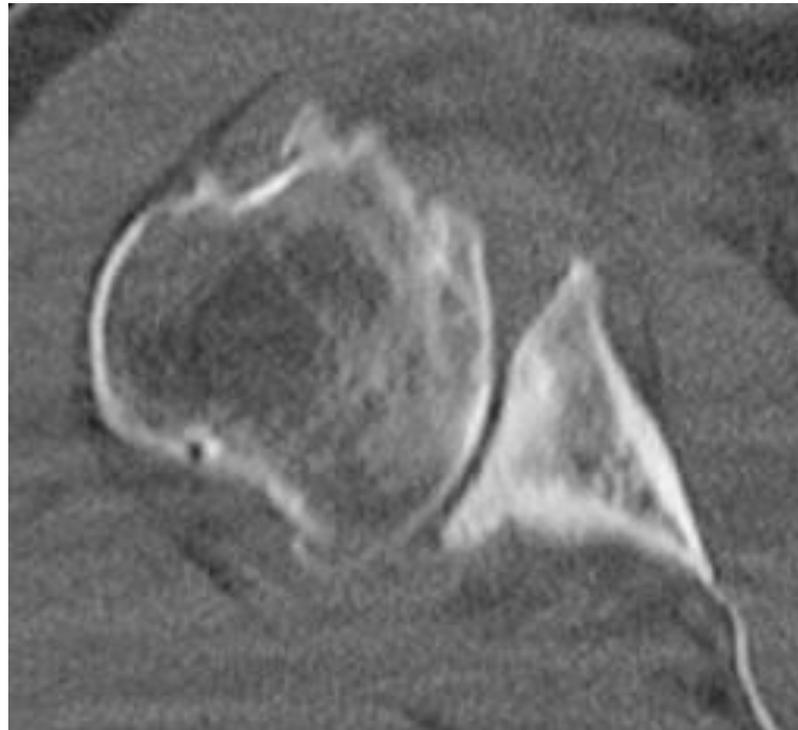


Boileau, Walch, JBJS Br 1995

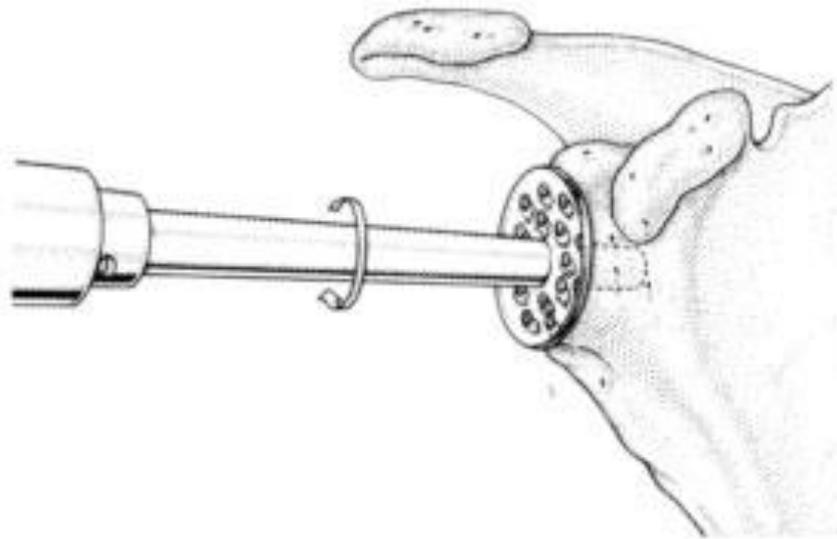
3. GENERATION SCHULTERTOTALPROTHESE



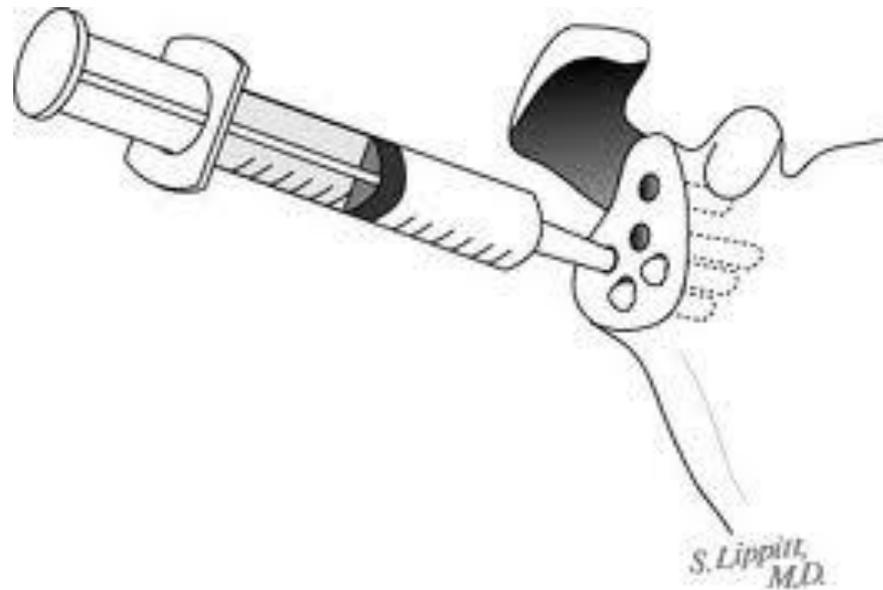
GELENKSPFANNE



GELENKSPFANNE



GELENKSPFANNE



KNOCHENZEMENT

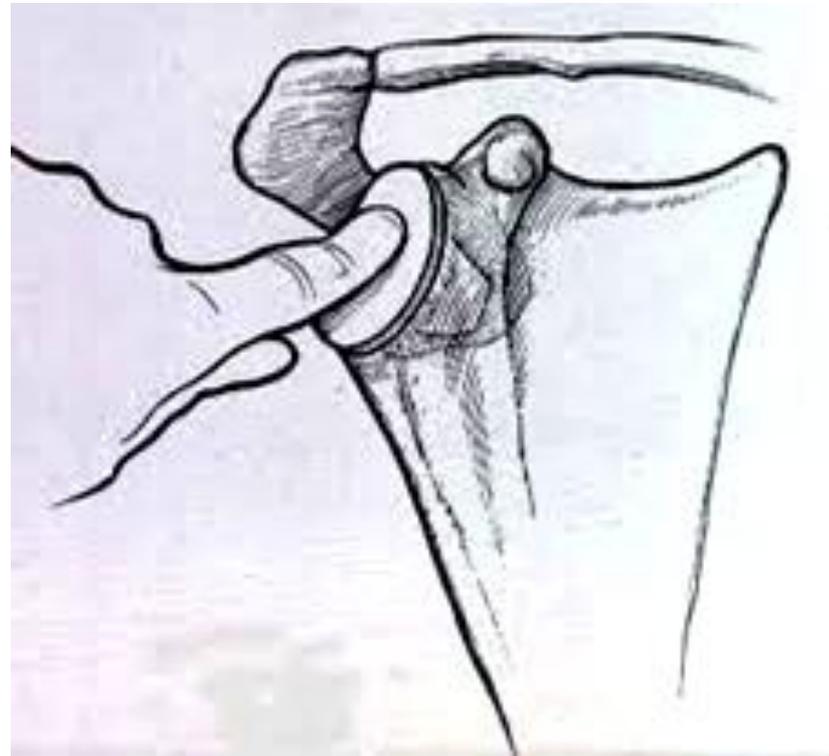
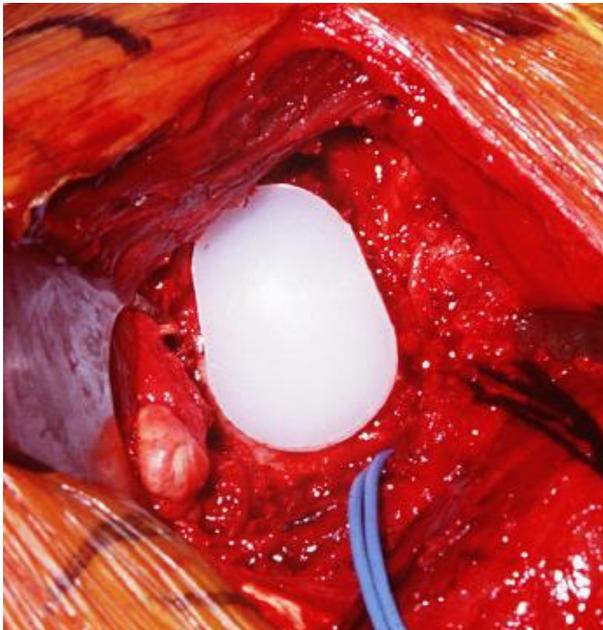
- **Prinzip
Zweikomponenten-
klebstoff**
- **Methylmetacrylat**



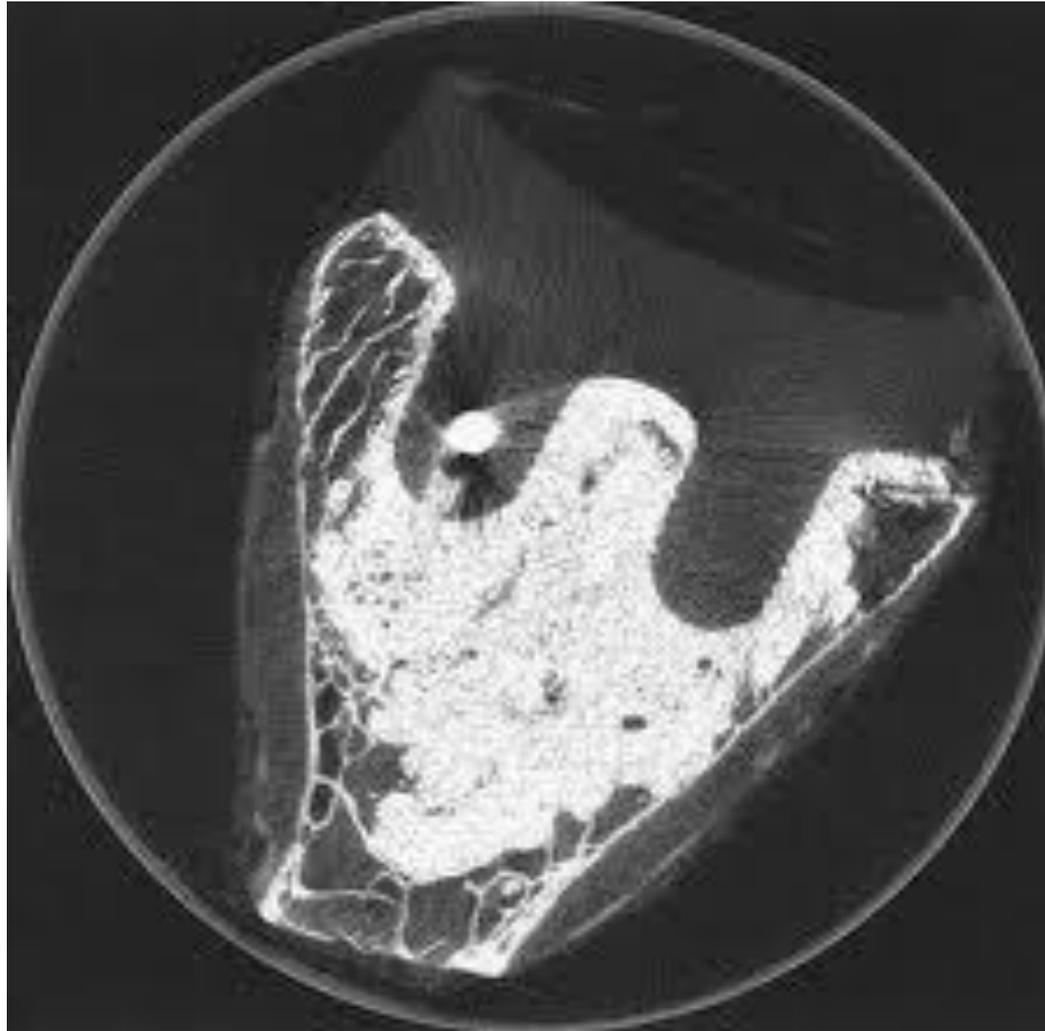
KNOCHENZEMENT



GELENKSPFANNE



GELENKSPFANNE



OBERARM

- zementiert / zementfrei
- Stahl / Titan
- Langschaft



OBERARM

- zementiert / zementfrei
- Stahl / Titan
- Langschaft
- Kurzschaft



OBERARM

- zementiert / zementfrei
- Stahl / Titan
- Langschaft
- Kurzschaft
- Schaftlos



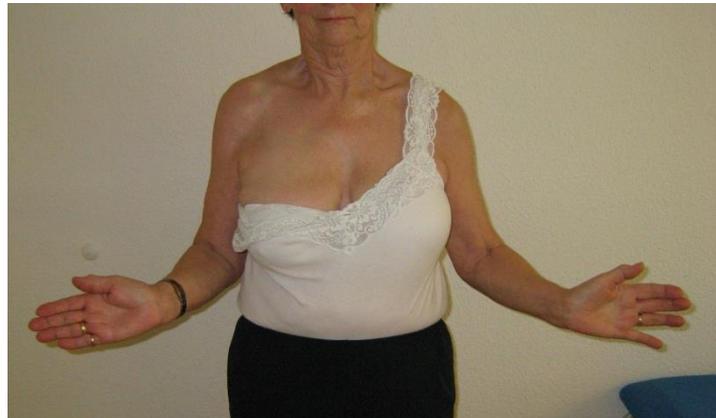
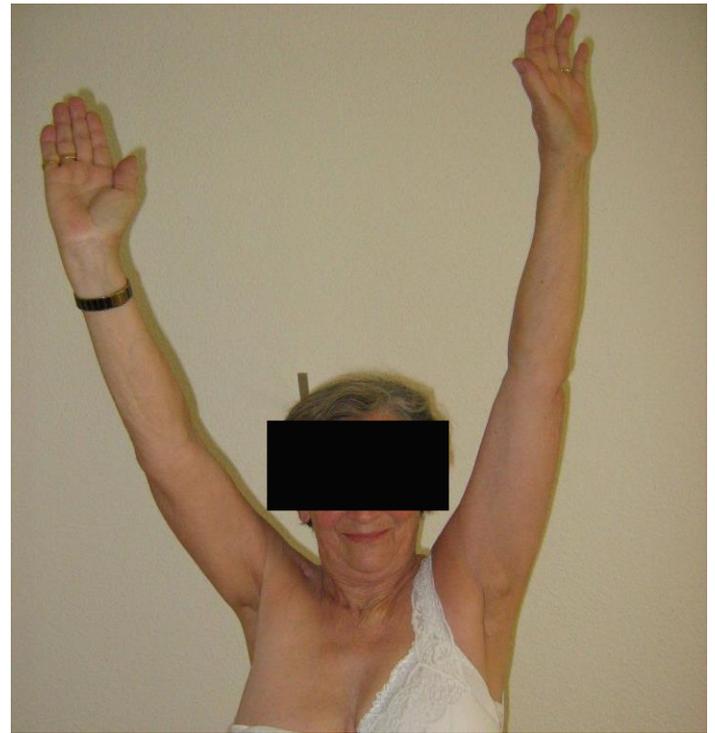
OBERARM

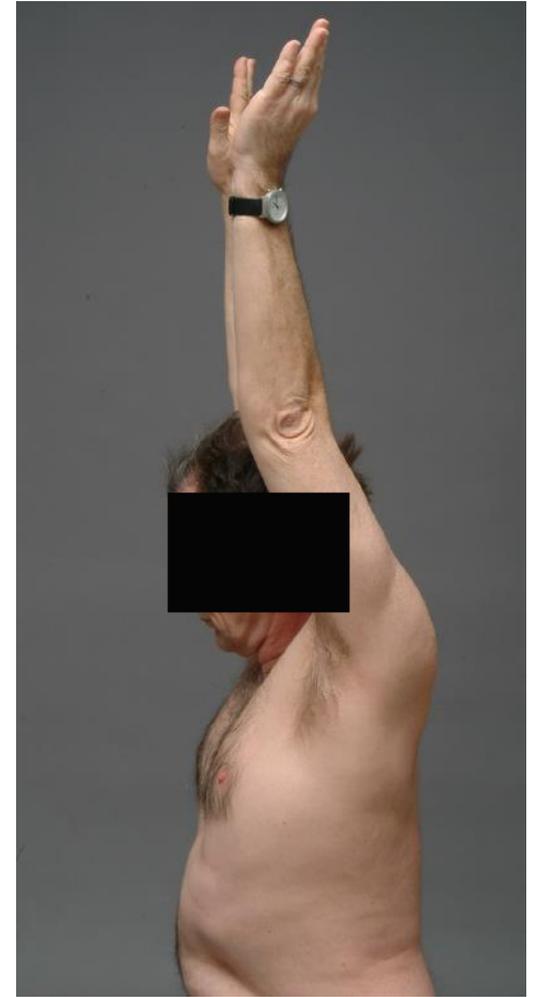
- zementiert / zementfrei
- Stahl / Titan
- Langschaft
- Kurzschaft
- Schaftlos

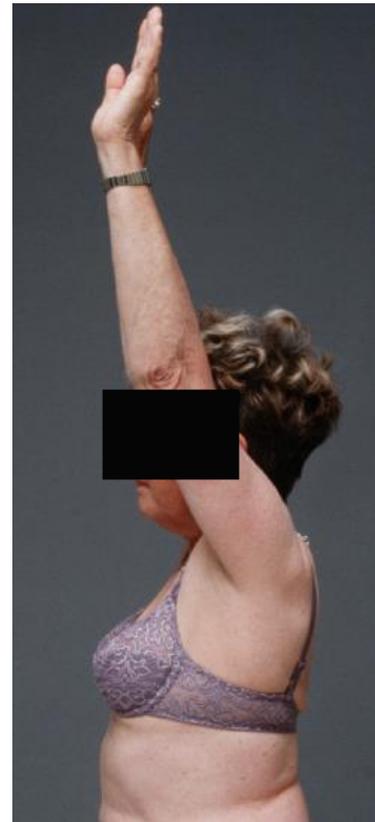


RESULTATE

3. GENERATION PROTHESEN







RESULTATE

sehr zufrieden / zufrieden	93%
unzufrieden	7%

Lafosse & Kempf, Sauramps, 2001

SPORT

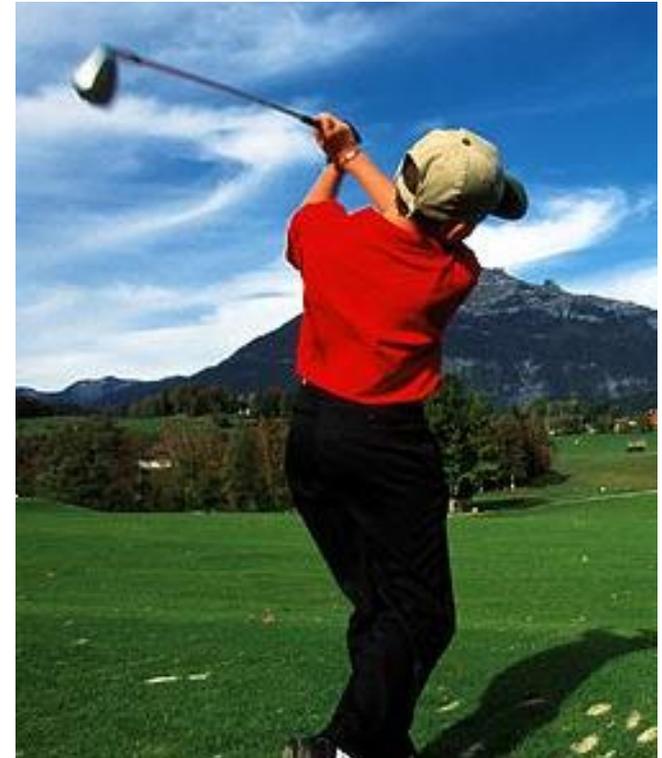
3. GENERATION PROTHESEN

Golf

77% - 96%

Jensen, JSES, 1998

McCarty, Am J Sports Med, 2008



SPORT

3. GENERATION PROTHESEN

Tennis

75%

McCarty, Am J Sports Med, 2008



SPORT

3. GENERATION PROTHESEN

Schwimmen

86%

McCarty, Am J Sports Med, 2008



SPORT

3. GENERATION PROTHESEN

Skifahren

81%

McCarty, Am J Sports Med, 2008



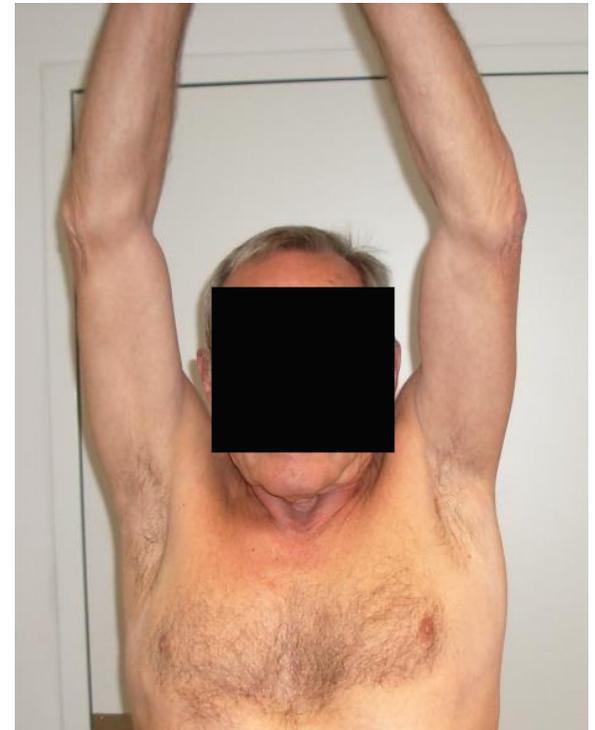
LEBENSDAUER ANATOMISCHE PROTHESE



LEBENSDAUER ANATOMISCHE PROTHESE

**Funktionsstüchtige
Prothesen in:**

90 % nach 10 Jahren



LEBENSDAUER ANATOMISCHE PROTHESE

Funktionsstüchtige
Prothesen in:

90 % nach 10 Jahren

81 % nach 20 Jahren



LEBENSDAUER ANATOMISCHE PROTHESE

Tiefer bei:

LEBENSDAUER

ANATOMISCHE PROTHESE

Tiefer bei:

- **Männer**
- **Patienten jünger als 60 Jahre**

LEBENSDAUER ANATOMISCHE PROTHESE

Tiefer bei:

- **Männer**
- **Patienten jünger als 60 Jahre**



LEBENSDAUER ANATOMISCHE PROTHESE

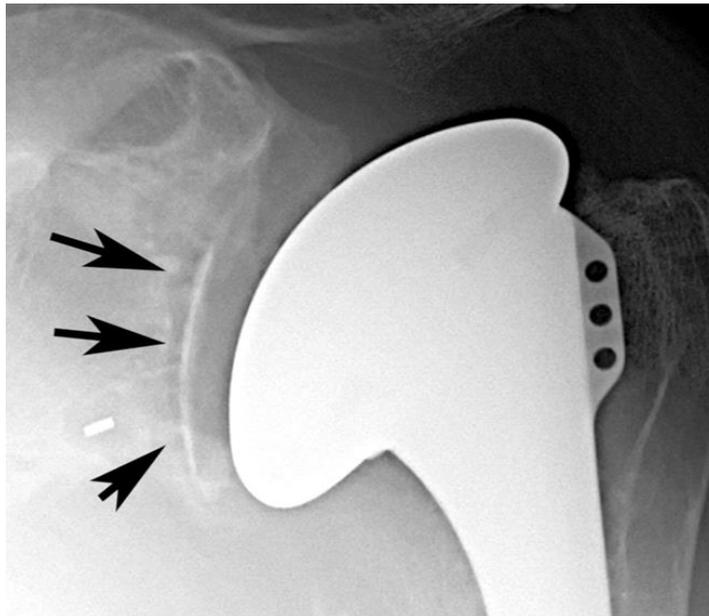
Limitiert:

- **Lockerungen**
- **Sekundäre Sehnenrisse**

LOCKERUNG

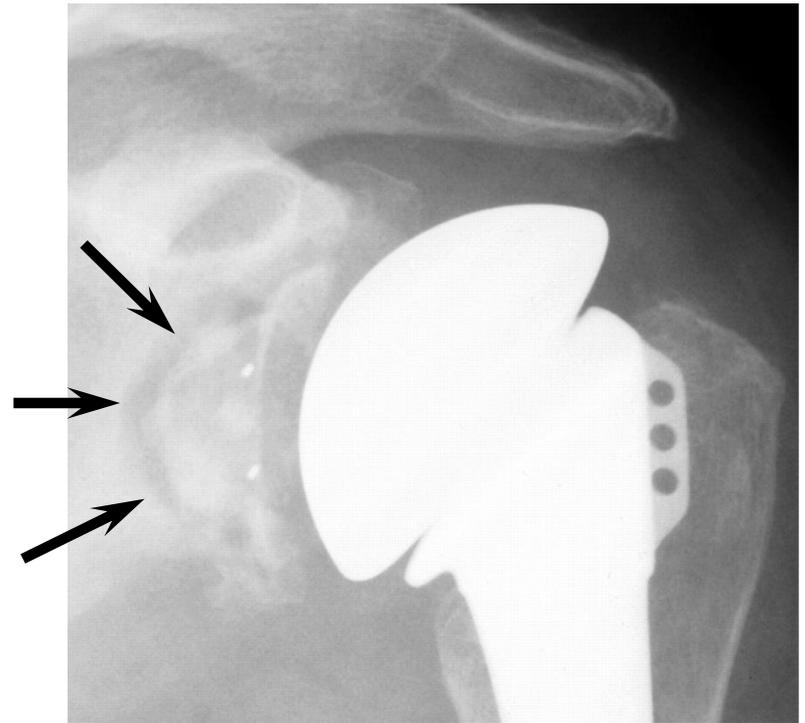
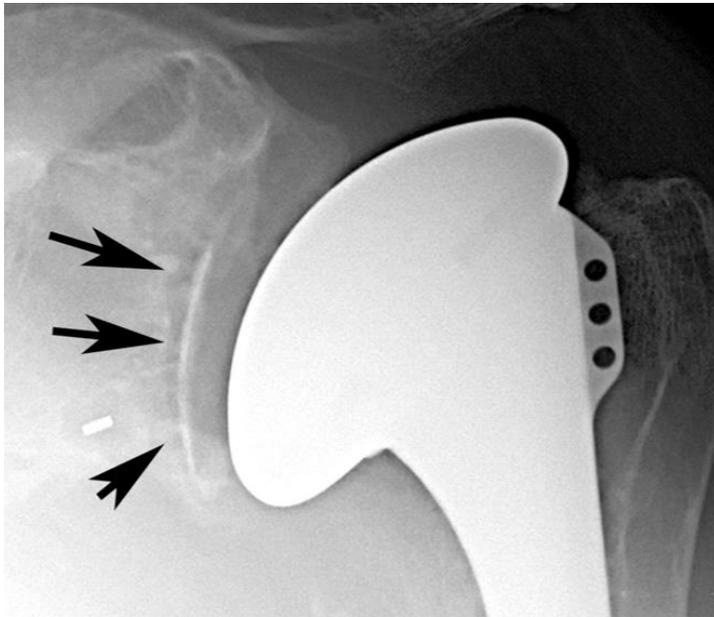
Pfanne:

- Lockerungszeichen bei 40% der Patienten nach 10 Jahren



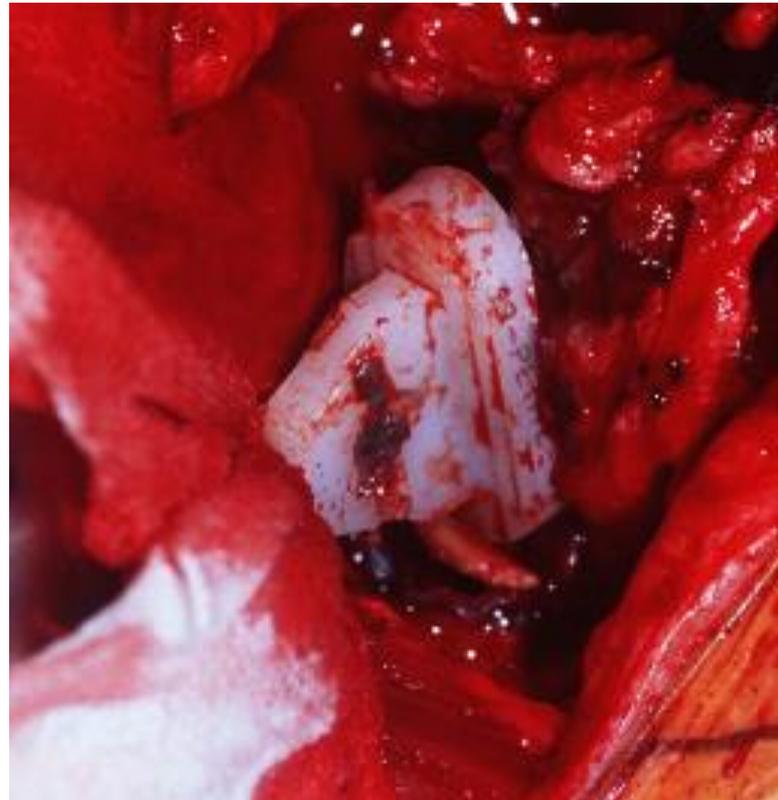
LOCKERUNG

Pfannenlockerung:



LOCKERUNG

- **Stark lockere Pfannen können schmerzhaft sein**

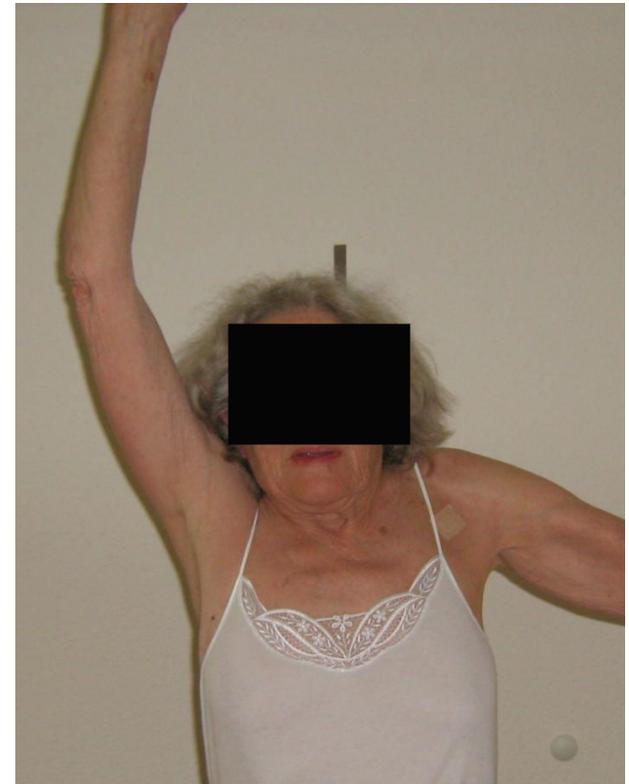


SYMPTOME

- Rotatorenmanschettenruptur
- Lockerung

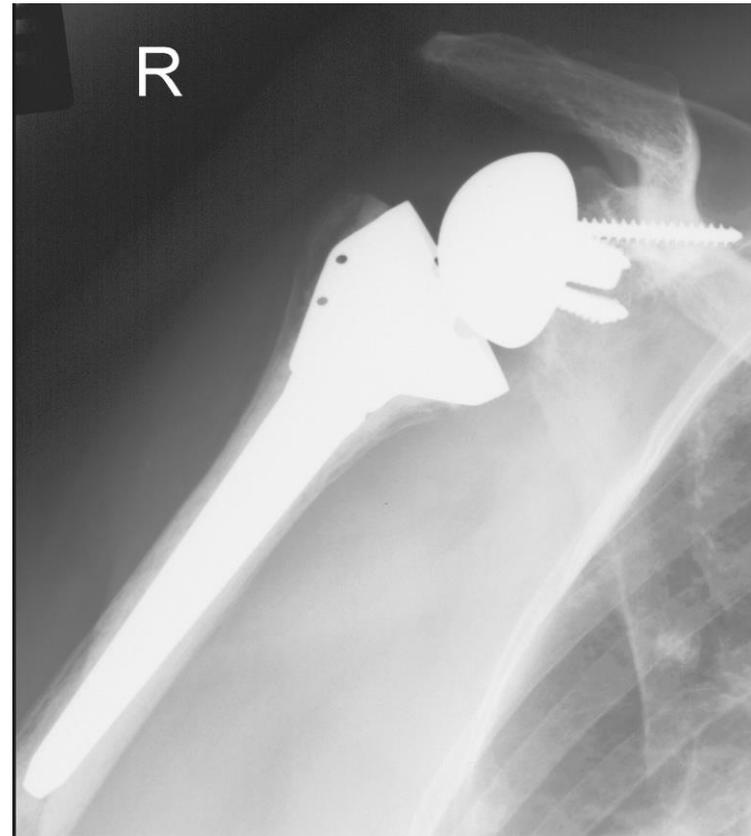
Schmerzen

Funktionseinbusse



INVERSE SCHULTERTOTALPROTHESE

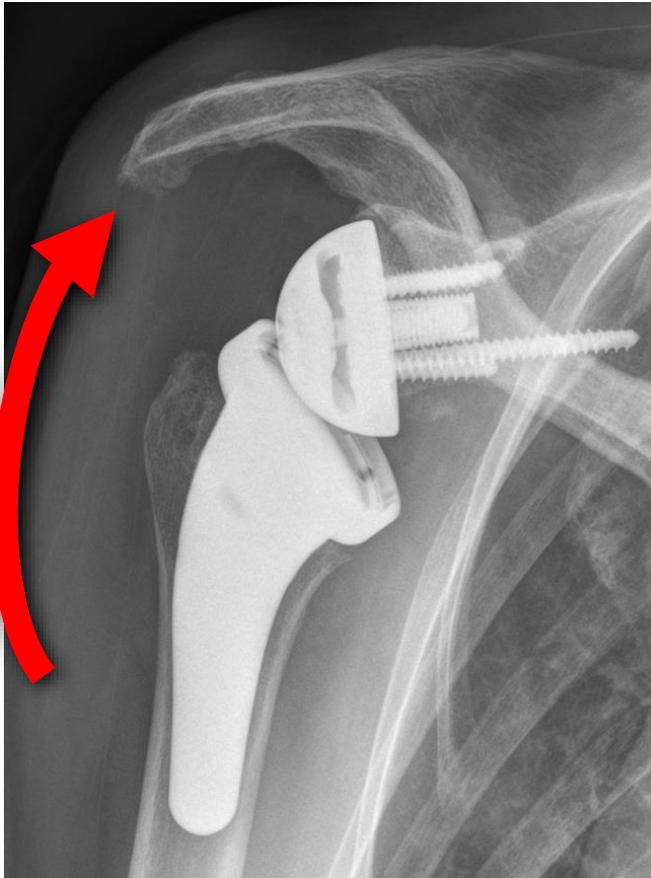
eingeführt 1991



ROTATORENMANSCHETTEN-RUPTUR



INVERSE SCHULTERPROTHESE

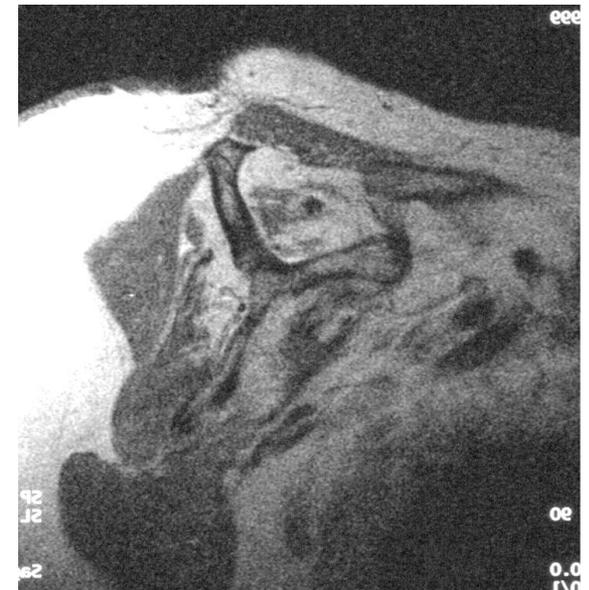


INVERSE SCHULTERPROTHESE

- einfache Nachbehandlung
 - Schlinge für 4 Wochen



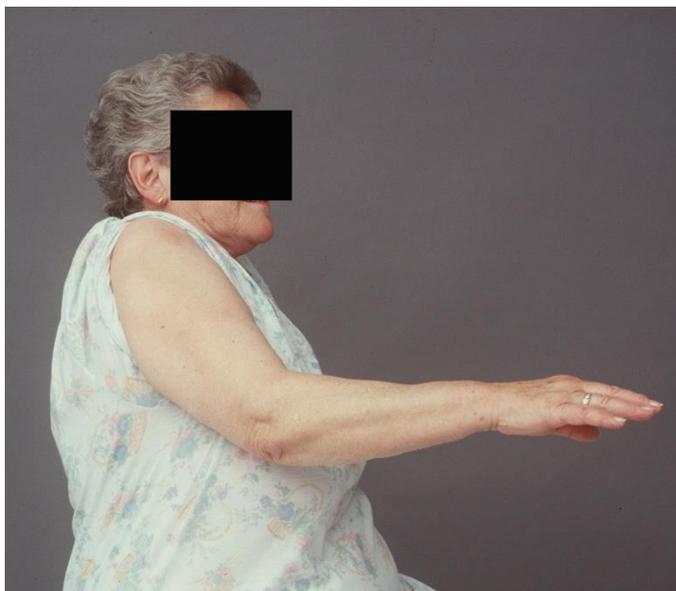
IRREPARABLE ROTATORENMANSCHETTENRISSE



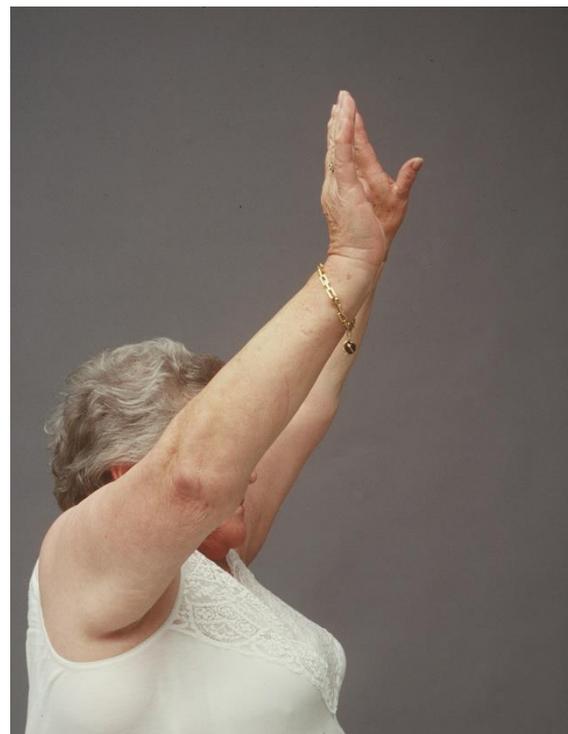
INVERSE SCHULTERPROTHESE



BEWEGUNGSAUSMASS



vorher

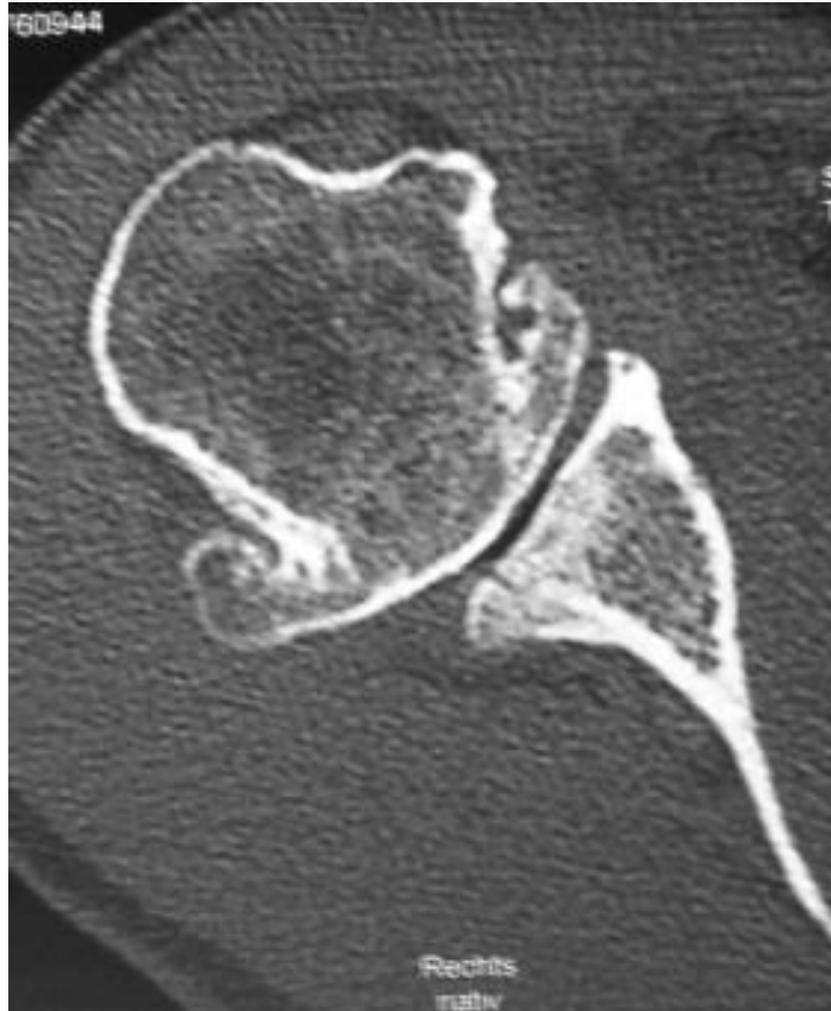


nachher

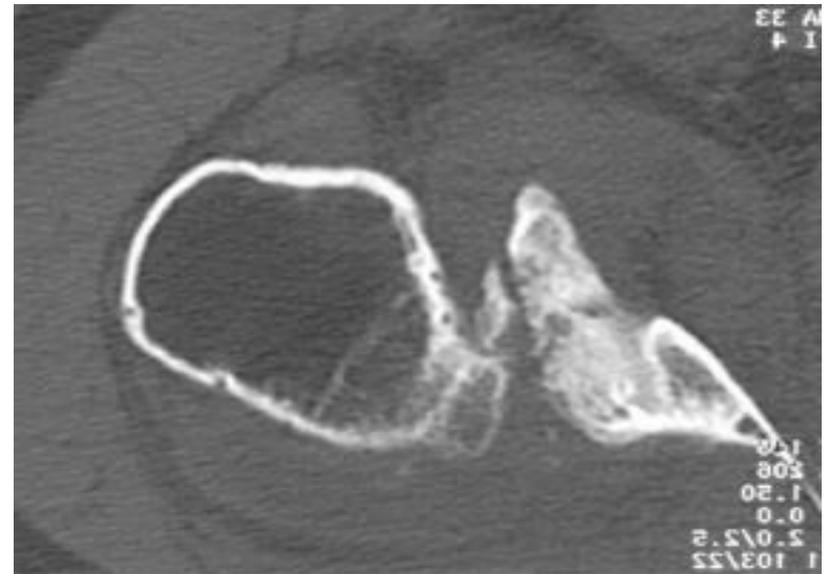
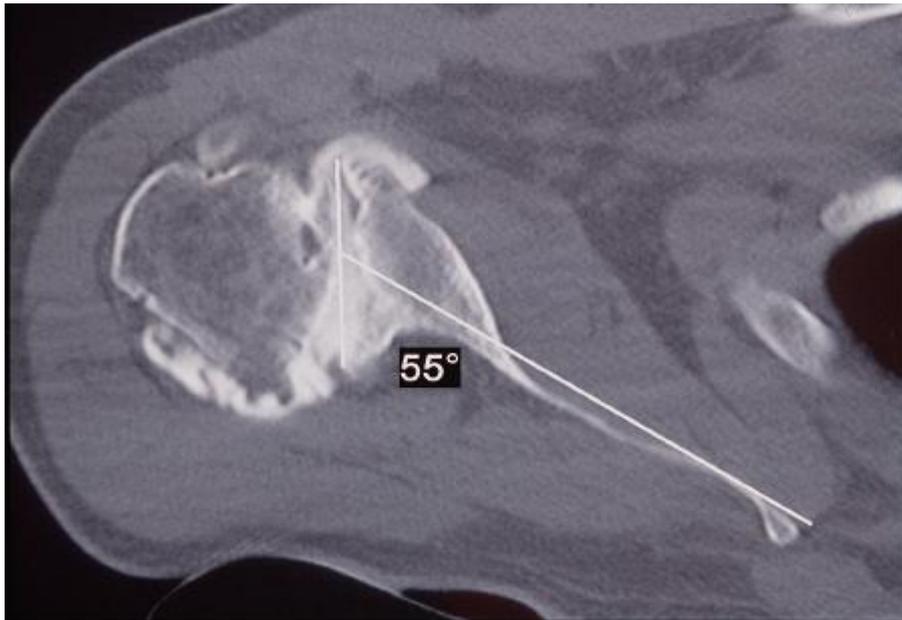
INVERSE SCHULTERPROTHESE



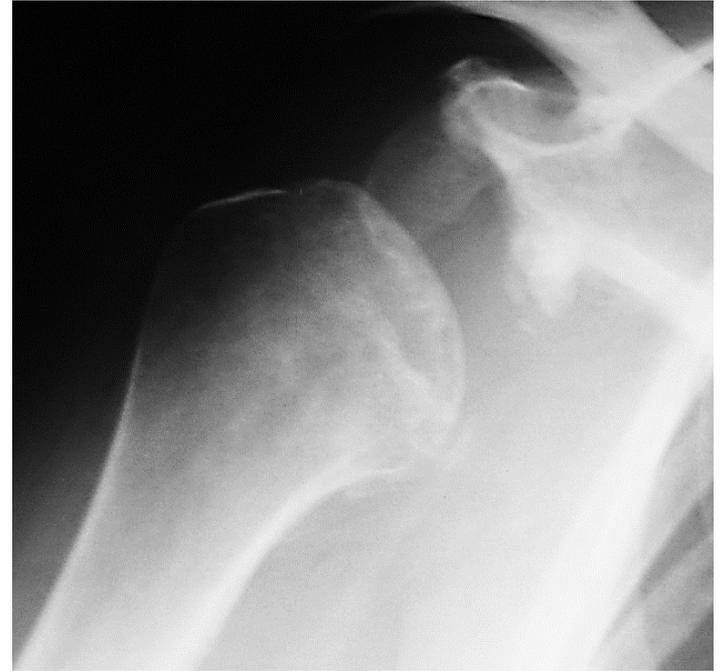
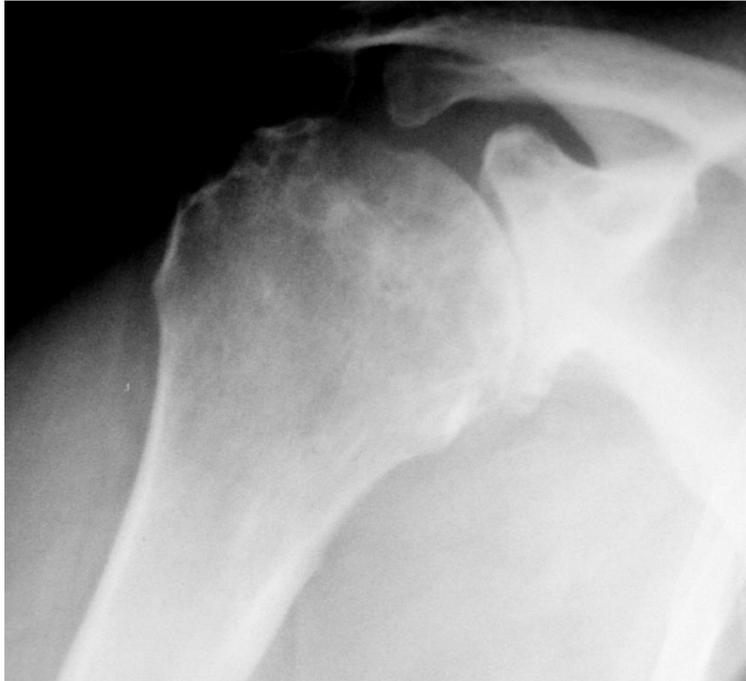
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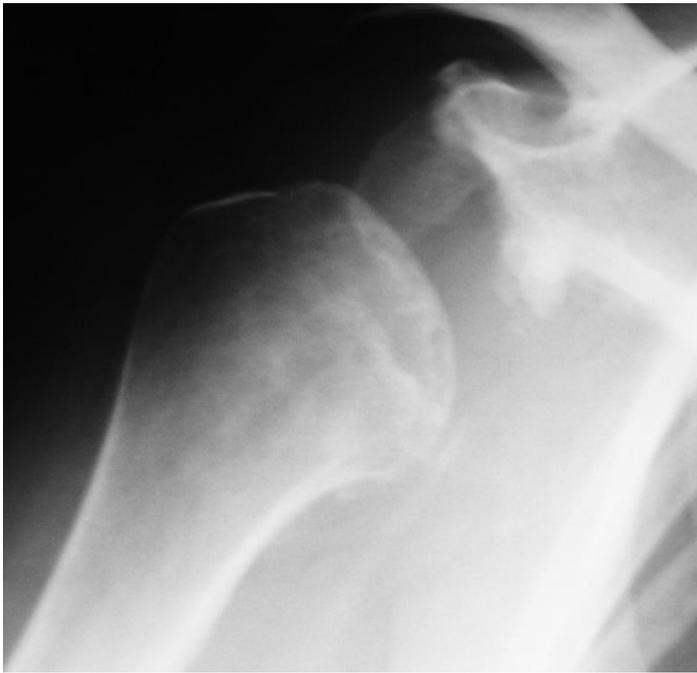
PFANNE



PFANNENDESTRUKTION



PFANNENDESTRUKTION



INVERSE SCHULTERTOTALPROTHESE

82-jähriger Patient:



INVERSE SCHULTERTOTALPROTHESE

82-jähriger Patient:



INVERSE SCHULTERTOTALPROTHESE

82-jähriger Patient:

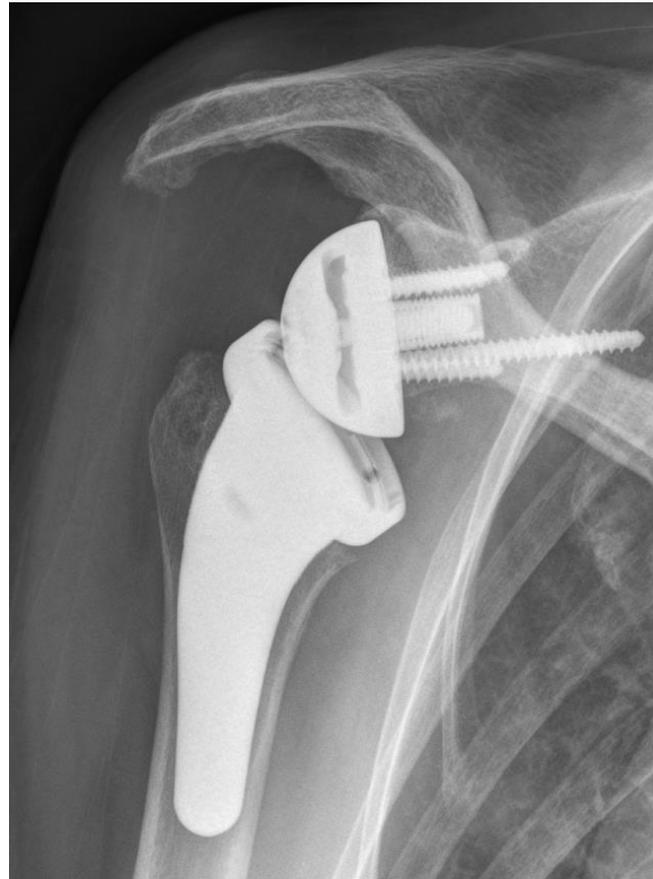


INVERSE SCHULTERTOTALPROTHESE

82-jähriger Patient:



LEBENSDAUER INVERSE SCHULTERTOTALPROTHESE



INVERSE SCHULTERTOTALPROTHESE

Lebensdauer

91%

10 Jahren

Guery Am JBJS, 2006

BEHANDLUNG

Prothesenversager

?

BEHANDLUNG

- Rotatorenmanschettenruptur
bei anatomischer Prothese

Wechsel auf inverse Prothese



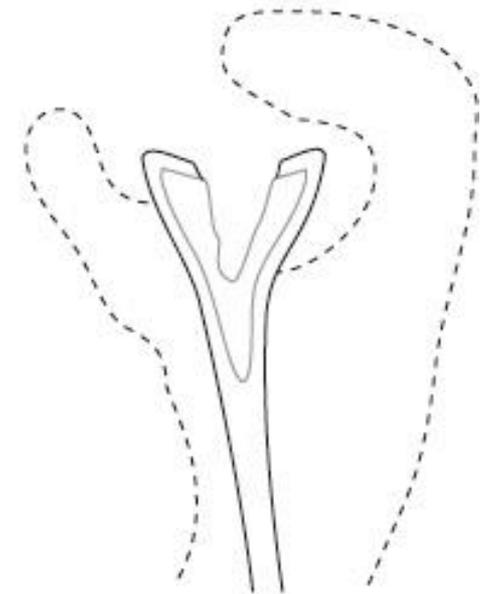
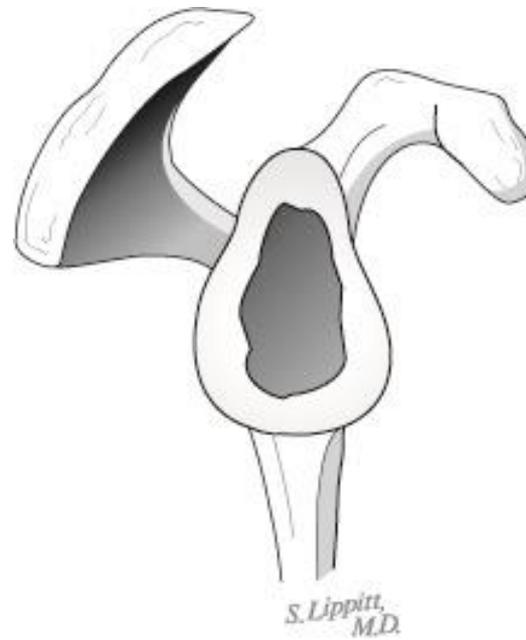
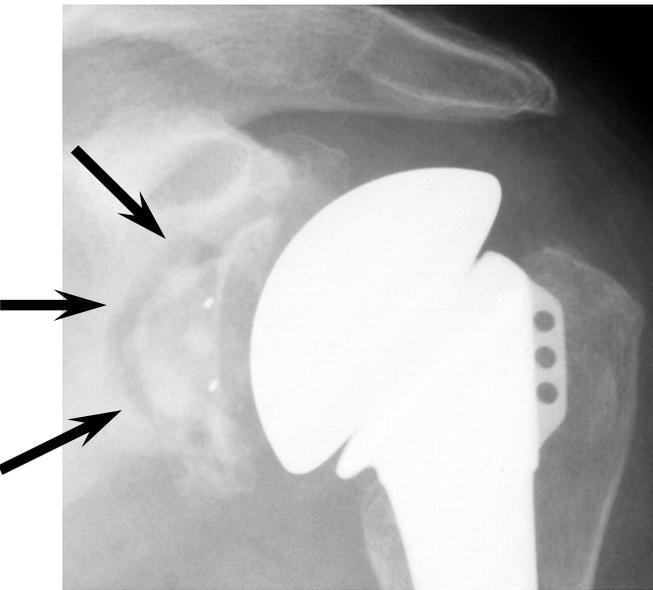


BEHANDLUNG

- Pfannenlockerung bei anatomischer Prothese

Pfannenwechsel auf inverse Prothese

PFANNENWECHSEL

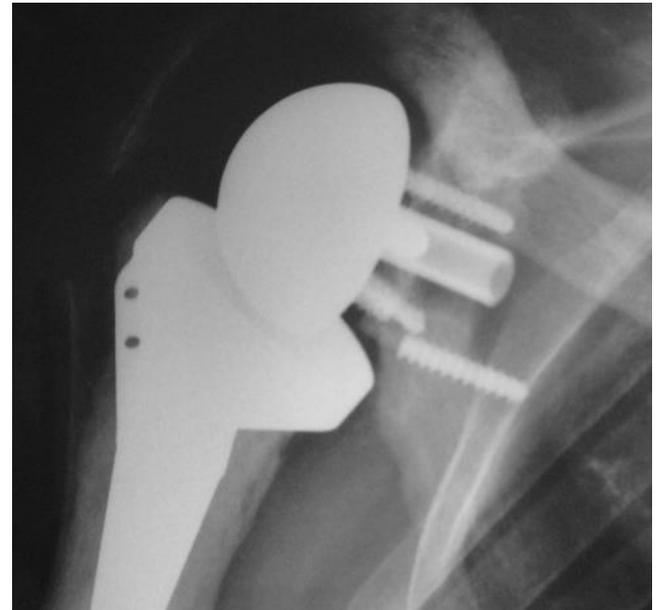


PFANNENWECHSEL AUF INVERSE PROTHESE



BEHANDLUNG

- Pfannenlockerung bei inverser Prothese



BEHANDLUNG

- Pfannenlockerung bei inverser Prothese



INVERSE SCHULTERTOTALPROTHESE

66-jähriger Mann

- Linke Schulter
 - 4 Voroperationen
- Rechte Schulter
 - 3 Voroperationen

INVERSE SCHULTERTOTALPROTHESE



6 Wochen nach OP



4 Monate nach OP

ZUSAMMENFASSUNG

ANATOMISCHE PROTHESEN BEI ARTHROSE MIT INTAKTER ROTATORENMANSCHETTE



ANATOMISCHE PROTHESE



INVERSE PROTHESEN BEI INSUFFIZIENTER ROTATORENMANSCHETTE



VIELEN DANK

