

Is there *VALUE* in reverse for fracture?



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Disclosures

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Background

- Surgical management of acute proximal humerus fractures (PHF) include:
 - ORIF
 - Hemiarthroplasty (HSA)
 - Reverse Total Shoulder Arthroplasty (RTSA)
- HSA traditionally used as preferred surgical management when salvage of humeral head is not possible or not advisable
- RTSA becoming increasingly utilized due to predictable functional outcomes, though there is concern due to the increased cost of this implant
- There is a need to determine both complication and cost profile in current healthcare economic climate.



Naranja JAAOS 2000

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The Times have Changed

- **Hemiarthroplasty Versus Reverse Total Shoulder Arthroplasty for Acute Proximal Humerus Fractures in Elderly Patients**
 - Garrigues GE; Johnston PS; Pepe MD; Tucker B; Ramsey ML; Austin LS
- **2010: Lots of “haters”**
 - “You’ll put your hospital out of business!”
 - “We cant afford this!”
 - “If there is a benefit, these patients will not live long enough to experience it!”
- **2018**
 - Times have changed...

Utilization and Cost of Reverse Total Shoulder Arthroplasty Versus Hemiarthroplasty for Proximal Humerus Fractures



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Methods

- Queried a 2007 – 2014 combined Humana/Medicare Database of over 16 million patients using PearlDiver Technologies
- Identified all patients who had RTSA and HSA performed for the indication of PHF from 2010 to 2013.
 - RTSA had unique ICD-9 procedure code starting in 2010
 - Guaranteed 1-year follow up per patient
- Calculated average total reimbursement at:
 - Index admission
 - 1-year postop
- Charlson Comorbidity Index calculated for both groups.

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Results

Year	Average Total Admission Cost		Year	Average Total 1-Year Cost	
	RTSA	HSA		RTSA	HSA
2010	\$16,102.00	\$17,873.00	2010	\$34,950.00	\$48,222.00
2011	\$16,733.00	\$20,465.00	2011	\$47,993.00	\$47,172.00
2012	\$18,614.00	\$18,584.00	2012	\$45,622.00	\$50,798.00
2013	\$18,551.00	\$21,298.00	2013	\$43,202.00	\$47,592.00
Average	\$18,042.00	\$18,578.00	Average	\$43,708.00	\$48,461.00

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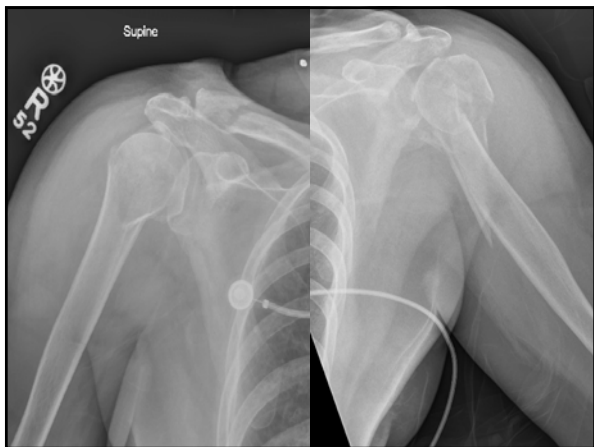
Discussion

- First study examining direct total cost of care over time between two surgical management options.
 - Far beyond implant costs
- RTSA and HSA appear to be roughly equivalent in admission cost, but RTSA is less expensive over 1 year by an average of \$4,753 per patient.
- Cost drivers for difference:
 - Increased utilization of postop PT by hemi group
 - 51% of RTSA group had formal PT at cost of \$1,381 per patient.
 - 77% of HSA group had formal PT at cost of \$1,199 per patient.
- No significant difference in
 - Rate of discharge to SNF/rehab
 - Complication rate, short-term revision rate

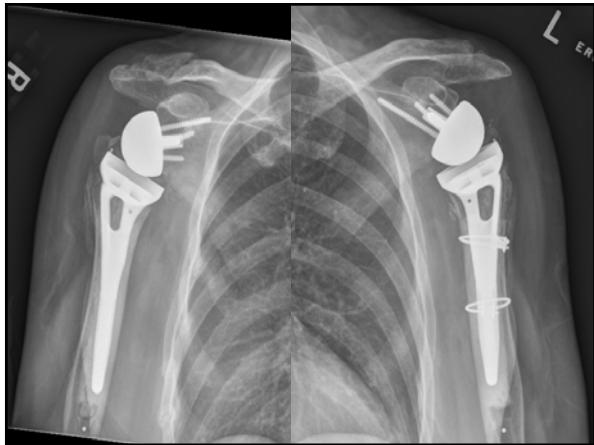


Summary

- RTSA appears to have better functional outcomes than HSA for acute PHF.
- RTSA utilization appears to result in substantial cost savings per patient over 1-year when chosen instead of HSA.
- Further study is warranted to examine each aspect of care that drives this difference.
- Understanding these cost drivers and total cost of care is increasingly important in a value-based healthcare environment.
 - Reverse TSA is NOT more expensive!







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Thank you !



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