Original Article

Open Biceps Tenodesis and Tenotomy Have Low 30-Day Postoperative Complication Rates

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Purpose: To compare 30-day postoperative rates of adverse events, particularly infection rates, between open biceps tenodesis and biceps tenotomy. **Methods:** The American College of Surgeons National Surgical Quality Improvement Program was filtered using *Current Procedural Terminology* codes to identify patients undergoing open biceps tenodesis and tenotomy from 2010 to 2021. Patients were divided into cohorts based on procedure type. Propensity score matching was used to account for confounding variables. Statistical analyses were conducted to compare 30-day postoperative outcomes between cohorts, as well as to evaluate secondary risk factors for complications. **Results:** Overall, 12,367 patients were included in the study with 11,417 undergoing open biceps tenodesis and 950 undergoing biceps tenotomy. After matching, 1,900 patients were included in the final analysis. The rate of outpatient procedures in the tenodesis cohort was significantly higher than in the tenotomy cohort. Rates of any adverse event (AAE), sepsis, pneumonia, reoperation, and extended length of stay (LOS) were significantly higher in the tenotomy cohort compared with the tenodesis cohort. There was no difference in infection rates or wound dehiscence between the 2 groups. After multivariable analysis, increasing age, longer operative time, and history of bleeding disorders were associated with significantly higher odds of developing AAE. **Conclusions:** In this study, we found that tenotomy and open tenodesis are both safe options for treatment of biceps pathology. The overall rate of developing AAE and the rate of postoperative sepsis were higher in the tenotomy cohort. In addition, rates of postoperative infection and wound dehiscence did not vary between the 2 groups. Small differences were additionally observed in rates of pneumonia, return to the operating room, and extended LOS, and these rates were higher in the tenotomy cohort. **Level of Evidence:** Level III, retrospective comparative study.

Disorders of the long head of the biceps have been shown to be a substantial source of shoulder pain.[1,2] Although rotator cuff tendon pathologies are a more frequent cause of dysfunction of the shoulder,[3] 1 study demonstrated that all chronic rotator cuff tears are associated with a biceps tendon pathology, and biceps tendon disorders make up a portion of the degenerative processes within the shoulder.[4] Due to their contribution to patients' pain and symptoms, evaluation of the health of the long head of the biceps should be carefully evaluated in patients with chronic shoulder pain to pursue additional treatment options to help alleviate their symptom burden.[5] While most patients with biceps pathologies find pain and symptom relief with conservative care, failure of nonoperative approaches or biceps subluxation indicates careful consideration of surgical treatment options.[6,7] Two of the primary surgical methods used in the care of biceps tendon pathologies include biceps tenotomy and open or arthroscopic biceps tenodesis.[7] In general, current guidelines suggest the use of tenodesis in younger patients and those with physically demanding occupations, while tenotomy is preferred in older patients with lower activity levels.[1,8]

Current literature primarily agrees that there are few differences in the long-term outcomes of both biceps tenodesis and biceps tenotomy. Most of these studies have failed to identify any significant differences in functional outcomes 1 year or more postoperatively between the 2 procedures in regards to pain, range of motion, and strength.[9-16] However, many of these same studies have shown higher rates of Popeye deformity

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following biceps tenotomy compared with biceps tenodesis.[8-11,14-17] Although these studies provide excellent insight into the long-term outcomes for both biceps tenotomy and biceps tenodesis, few address the short-term adverse events that can occur after operative intervention. Given that most patients undergoing operative care for biceps tendon disorders have chronic degenerative processes with a greater likelihood of comorbid conditions,[18] it is critical in the surgical care planning process to consider the short-term safety and efficacy of these procedures in addition to their long-term functional outcomes. Studies that have examined short-term outcomes of biceps tenodesis and tenotomy cite postoperative infections as a major concern following biceps tenodesis and have shown that tenodesis may have a greater risk of postoperative infection.[19-22] However, the data regarding postoperative infections are quite limited. Therefore, it is important to continue to analyze any potential differences in infection rate between these procedures given that postoperative infections are a short-term concern after surgery.

One prior study has already evaluated the 30-day postoperative complication differences between open and arthroscopic biceps tenodesis using the National Surgical Quality Improvement Program (NSQIP) data set.[23] Gowd et al.[23] found that open biceps tenodesis had a significantly greater risk of any adverse event within 30 days of surgical intervention and that open biceps tenodesis in particular was associated with higher rates of anemia requiring transfusion when compared with arthroscopic biceps tenodesis. Their findings helped shape the decision in this study to compare biceps tenotomy specifically to open biceps tenodesis due to the significant rates of complications.

The purpose of this study was to compare 30-day postoperative rates of adverse events, particularly infection rates, between open biceps tenodesis and biceps tenotomy. We hypothesized that patients undergoing tenodesis would have higher rates of postoperative infection than patients undergoing tenotomy.

Methods

The American College of Surgeons (ACS) NSQIP was used for retrospective analysis of short-term postoperative outcomes for patients undergoing either biceps tenotomy or open tenodesis between 2010 and 2021. Institutional review board approval was not sought, as the ACS NSQIP is a nationally used database consisting of only deidentified data. The inclusion criteria for this study were undergoing either biceps tenotomy or open tenodesis, with patients being identified using *Current Procedural Terminology* (*CPT*) codes. Exclusion criteria included concomitant rotator cuff repair (*CPT* code 23410, 23412, or 29827), total shoulder arthroplasty (23472), or hemiarthroplasty (23470), or if patients underwent arthroscopic tenodesis (29828) rather than open tenodesis. Cases were also excluded if they lacked information on patient age, biological sex, body mass index (BMI), operative time, functional status, American Society of Anesthesiologists (ASA) classification, or total length of hospital stay (LOS). Patients who underwent concomitant procedures or were in both study groups were excluded. Additionally, patients were excluded if they lacked sufficient demographic data (such as age, sex, or BMI). Surgical procedure information and data regarding patient demographics, comorbidities, and 30-day complication rates were collected by the certified Surgical Clinical Reviewer for each site participating in the NSQIP database.[24] The most recent iteration of the NSQIP database (2021) contains 983,851 cases collected from 685 institutions across the nation.[24] To form the 2 cohorts, the database was filtered using *CPT* codes for open tenodesis (23430) and tenotomy (23405) of the biceps tendon.

After the tenodesis and tenotomy cohorts were created, 1:1 propensity matching using the nearest-neighbor method was used to eliminate confounding variables and mimic randomization for analysis. Matching was done based on age, sex, BMI, race, ASA classification, comorbidity history (diabetes, hypertension, congestive heart failure, chronic obstructive pulmonary disease, and bleeding disorder), smoking history, steroid use, and functional status. This matching method and inclusion of these variables were selected to maximize the strength of matches. The 30-day postoperative complications were then compared between matched cohorts. These complications included wound dehiscence, postoperative transfusion, surgical site infection (SSI), urinary tract infection (UTI), acute renal failure, sepsis, deep vein thrombosis (DVT), pulmonary embolism, pneumonia, myocardial infarction (MI), cerebrovascular accident, unplanned intubation, cardiac arrest, reoperation, extended LOS, and death. Overall rates of any adverse event (AAE) were also compared between the 2 groups.

To evaluate for differences in postoperative outcomes between the cohorts, RStudio software 2023.06.1+524 (R Foundation for Statistical Computing) was used to conduct various statistical tests, including propensity score matching, bivariate analysis, and multivariate analysis. Student 2-tailed *t* tests were employed for bivariate analysis of continuous variables (age, operative time, etc.) in matched and unmatched cohorts. The χ^2 tests were employed for bivariate analysis of categorical variables (race, ASA class, etc.) in matched and unmatched cohorts. For analysis of secondary independent risk factors for AAE, we conducted a multivariate logistic regression. For all

analyses, statistical significance was defined as a resulting *P* value less than .05.

Results

Demographics

A total of 45,597 patients who underwent biceps tenodesis or tenotomy from 2010 to 2021 were identified, with 24,776 undergoing tenodesis and 2,376 undergoing tenotomy. After excluding patients undergoing concomitant procedures, as well as removing those cases who were represented in both the tenodesis and tenotomy cohorts, 11,556 patients remained in the tenodesis cohort and 973 remained in the tenotomy cohort. A total of 12,367 were included in the final analysis, with 11,417 (92%) in the unmatched open tenodesis cohort and 950 (8%) in the unmatched tenotomy cohort. After 1:1 propensity score matching, there were 1,900 total patients included, with 950 patients in each matched group.

Upon analyzing the unmatched groups, there were no statistically significant differences in only a few comorbidities, including smoking status, ascites, and preoperative blood transfusion. In terms of statistically significant differences, the tenotomy cohort demonstrated higher average age, fewer male patients, higher average BMI, longer operative time, longer average LOS, lower rates of outpatient status, higher average ASA classification, higher morbidity and mortality probabilities, more patients with dependent functional status, and higher rates of comorbid conditions, including congestive heart failure, dialysis, preoperative steroid use, bleeding disorders, diabetes, and chronic obstructive pulmonary disease (COPD) (Table 1).

Table 1. Demographic and Comorbidity Characteristics for Patients Undergoing Open Tenodesis Versus Tenotomy

Characteristic	Tenodesis Unmatched	Tenotomy Unmatched	*P* Value	Tenodesis Matched	Tenotomy Matched	*P* Value
Patients, n (%)	11,417 (92.3)	950 (7.68)		950 (50.0)	950 (50.0)	
Age, mean ± SD, y	43.9 ± 13.7	49.0 ±16.4	**<.001**	49.5 ± 14.1	49.0 ± 16.4	.420
BMI, mean ± SD	29.6 ± 5.66	30.1 ± 7.67	**.0327**	29.9 ± 6.44	30.1 ± 7.67	.586
Male sex, n (%)	8,643 (75.7)	435 (45.8)	**<.001**	427 (44.9)	435 (45.8)	.747
Operative time, mean ± SD, min	86.6 ± 47.0	105.2 ± 91.4	**<.001**	89.3 ± 51.5	105.2 ± 91.4	**<.001**
Length of stay, mean ± SD, d	0.23 ± 1.81	1.83 ± 3.50	**<.001**	0.35 ± 1.42	1.83 ± 3.50	**<.001**
Outpatient status, n (%)	10,782 (94.4)	559 (58.8)	**<.001**	859 (90.4)	559 (58.8)	**<.001**
ASA class, mean ± SD	1.93 ± 0.64	2.23 ± 0.69	**<.001**	2.23 ± 0.67	2.23 ± 0.69	.919
1 (no disturbance), n (%)	2,718 (23.8)	121 (12.7)	—	110 (11.6)	121 (12.7)	—
2 (mild disturbance), n (%)	6,899 (60.4)	515 (54.2)	—	531 (55.9)	515 (54.2)	—
3 (severe disturbance), n (%)	1,725 (15.1)	292 (30.7)	—	290 (30.5)	292 (30.7)	—
4 (life-threatening disturbance), n (%)	75 (0.66)	22 (2.32)	—	19 (2.00)	22 (2.32)	—
5 (moribund), n (%)	0	0	—	0	0	—
Race, n (%)						
White	8,146 (71.3)	732 (77.1)	—	731 (76.9)	732 (77.1)	—
Black	1,114 (9.76)	82 (8.63)	—	86 (9.05)	82 (8.63)	—
Asian	186 (1.63)	12 (1.26)	—	13 (1.37)	12 (1.26)	—
Other	179 (1.57)	14 (1.47)	—	12 (1.26)	14 (1.47)	—
Unknown	1,792 (15.7)	110 (11.6)	—	108 (11.4)	110 (11.6)	—
Morbidity probability, mean ± SD	0.0067 ± 0.0078	0.016 ± 0.017	**<.001**	0.0092 ± 0.013	0.016 ± 0.017	**<.001**
Mortality probability, mean ± SD	0.0004 ± 0.0022	0.0012 ± 0.0050	**<.001**	0.0007 ± 0.0040	0.0012 ± 0.0050	**.0197**
Dependent functional status (partial or total), n (%)	39 (0.34)	11 (1.16)	**<.001**	7 (0.74)	11 (1.16)	.477
Current smoker, n (%)	2,143 (18.8)	176 (18.5)	.887	197 (20.7)	176 (18.5)	.248
Comorbidities, n (%)						
Congestive heart failure	13 (0.11)	4 (0.42)	**.0455**	2 (0.21)	4 (0.42)	.683
Dialysis*	8 (0.07)	4 (0.42)	**.00517**	1 (0.11)	4 (0.42)	.371
Steroid use	142 (1.24)	20 (2.11)	**.0361**	21 (2.21)	20 (2.11)	1
Bleeding disorder	79 (0.69)	29 (3.05)	**<.001**	17 (1.79)	29 (3.05)	.101
Ascites	0	0	1	0	0	1
Preoperative transfusion	10 (0.09)	2 (0.21)	.531	2 (0.21)	2 (0.21)	1
Diabetes	845 (7.40)	130 (13.7)	**<.001**	131 (13.8)	130 (13.7)	1
IDDM	285 (2.50)	44 (4.63)	—	43 (4.53)	44 (4.63)	—
NIDDM	560 (4.90)	86 (9.05)	—	88 (9.26)	86 (9.05)	—
COPD	168 (1.47)	37 (3.89)	**<.001**	35 (3.68)	37 (3.89)	.904

NOTE. Bold values represent significant *P*-values (<.05).

ASA, American Society of Anesthesiologists; BMI, body mass index; COPD, chronic obstructive pulmonary disease; IDDM, insulin-dependent diabetes mellitus; NIDDM, non-insulin-dependent diabetes mellitus.

*Dialysis: acute or chronic renal failure requiring dialysis within 2 weeks of indexed procedure.

Table 2. Incidence of Adverse Events for Patients Undergoing Open Tenodesis Versus Tenotomy

	Tenodesis Unmatched		Tenotomy Unmatched			Tenodesis Matched		Tenotomy Matched			Overall Matched	
Characteristic	n	Rate, %	n	Rate, %	*P* Value	n	Rate, %	N	Rate, %	*P* Value	n	Rate, %
Any adverse event	189	1.66	42	4.42	**<.001**	18	1.89	42	4.42	**.00163**	60	3.16
Death	6	0.052	2	0.21	.294	2	0.21	2	0.21	1	4	0.21
Wound dehiscence	6	0.052	0		**.0143**	0		0		1	0	
Sepsis	5	0.044	8	0.84	**.00737**	0		8	0.84	**.00462**	8	0.42
Pulmonary embolism	15	0.13	2	0.21	.604	2	0.21	2	0.21	1	4	0.21
Acute renal failure	2	0.02	0		.157	0		0		1	0	
Myocardial infarction	5	0.044	3	0.32	.138	2	0.21	3	0.32	.655	5	0.26
Cardiac arrest	4	0.035	0		**.0455**	1	0.11	0		.318	1	0.05
Stroke	0		0		1	0		0		1	0	
Transfusion	33	0.29	10	1.05	**.0229**	6	0.63	10	1.05	.316	16	0.84
DVT	17	0.15	2	0.21	.687	2	0.21	2	0.21	1	4	0.21
UTI	11	0.096	2	0.21	.452	1	0.11	2	0.21	.564	3	0.16
Pneumonia	12	0.11	8	0.84	**.0136**	1	0.11	8	0.84	**.0194**	9	0.47
Intubation issues*	5	0.044	5	0.53	**.0409**	1	0.11	5	0.53	.102	6	0.32
SSI	66	0.58	4	0.42	.479	4	0.42	4	0.42	1	8	0.42
Return to the OR	55	0.48	19	2.00	**<.001**	7	0.74	19	2.00	**.0178**	26	1.37
Extended LOS	211	1.85	299	31.5	**<.001**	27	2.84	299	31.5	**<.001**	326	17.2

NOTE. Bold values represent significant *P*-values (<.05).

AAE, any adverse event (superficial and deep surgical site infection, organ space infection, wound dehiscence, acute renal failure, intubation [fail to wean or reintubation], postoperative transfusion, pneumonia, DVT, pulmonary embolism, UTI, stroke, cardiac arrest, myocardial infarction, return to the OR, death); DVT, deep vein thrombosis; LOS, length of stay (extended: greater than 1 standard deviation above the mean); OR, operating room; SSI, surgical site infection; UTI, urinary tract infection.

*Intubation issues: reintubation or failure to wean from intubation.

After matching, there were no statistically significant differences between the cohorts in terms of age, BMI, sex, ASA classification, functional status, smoking status, and all assessed comorbidities. Operative time and LOS remained higher in the tenotomy cohort, which also had a lower rate of outpatient procedures. The mean ages of the tenodesis and tenotomy cohorts were 49.5 ± 14.1 years and 49.0 ± 16.4 years, respectively. On average, the tenodesis group had a BMI of 29.9 ± 6.44, and the percentage of males was 44.9% (n = 427). The tenotomy group had a mean BMI of 30.1 ± 7.67 and a percentage of males at 45.8% (n = 435). Table 1 outlines further demographic details.

Outcomes

Prior to matching, the tenotomy group demonstrated significantly higher rates of AAE, sepsis, postoperative transfusion, pneumonia, intubation issues, reoperation, and extended LOS, and the tenodesis group showed significantly more incidences of wound dehiscence and cardiac arrest (Table 2). However, after matching, only AAE (4.42% vs 1.89%, $P = .002$), sepsis (0.84% vs 0%, $P = .005$), pneumonia (0.84% vs 0.11%, $P = .02$), reoperation rate (2.00% vs 0.74%, $P = .02$), and extended LOS (31.5%, 2.84%, $p < 0.001$) remained significantly different between the cohorts and were all higher in the tenotomy group. Therefore, rates of SSI and wound dehiscence did not vary significantly between groups, and the rate of sepsis was higher in the tenotomy cohort. Death, pulmonary embolism, acute renal failure, MI, stroke, DVT, UTI, and intubation issues were not found to be statistically significant before or after propensity score matching.

After accounting for all other variables, increasing age (odds ratio [OR], 1.0006; 95% confidence interval [CI], 1.0001-1.001), longer operative time (OR, 1.0004; 95% CI, 1.0003-1.0005), and history of bleeding disorders (OR, 1.084; 95% CI, 1.029-1.141) were all associated with significantly higher odds of developing AAE (Table 3). However, sex, ASA classification of 1 to 4, history of diabetes, history of COPD, and steroid use were not found to significantly affect the risk of developing postoperative complications (Table 3).

Table 3. Odds of Developing Any Adverse Event During Surgery as Related to Patient Demographics, Comorbidities, and Procedure

	Multivariable Analysis*		
Characteristic	OR Coefficient	95% CI	*P* Value
Overall			
Age (1-year intervals)	1.0006	1.0001-1.001	**.0328**
Operative time (1-minute intervals)	1.0004	1.0003-1.0005	**<.001**
Sex			
Female	Reference	—	—
Male	0.996	0.981-1.012	.656
ASA class			
1	Reference	—	—
2	0.980	0.955-1.005	.113
3	1.001	0.972-1.031	.938
4	1.046	0.986-1.111	.135
Diabetes mellitus			
IDDM	Reference	—	—
NIDDM	0.990	0.947-1.035	.649
None	0.984	0.947-1.022	.412
COPD			
No	Reference	—	—
Yes	0.991	0.951-1.034	.687
Bleeding disorder			
No	Reference	—	—
Yes	1.084	1.029-1.141	**.00221**
Steroid use			
No	Reference	—	—
Yes	1.006	0.953-1.061	.838

NOTE. Bold values represent significant *P*-values (<.05).

ASA, American Society of Anesthesiology; CI, confidence interval; COPD, chronic obstructive pulmonary disease; IDDM, insulin-dependent diabetes mellitus; NIDDM, non-insulin-dependent diabetes mellitus; OR, odds ratio.

*Variables are adjusted for all baseline characteristics; reference procedure: tenodesis.

Discussion

This study found that the rates of sepsis and AAE were significantly higher in the tenotomy cohort after controlling for baseline demographic characteristics, but rates of SSI and wound dehiscence did not vary. In addition, rates of postoperative pneumonia, reoperation, and extended LOS were higher in patients undergoing biceps tenotomy. These findings refute our original hypothesis that rates of infection and wound disruption would be higher in the tenodesis cohort.

In this study, the rate of AAE was 4.42% in the tenotomy cohort compared with 1.89% in the tenodesis cohort. This is significantly lower than findings by recent studies that report complication rates of 13.3% to 37% following tenotomy and 2% to 11% following tenodesis.[18,20,21,25,26] However, these studies include functional and pain measures as well as cosmetic deformity in their definitions of postoperative complication. Although this study did not include analysis on postoperative functional measures, strength measures, or cramping and pain, there is currently a great deal of research on these outcomes. Most recent studies report no difference in postoperative biceps strength, functionality, and range of motion following tenodesis and tenotomy.[8,10-12,14-16,27,28] However, there is some disagreement about whether tenodesis may be preferred to tenotomy with regard to postoperative pain. Some studies have found that there is no difference in postoperative pain following tenotomy or tenodesis.[8,10,11,15,16,27] On the other hand, there is some evidence that patients undergoing tenotomy may have higher rates of cramping and overall pain

postoperatively.[9,14,17,28] Therefore, there is the need for further research analyzing postoperative pain utilizing a large sample size.

Despite the paucity of literature comparing infection rates in patients undergoing biceps tenodesis and tenotomy, many surgeons fear increased infection rates in patients undergoing open biceps tenodesis.[19] Prior to propensity score matching, the results of this study did, indeed, show increased rates of postoperative infection in patients undergoing tenodesis compared with the tenotomy cohort. However, after adjusting for baseline demographics, the rates of SSI and wound dehiscence were not significantly different in the 2 groups, and the rate of postoperative sepsis was, in fact, higher in the tenotomy cohort. The overall rates of SSI and wound dehiscence were 0.42% and 0%, respectively, in the tenodesis cohort and 0.42% and 0% in the tenotomy cohort. This supports findings by recent studies of complications following biceps tenodesis, which report postoperative infection rates of 0.28% to 0.4%[21,23,29] and wound dehiscence rates of 0% to 0.2%.[20,23,29] On the other hand, earlier studies by Abtahi et al.[20] and Gottschalk et al.[26] report much higher rates of 4% and 5.56%, respectively. However, these studies only include data prior to 2014 and utilize much smaller sample sizes. Importantly, this current study found that the overall rates of infection and wound disruption were not higher in patients undergoing tenodesis after adjusting for baseline characteristics. Similarly, in their recent retrospective study of patients undergoing supraspinatus repair (SSP) with concomitant biceps procedures, Hughes et al.[13] found no significant difference in overall complication rates and rates of infection between patients receiving SSP with open tenodesis versus SSP with tenotomy. Therefore, it is likely that any perceived differences in infection rates following tenodesis versus tenotomy may be due to underlying factors, and the risk of postoperative infection or wound dehiscence is no greater in tenodesis than in tenotomy.

This study found increasing age, increasing operative time, and history of bleeding disorder to be independent risk factors for any adverse event. With each additional year of age, patients in this study had a 0.06% increased risk of developing AAE. Increasing age is a known potential risk factor for poor outcomes across many surgical subspecialties. One recent study found that patients older than 60 years had an increased risk of nonhome discharge following distal biceps repair compared with patients younger than 60 years.[30] Increased operative time is known to increase the risk of many postoperative complications, including SSIs, blood loss, UTI, and nerve injury.[31,32] In addition, recent studies of arthroscopic rotator cuff repairs have shown increased operative time to be an independent risk factor for development of any early postoperative complication,[33,34] which is in alignment with the findings of this study. Although this finding was statistically significant, the odds ratio for increasing operative time as an independent risk factor was only 1.0004, representing an increased risk of only 0.6% for developing any postoperative complication with every additional 15 minutes of operative time. Therefore, the clinical significance of this finding may be modest. Finally, this study determined the odds ratio of developing AAE in patients with bleeding disorders to be 1.084, representing an increased risk of 8.4% in this population. This is in line with recent studies that have found increased risk of complications following orthopaedic procedures in patients with coagulative disorders.[35,36] Such independent risk factors are important considerations for surgeons when discussing benefits and risks of treatment options with patients during the informed consent process.

Limitations

This study has several limitations. First, NSQIP limits the amount of postoperative outcomes available for analysis. Therefore, this study did not include analysis on postoperative functional measures, strength measures, or cramping and pain, although these outcomes are well described in the literature. A second limitation of this study is that cosmetic deformity is not included in the analysis because NSQIP does not report on this outcome. Although cosmetic outcome—namely, presence or absence of Popeye deformity—tends to be a major patient concern, this outcome has been widely studied. Finally, this study only presents data from a limited postoperative period as NSQIP only reports on 30 postoperative days. Therefore, slowly developing complications may not be captured in this study. For example, *Cutibacterium acnes* infections are a feared infection following shoulder surgery, and infections tend to be more indolent in onset and may not present within 30 days following surgery.[37] While long-term follow-up data are crucial for analysis of clinical and functional outcomes, this study aims to compare early postoperative complications following tenotomy and tenodesis. Such investigation into the incidence of severe, life-threatening complications, particularly postoperative infections, is critical for surgeons in their clinical decision-making and for patients during the informed consent process.

Conclusions

In this study, we found that tenotomy and open tenodesis are both safe options for treatment of biceps pathology. The overall rate of developing any adverse event and the rate of postoperative sepsis were higher in the tenotomy cohort. In addition, rates of postoperative infection and wound dehiscence did not vary between the 2 groups. Small differences were

additionally observed in rates of pneumonia, return to the operating room, and extended LOS, and these rates were higher in the tenotomy cohort.

Disclosures

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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