The Economics of Proximal Humerus Fractures
What we Should Know

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Disclosure

• I receive royalties from Exactech for design of a shoulder arthroplasty system

• I serve on the Boards/Advisory Boards of Hip Innovation Technology, J3 Personica-Residency Select, Gold Humanism Foundation, Apostherapy and the Musculoskeletal Transplant Foundation

Proximal Humerus Fractures: Treatment Options
Things We Should Know - ideally

1. Incidence of proximal humeral fractures
2. Trends in treatment
3. Outcomes of treatment
4. Costs of treatment
5. Understand the health care burden

Is the incidence increasing?

- New York State Data: 1990 to 2010

1990 = 15.35 per 100,000
2010 = 19.4 per 100,000

26% increase

Trends in treatment

- Treatment: 1990 2001 2010
  ORIF  58% 46% 59%*LP
  HA  27% 41% 29%
  TSA  6.4% 1.5% 7.5%*RTSA

40% increase operative mgmt.

Trends in treatment
- Medicare database: 2009-2012
- 32,150 fx treated operatively
- % treated operatively: 16.2% to 13.9%
- HA: 52% to 39%
- RTSA: 11% to 28%
- ORIF: no change

Trends in Treatment
- Medicare data
  - 259,306 fx's
  - 67% nonop
  - TSA: 3% to 17%
Outcomes of Treatment; Level 1 Studies

1. Nonop vs. ORIF for 3 part: ORIF
2. Nonop vs. HA for 4 part: HA
3. HA vs. RTSA for complex Fxs: RTSA

However….. The PROPER study….

Surgical vs Nonsurgical Treatment of Adults With Displaced Fractures of the Proximal Humerus
The PROPER Randomized Clinical Trial

• 250 patients with SN fxs randomized to nonop, ORIF or HA

• CONCLUSIONS: Among patients with displaced proximal humeral fractures involving the surgical neck, there was no significant difference between surgical treatment compared with nonsurgical treatment in patient-reported clinical outcomes over 2 years following fracture occurrence. These results do not support the trend of increased surgery for patients with displaced fractures of the proximal humerus.

Cost: Complicated Issue

• Direct costs: Easy (sort of)

• Indirect costs: More difficult
  - time lost from work
  - loss of productivity
  - spouse/partner impact
Do the outcomes justify the (increased) costs?

• Three procedures
  - ORIF
  - HA
  - RTSA

• Using CMS models

CMS DRG Payments to Hospitals: Factors

• Payments can vary significantly based upon:
  1. Location (tied to wage data)
  2. Teaching vs. Non-teaching
  3. Urban vs. Rural
  4. Previous cost data

...... unfortunately the cost of the implants may vary in a reciprocal manner

CMS - ORIF - NYULMC

• Amb. Surgery: $4,726
• Inpatient w/o cc: $14,918
• Cost of plate and screws: List - $4800
  ASP - $2700
• Bone augmentation: ??
• Reasonable economics if not done as amb.
  surg. procedure
Shoulder Arthroplasty: CMS

- DRG 484 w/o cc
  - NY: $18,047
  - NV: $15,102
  - AL: $11,574 (lowest)
  - MD: $23,453 (highest)
  - FL: $12,773

The Implants: HA*

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NY: $18,047 – OK
FL: $12,773 – not so good

*Ortho Network News: 2/5/15

The Implants: RTSA*

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NY: $18,047
AL: $11,574
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Is this sustainable?

*Ortho Network News: 2/5/15
Economics of PHFx: Health Care Burden

- Physician reimbursement: CPT codes
- Hospital reimbursement: DRGs, Amb. Surg rates

Should physicians care about hospital/facility reimbursement?

Absolutely

Why Orthopaedics: 2012 CDC Data

- Number of selected procedures performed:
  - Arteriography and angiography using contrast material: 2.4 million
  - Cardiac catheterization: 1.0 million
  - Endoscopy of large intestine with or without biopsy: 498,000
  - Diagnostic ultrasound: 1.1 million
  - Balloon angioplasty of coronary artery or coronary atherectomy: 500,000
  - Hyaluronidase: 388,000
  - Cesarean section: 1.3 million
  - Reduction of fracture: 871,000
  - Insertion of coronary artery stent: 454,000
  - Coronary artery bypass graft: 395,000

- Total knee replacement: 719,000
- Total hip replacement: 397,000
- Total Shoulder Replacement: 65,000

Will TSR Be Next?

Why is all this important?

Because in all likelihood whatever CMS institutes with respect to hospital and physician reimbursement, the commercial payors will quickly follow and this has already begun
Quality Initiative

• A move from “volume-based” care to “value-based” care

• In reality the two are closely related and the goal should be volume provided in a value-based environment

What do we know?

• Incidence of proximal humerus fractures is increasing – probably
• Operative management is more common – probably
• Clearly defined indications – no
• ORIF more frequently utilized - yes
• HA less frequently utilized – yes
• RTSA becoming increasingly common - yes
• Evidence-based treatment protocols – no

… yet each one of us is reasonably certain and confident of the treatment we provide

In the near future……

• Large databases will be utilized to determine outcomes and to direct care - that database could be by the payors – MD specific

• CMS and other payors will recognize that shoulder arthroplasty - even for fracture - is also amenable to alternate methods of payment like THR and TKR – i.e. FN Fxs treated by THR are in the “bundle”
In the future.....

• ORIF/HA/RTSA will be an outpatient procedure which will change the economics of reimbursement

• “advances” in shoulder surgery will undergo economic assessment before being used in patients and this will be driven by the institutions where we work (including MD-owned amb surg centers)