RADIAL NERVE PALSY

• Most frequently injured of the three peripheral nerves in the upper extremity
• The most common cause of radial nerve palsy
  • Direct trauma
  • Humeral fracture
  • Elbow dislocation
  • Direct pressure
  • Axilla pressure
  • Other potential factors

RADIAL NERVE PALSY (CONT.)

• Signs of radial nerve palsy
  • “wrist-drop deformity”
  • Inability to extend wrist
  • Loss of digit extension at the metacarpophalangeal joints (MCP)
  • Inability to extend and abduct the thumb
BIOMECHANICS

- Functional impairments to the hand are significant
  - Imbalance of intrinsic and extrinsic musculature
  - Decreased reciprocal tenodesis grasp
  - Spontaneous recovery

SPLINTING FOR RADIAL NERVE PALSY

- Splinting during the recovery period has the potential of establishing almost normal functional use of the hand (Colditz, 1984)
- Ideal brace
  - Recreate consistency of tenodesis action
    - Finger extension with wrist flexion
    - Wrist extension with finger flexion

VARIOUS COMBINATIONS

- Low profile & Effective during daily routine
  - Functional, comfortable wrist position
  - Partial sensory input can be achieved
  - Aides in digit extension
  - Light-weight, durable, and easy to don/doff

LOW PROFILE ORTHOSIS

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QUICK, EASY, AFFORDABLE

- 1” hook Velcro – 6in long
  - Make a horizontal slit at 1.25in from the end to be able to attach the Velcro strip to the D-ring
  - Attach finger loops to rubber bands
  - Loop rubber bands around D-ring
- Place loops on digits
- Attach the Velcro strip to the dorsal aspect of the wrist cock-up
  - Place Velcro strip with appropriate tension to achieve a good tenodesis grip pattern of fingers and thumb

CONCLUSION

- Occupational therapy and education in the treatment of radial nerve palsy can significantly improve an individual’s functional independence
- Splinting following an injury to the radial nerve is necessary
  - Recommended to improve tenodesis pattern of the hand during recovery phase
- Various splint designs
  - The new low profile orthosis presented today is a great alternative to use for patients experiencing radial nerve palsy