

Rotator cuff repair facility costs in an outpatient surgery center and hospital setting

Abstract

Purpose: To evaluate the surgical supply costs associated with arthroscopic rotator cuff repair surgery in an outpatient surgery center and hospital based surgery. Cost was analyzed in a generic/wholesale outpatient setting, generic/sales rep hospital setting and a brand-name/sales rep hospital model.

Method: 15 consecutive patients were retrospectively reviewed for surgical supply costs for an arthroscopic rotator cuff repair performed at an outpatient surgical facility and a hospital setting. All procedures were performed by the same orthopedic surgeon (BR). Surgical supplies were analyzed by utilizing the surgical pick list and charge sheet generated during surgery. Tear size and anchor usage were documented.

Results: 15 consecutive tears were analyzed at each institution. Average surgical supply costs for a rotator cuff repair performed at the outpatient surgery center utilizing a generic/wholesale model was \$353.07 versus \$1750.58 when performed at the hospital utilizing generic/sales rep model. Surgical implants represent 40.6% of total costs of surgical supplies at the outpatient surgery center and 46.5% of total supply costs at the hospital.

Conclusion: Rotator cuff repairs performed at an outpatient surgery center utilizing a generic/wholesale model result in an average net savings of \$1397.51. Surgical supply costs are 4.96 times higher at a hospital utilizing a generic/sales rep model. Significant cost savings can be achieved by performing rotator cuff repair surgery at an outpatient surgery center using a generic, wholesale model.

Clinical Relevance: Downward fiscal pressure has created a scenario where the surgeon must begin to consider surgical costs when considering implant choice.

Keywords: rotator cuff, arthroscopy, implants

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Introduction

Arthroscopic rotator cuff repair surgery has grown in popularity as the subjective and functional outcome has improved over time. National trends in rotator cuff repair have demonstrated a 600% increase in arthroscopic procedures from 1996-2006.¹ As the procedure has moved towards an arthroscopic technique, there has been a concomitant increase in the procedure being performed in an outpatient setting. There has been a significant downward cost pressure in healthcare that will continue to accelerate with the implementation of the Affordable Care Act. The average outpatient facility reimbursement from Medicare for an arthroscopic rotator cuff repair (CPT 29827) was approximately \$1,342 in 2009.² The average payment rate for an outpatient hospital reimbursement for Medicare was \$3,291.³

There exists a plethora of implant options to repair the rotator cuff. The majority of implants are based upon a screw in anchor design loaded with high tensile strength sutures. Most implants represent a stable technological construct with no IP protection (patent). This has created an opportunity for orthopedic implant manufacturers to create a generic, wholesale market. Initial experience with generics has demonstrated significant cost savings without a loss in surgical outcome.⁴⁻⁶ The wholesale model typically requires the surgical facility to manage implant inventory and own the surgical instrumentation associated with the orthopedic implant. There also exists a hybrid model that utilizes stable generic implants with a sales rep that consigns instrumentation and manages his inventory.

The purpose of this study was to compare surgical supply costs for an outpatient surgery center utilizing a generic, wholesale implant model versus a hospital setting that utilizes a generic, sales rep model.

Method

This study was designed as a retrospective case series. 15 consecutive patients undergoing arthroscopic rotator cuff repair at an outpatient surgery center and a hospital performed by a single surgeon (BR) were analyzed. Tear size and pattern dictated the number and type of anchors utilize. Repairs were performed utilizing both a single row and double row technique. Tear size, anchor number and type were recorded. The surgical supplies utilized in each case were determined to utilizing the surgical pick list and charge sheet generated after the surgery. Item price and quantity were recorded. Surgical supply usage was uniform with the exception of rotator cuff anchor usage. All items were placed into a spreadsheet to determine case cost.

Results

Outpatient surgery center

15 consecutive arthroscopic rotator cuff repairs underwent surgical repair from February 2013 until May 2013. The average tear size was 3.0cm². A total of 31 anchors were utilized (23 rotator cuff and 8 knotless) to perform 15 rotator cuff repairs. An average of 2.21 anchors were used per rotator cuff repair. The cost for a generic/wholesale rotator cuff anchor was \$69.95. The cost for a generic/wholesale knotless anchor was \$49.95. The average cost per case

for rotator cuff anchors was \$143.45 (\$69.95-\$209.85). Rotator cuff anchors represented 40.6% of all surgical supply costs. A total of 17 unique surgical supply items were used per case. The surgical supply costs per case excluding rotator cuff anchors were \$209.62. The total average cost per case for surgical supplies was \$353.07 (\$279.57-\$419.47).

Hospital outpatient surgery

15 consecutive arthroscopic rotator cuff repairs underwent surgical repair from September 2012 until May 16, 2013. The average tear size was 3.01cm². A total of 38 anchors were utilized (26 rotator cuff and 12 knotless) to perform 15 rotator cuff repairs. An average of 2.71 anchors were used per rotator cuff repair. The cost for a generic/sales rep rotator cuff and a knotless anchor was \$300. There was a \$250 rental fee involved with consignment of the instrument tray. The average cost per case for rotator cuff anchors was \$814.20 (\$300-\$1,200). Rotator cuff anchors represented 46.5% of all surgical supply costs. A total of 37 unique surgical supply items were used per case. The surgical supply costs per case excluding rotator cuff anchors were \$936.35. The total average cost per case for surgical supplies was \$1,750.58 (\$1,236.35-\$2,136.35).

Traditional sales model

We retrospectively analyzed the surgical supply costs utilizing brand name implants with a sales rep and a consignment model in a hospital outpatient setting. The cost per implant utilizing this model was \$404. The average rotator cuff anchor cost per case was \$1094.84 (2.71 implants per case). There was a \$340 rental fee involved with consignment of the instrument tray. The total cost per case for surgical supplies was \$2,128.19. Rotator cuff anchors represented 51.4% of all surgical supply costs.

Discussion

We demonstrated that significant cost savings can be achieved by utilizing a generic/wholesale model in an outpatient surgery center setting. Surgical supply costs are 4.96 times higher when performed utilizing a generic/sales rep model at an outpatient hospital (\$353.08 compared to \$1750.64). Surgical supply costs were 6.03 times higher utilizing the brand name, sales rep model. We also demonstrated an 18% increase in anchor usage when a sales rep was present with similar rotator cuff tear sizes (3.1cm² hospital, 3.0cm² surgery center). A two-tailed T-Test comparing the two supply costs with the mean: standard deviation: count=353.08: 44.79: 14 versus 1750.64: 217.88: 14, results in a two-tailed P-value of P<0.0001, a highly significant value 8. The generic/wholesale model requires that the surgery center assume responsibility for implant inventory and purchase instrumentation. In order to gain maximal cost savings, assumption of risk and responsibility is a requirement. In order to implement this type of model, physician by-in and uniformity is a necessity. If a surgery center has to stock multiple implant manufacturers, the net savings will decrease do to the need to own multiple instrument trays and expand implant inventory.

Our surgery center is a single physician facility that allows alignment by virtue of the fact that it is a party of one. There is no redundancy in the physician preference devices or other surgical supplies. This is demonstrated by the fact that the hospital pick list consists of 37 items compared to the surgery center pick list of 17.

This efficiency has been achieved by placing most of the items within a single surgical pack (cost- \$88.26). Our surgery center performed 76 rotator cuff repairs in 2012. By using a generic/wholesale model, a net savings of \$106,210 was achieved for these cases (\$1,397.51 net savings per case).

A fair market value analysis demonstrated the average operating expenses per surgical case in an orthopedics-driven ambulatory surgery center was \$614.13 (Employee salary and wages per case- \$489.05, taxes and benefits per case- \$55.96, insurance per case- \$13.16, general and administrative per case- \$55.96).⁷ Excluding real estate costs applied to surgery center operating expenses, the average cost per case for a rotator cuff repair utilizing a generic, wholesale model is \$967.20. Utilizing this model for ambulatory surgery center rotator cuff repair creates a situation that even a Medicare patient can undergo surgery in this setting even facing a \$1,342 global reimbursement.

Limitation

This study was limited to a single hospital and outpatient surgery center.

Conclusion

Rotator cuff repairs performed at an outpatient surgery center utilizing a generic/wholesale model result in an average net savings of \$1397.51. Surgical supply costs are 4.96 times higher at a hospital utilizing a generic/sales rep model. Significant cost savings can be achieved by performing rotator cuff repair surgery at an outpatient surgery center using a generic, wholesale model.

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None.

Conflicts of interest

The authors declare there is no conflict of interest.

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