

Why Do Patients Delay Shoulder Arthroplasty? Patient Perspectives on the Relative Impact of Nonoperative Treatment Modalities

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INTRODUCTION:

While the decision to delay shoulder arthroplasty (SA) in patients with glenohumeral arthritis (GHOA) is multifactorial, many payors require the prescription of specific nonsurgical treatment modalities such as physical therapy (PT) prior to approving the procedure. However, the reasons why patients with GHOA defer SA and whether or not various nonoperative treatment modalities make a meaningful difference remain largely unknown. Therefore, the purpose of this study was (1) to understand the effectiveness of specific nonoperative modalities and their relative impact on delaying SA in patients with GHOA and (2) to understand the effectiveness of PT in meaningfully improving symptoms of GHOA.

METHODS:

A retrospective review was performed of all patients aged 55-70 who underwent nonoperative management of GHOA by a single fellowship-trained shoulder and elbow surgeon between January 1, 2016 and September 21, 2021. Patients were excluded if they underwent SA on the index shoulder within 2 years of diagnosis or initiation of nonoperative intervention, or were not surgical candidates. A questionnaire (**Figure 1**) was administered electronically to included patients and responses were recorded via RedCAP. As part of the questionnaire, patients were asked to rank the treatment modalities they underwent from most to least impactful in delaying SA. Radiographs were examined and cases were also stratified by Samilson-Prieto grade.

RESULTS:

One hundred and five shoulders in 82 patients were included in the final analysis. The most frequently cited reason for delaying SA was the success of corticosteroid injections (41.9%). PT was cited as a reason for delaying SA in 17.1% of cases. When asked to rank reasons for delaying SA, patients felt that the success of corticosteroid injections was the most impactful reason for delay, while inability to take time off work was the least impactful (**Figure 2**). Steroid injection remained the most frequently cited reason for delaying SA across all arthritis grades. Physical therapy was more impactful in delaying SA for patients with mild arthritis versus moderate/severe disease (**Figure 2**). Among those who underwent a course of physical therapy, 18.5% of cases experienced subjective worsening of their symptoms, while 11.1% of cases experienced 100% relief.

DISCUSSION AND CONCLUSION:

Our results demonstrate that patients experience the greatest impact from corticosteroid injections in delaying SA, far outweighing personal or psychosocial factors. Physical therapy had a moderate impact, more frequently worsened symptoms than relieved them completely, and was cited as a reason for delaying SA in only 17% of cases. Understanding the reasons why patients with GHOA delay SA has implications in streamlining care and reducing healthcare costs.

Q1: Did you undergo shoulder arthroplasty within 2 years of presenting to the treating physician?

Q2: If you did not undergo shoulder arthroplasty within 2 years of initial presentation, why not? Check all that apply

- Physical therapy worked
- Steroid injections worked
- Medications worked
- Activity modification worked
- I had another surgery which worked
- My symptoms went away on their own
- I did not want to have surgery
- I could not take time off work to get surgery
- Other

Q3: Of the factors you selected, rank them from most to least impactful in your decision to defer shoulder arthroplasty.

Q4: If you underwent physical therapy, how much do you feel that it helped your symptoms?

- 100% relief, permanently
- Significant improvement (about 75%)
- Mild improvement (about 25%)
- No resolution but no worsening
- Worsened my arthritis symptoms

Figure 1: Electronic questionnaire administered to all patients. Patients who responded "yes" to Q1 were not given the ability to answer the other questions.

Rank	Reason for Delaying Shoulder Arthroplasty		
	Total Cohort	Mild Arthritis	Moderate/Severe Arthritis
1 (most important)	Corticosteroid injections worked	Corticosteroid injections worked	Other
2	Did not want surgery	Physical therapy worked	Did not want surgery
3	Other	Oral medications worked	Corticosteroid injections worked
4	Oral medications worked	Another surgery worked	Activity modification worked
5	Activity modification worked	Symptoms resolved on their own	Oral medications worked
6	Physical therapy worked	Did not want surgery	Symptoms resolved on their own
7	Symptoms resolved on their own	Activity modification worked	Physical therapy worked
8	Another surgery worked	Could not take time off work	Another surgery worked
9 (least important)	Could not take time off work	Other	Could not take time off work

Figure 2: Ranking of most impactful reasons for delaying shoulder arthroplasty for the total cohort and stratified by arthritis grade.