REVERSE SHOULDER REPLACEMENT

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PTA 236 Seminar II
Presentation
Anatomy of the Shoulder

- Four Articulations
  - Sternum/Clavicle/Humerus/Scapula

- Three Synovial Joints
  - Acromioclavicular
  - Sternoclavicular
  - Glenohumeral
Glenohumeral Joint

- Glenohumeral Joint
  - Ball and Socket Joint
    - Proximal Head of Humerus
    - Glenoid Cavity of the Scapula

- Glenohumeral Movements
  - Abduction/Adduction
  - Flexion/Extension
  - Internal/External Rotation
Glenohumeral Joint

- **Rotator Cuff**
  - Group of Muscles
    - Supraspinatus
    - Infraspinatus
    - Teres Minor
    - Subscapularus
  - Stabilize the shoulder Joint
  - Holds the humerus head in the glenoid cavity

- **Cartilage**
  - Articular Cartilage
  - Labrum
Types of Shoulder Replacements

• Total Shoulder Replacement
  • polished metal ball attached to a stem and a plastic socket

• Hemiarthroplasty
  • Partial prosthesis replacement

• Reversed Shoulder Replacement
  • convex surface is fixed to the glenoid and a concave surface is fixed to the proximal humerus
  • metal ball attached to the shoulder bone and a plastic socket attached to the upper arm bone
Types of Shoulder Replacements

- Reversed Shoulder Replacement
- Shoulder Replacement
Candidates for Reverse Shoulder Replacement

- Osteoarthritis
  - Older people
  - Chronic pain and stiffness
  - Lack of mobility and function of the shoulder
- Rheumatoid Arthritis
- Severe fracture
- Rotator Cuff Tear Arthropathy
  - Weakened and degenerated muscles
  - No longer offer stability to the shoulder
  - Unrepairable
- Failed Previous Shoulder Replacements
Reversed Shoulder Replacement Mechanics

• Changes the Mechanics of the shoulder
  • Moves joint’s center of rotation medially and inferiorly
• Deltoid muscle has an increased advantage
  • Through tension and torque
• Deltoid muscle becomes the primary
• Ability to elevate arm higher and possibly overhead
Deltoid Mechanics
Rehabilitation

• Three Key Components
  • Joint Protection
  • Deltoid Strengthening
  • Overall Shoulder Function
Rehabilitation Phase I: Post-Op–6wks

- **Joint Protection**
  - Dislocations (Patient Education)
    - Avoid Internal Rotation/Extension/Adduction
      - Tucking in shirt
      - Bathroom hygiene
  
- **Passive Range of Motion**
  - Supine
    - Flexion Scaption 90 degrees
    - External rotation 20-30 degrees

- **Active/Active Assisted ROM**
  - Cervical Spine, Elbow, wrist and hand

- **Cryotherapy**

- **Bracing**
Rehabilitation Phase II: Weeks 6-12

- Joint Precautions
- Bracing discontinued per physician
- Progress PROM to AAROM and AROM
- Exercises Supine - Progress to Sitting and Standing (Lawn Chair Technique)
- Isometric Progressed to Isotonic Strengthening
  - Periscapular Muscles and Deltoid Muscles
  - Avoiding posterior deltoid and extension
- Glenohumeral Joint Mobilizations (Grade I and II)
Rehabilitation Phase III: Weeks 12 – D/C

- Initiate Internal Rotation behind Back
- Enhance Functional Use
- Muscular Strengthening and Endurance
  - Progressive Resistive Exercises
    - Low Weight with High Repetition
    - Delorme’s Principal
      - start with low weights
      - increase weight with each repetition
  - Sidelying Exercises
  - Resistive Therabands
- Home Exercise Program
Assessment Tools

- Disability of Arm, Shoulder and Hand (DASH) Assessment
- Active Range of Motion Measurements
- Manual Muscle Testing
For More Topic Information


- REVERSE SHOULDER PROSTHESIS FOR GLENOHUMERAL ARTHRITIS ASSOCIATED WITH SEVERE ROTATOR CUFF DEFICIENCY: A MINIMUM TWO-YEAR FOLLOW-UP STUDY OF SIXTY PATIENTS Frankle, Mark; Siegal, Steven; Pupello, Derek; Saleem, Arif; et al. Journal of Bone and Joint Surgery 87. 8 (Aug 2005): 1697-705.

References


