Upper Extremity Outcomes in Orthopaedic Trauma
Presenter: Peter A. Cole, MD

Part I: Patient Reported Outcome (PRO) Tools

- **Global Health Outcome Tools**
  - **EQ-5D Score**
    - Self-reported tool used to quantify health-related quality of life
      - 5 domains
        - Mobility, self-care, usual activities, pain/discomfort, and anxiety/depression
    - Free of charge
  - **PROMIS Global 10 Score**
    - Abbreviated PRO to assess general health
    - Newest of the validated tools
    - Can be converted to T-Score metric for comparison to norms
    - Proven reliable and sensitive
    - Free of charge
  - **Short Form 36 Score (SF-36)**
    - Widely used for 20+ years
    - Proven to differentiate health benefits associated with a broad range of treatment modalities
    - SF-12 is an abbreviated version that is available
    - As these are general health assessments, pairing with specific tools are recommended
    - Requires license

- **Upper Extremity and Shoulder Outcome Tools**
  - **ASES Shoulder Score**
    - Created to standardize shoulder function
    - Valid and reliable
    - Physician and patient components can be time consuming
    - Free to use
  - **DASH Score**
    - Composite score represents abilities of bilateral upper extremities
    - Validated in multiple languages
    - Correlates well with SF-36
    - License required
  - **Constant-Murley Score (CMS)**
    - Commonly used
    - Combines self-reported functional disability scores with physical impairment (ROM and strength) scores
    - Limited validation
    - Free to use
  - **Oxford Shoulder Score**
    - Shoulder specific tool used to assess outcome of all shoulder surgeries
    - Sensitive to shoulder disability with minimal effect from other co-morbidities
    - Correlates well with SF-36
    - Does not assess shoulder instability
    - Permission to use this tool may be acquired from healthoutcomes@isis.ox.ac.uk
Part II: Available Literature (Table of References)

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*Abundant Level III evidence exists for these injuries
** Level I evidence is not yet available for this injury

References

Clavicle

**Level I**

1. Ahrens, Philip M.; Garlick, Nicholas I.; Barber, Julie; Tims, Emily M.. The Clavicle Trial Collaborative Group The Clavicle Trial: A Multicenter Randomized Controlled Trial Comparing Operative with Nonoperative Treatment of Displaced Midshaft Clavicle Fractures. J Bone Joint Surg Am. 16 August 2017

**Level II**


Acromioclavicular Joint

**Level I**

Level II

Scapula
Level II

Level III

Proximal Humerus
Level I

Level II

Humeral Shaft
Level I

Level II

Olecranon/Radial Head
Level I

Level II

Distal Radius
Level I

Level II
Part III: Personal Experience in Upper Extremity Condition Specific Research Study and Programmatic Implementation

- *The Road Less Traveled – A Timeline to Scapula Institute Development*

- **1999**
  - Indications defined
  - Personal collection of shoulder strength, motion, and DASH measurements at regularly scheduled patient follow-up
  - Hard-copy data collection

- **2002**
  - Institution transfer
    - 39 patients
    - MS to MN

- **2005**
  - 2 new positions developed to assist with data collection and entry into outcomes database:
    - Research Assistant
      - Maintain patient follow-up
      - Data collection / Data entry
      - Study design, data acquisition, analysis and interpretation of data, authoring manuscript
    - Research fellow
      - Study design, data acquisition, analysis and interpretation of data, authoring manuscript
      - Assist with resident/fellow research within the department.
      - Create educational materials and video/photo resources
      - Assist with data collection

- **2007**
  - 1st Research Director
    - Organizational leadership, grant writing/acquisition
    - Administration of research team and funding

- **2012**
  - Institute Website for Patient/Clinician Information

- **2014**
  - Transfer from outcomes database to REDCap
  - Expand single site registry into a funded national consortium
2016
- Implementation of graph tools to track progress and educate/encourage patients
- North America Site expansion

2017
- Planning phase for expansion to INTERNATIONAL partners
- Preparation of the 1st Masters Scapula Surgical Skills course to take place in April, 2018

Comparison of 2 Versus 3 Dimensional Fracture Mapping Strategies for 3 Dimensional Computerized Tomography Reconstructions of Scapula Neck and Body Fractures

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