



Follow-up of arthroscopic Baker's cyst decompression

Spencer M. Sims, Andrea Montalbano, Kayla Orbeck, and Dr. Julie Dodds
Michigan State University College of Human Medicine

Introduction

Popliteal cysts (also known as Baker's cysts) are responsible for significant activity limitation, as well as pain and discomfort, in a subset of patients. Popliteal cyst manifestation coincides with intra-articular pathology in a majority of patients. Anatomy of the Popliteal cyst, most commonly, involves joint communication between the intra-articular space and the gastrocnemio-semimembranosus bursa [Fritschy]. Communication of the two spaces was found to be through a transverse slit below the origin of the gastrocnemius tendon [Rauschnig]. This slit is also known as the posterior transverse synovial infold [Brazier].

Brazier *et al.* described a surgical approach for Baker's cyst decompression, in which an arthroscopic shaver and biting baskets are used to resect the posterior transverse synovial infold creating an 8-10mm opening to allow for communication of the popliteal cyst with the posterior joint capsule. Previous study on arthroscopic management of popliteal cysts showed symptom resolution to grade 0 using Rauschnig and Lindgren criteria in all 14 of the patients studied at final follow-up [Ko].

Here we present a study that aims to analyze objective clinical characteristics and treatment profiles as well as patient reported outcomes of patients treated with the surgical technique previously reported by Brazier *et al.*

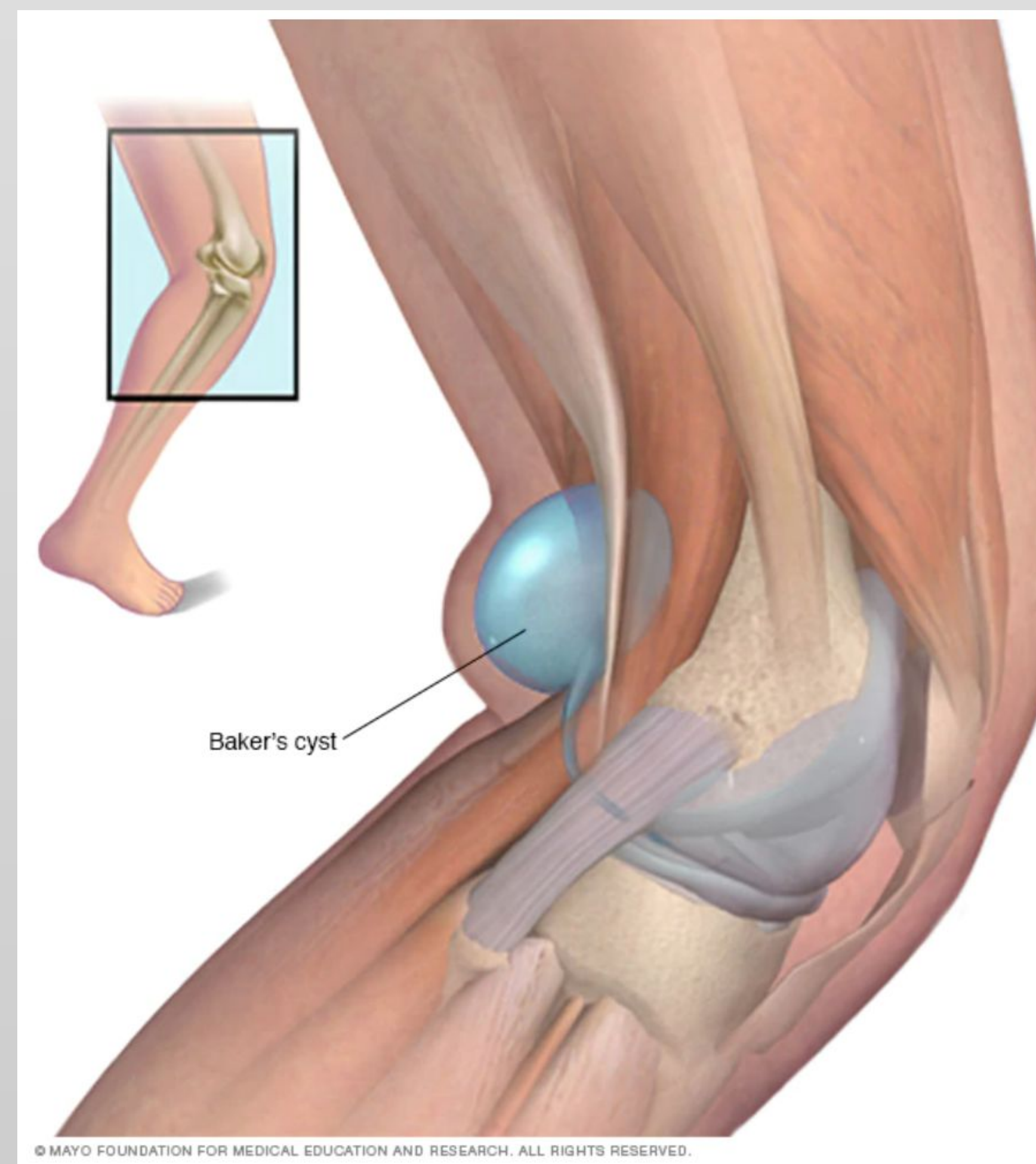


Figure 1. Baker's cyst.

A Baker's cyst is a swelling on the back of the knee. It is comprised of joint-lubricating fluid, which fills a pouch (bursa) in the back of the knee [Mayo Clinic].

Methods

1. Chart review: patients who had an arthroscopic Baker's cyst decompression at 2 Michigan community hospitals within the past 5 years
2. Variables: pain and swelling of the joint, articular cartilage status, concomitant procedures performed, previous surgical history, subsequent surgical interventions
3. MRI review: presence/size of the popliteal cysts
4. Follow-up phone calls: post-operative knee fullness/pain, Lysholm scale for posterior knee pain

Results

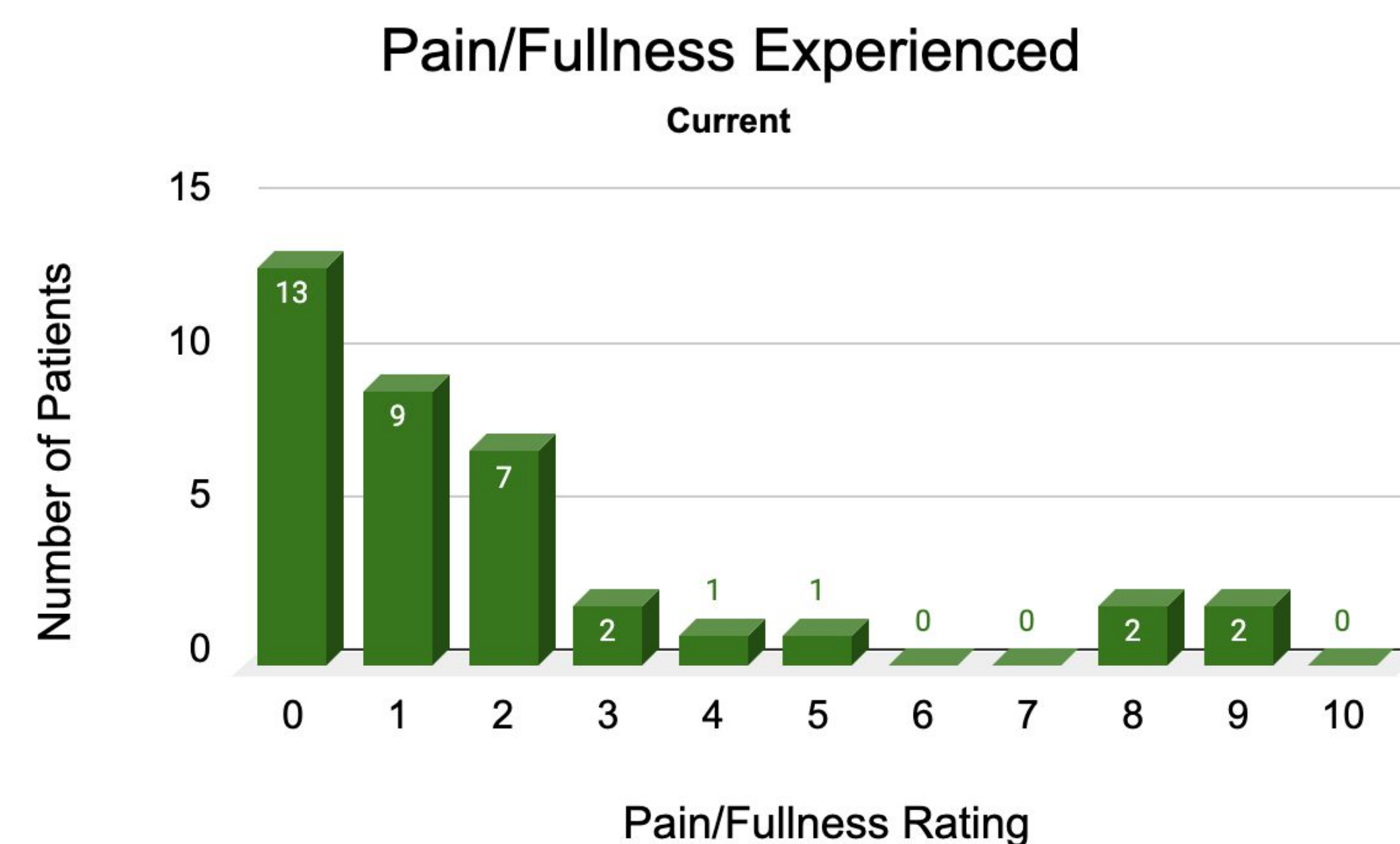


Figure 2. Current Pain/Fullness Rating.

A majority of patients rate the pain/fullness in the back of their knee as low (majority between 0-2), which is a drastic decrease in comparison to prior to surgery (majority rated between 7-10) (n=37).

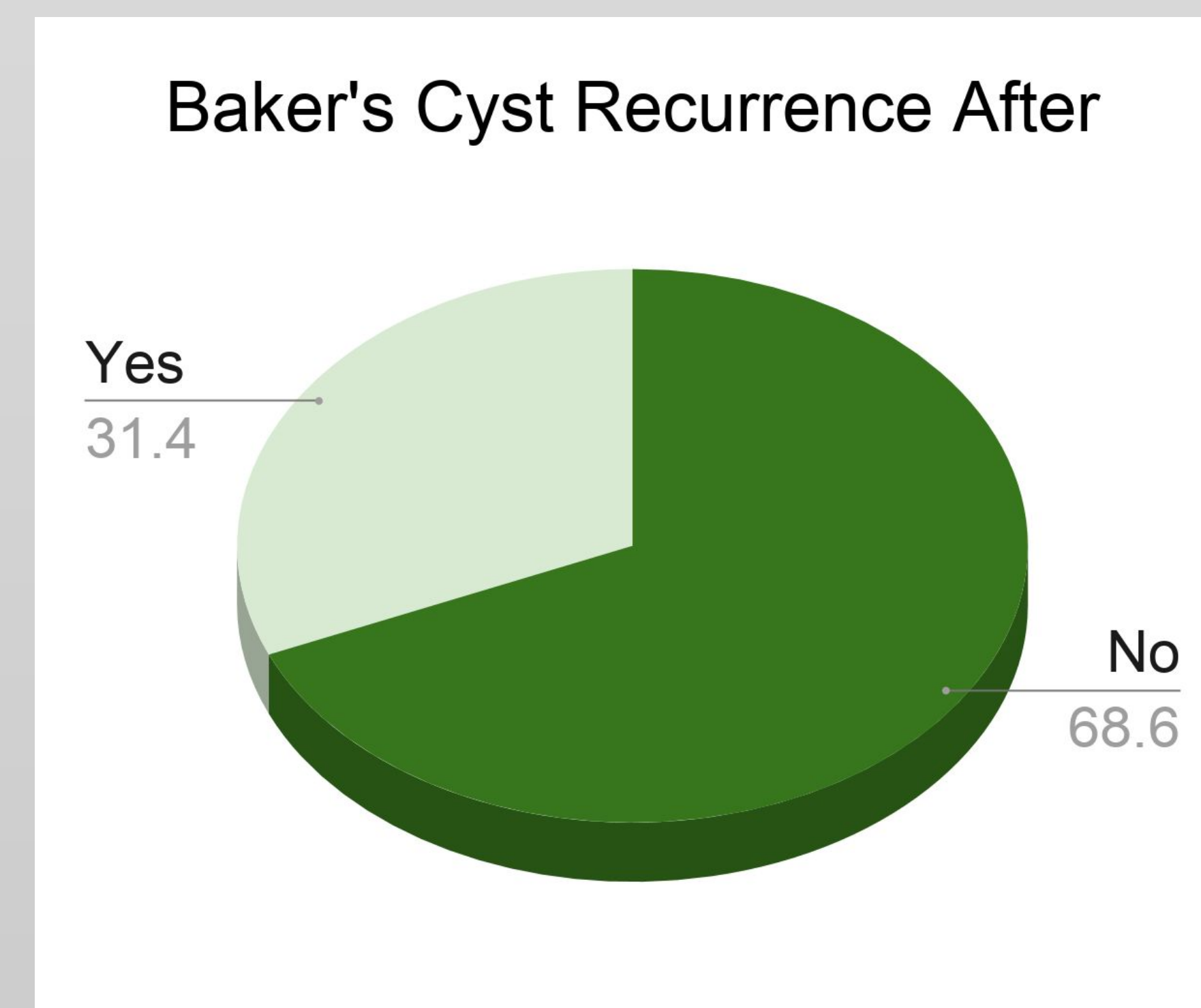


Figure 3. Baker's cyst recurrence.

A majority of patients (69%) indicated their Baker's cyst did not recur following surgery (n=37).

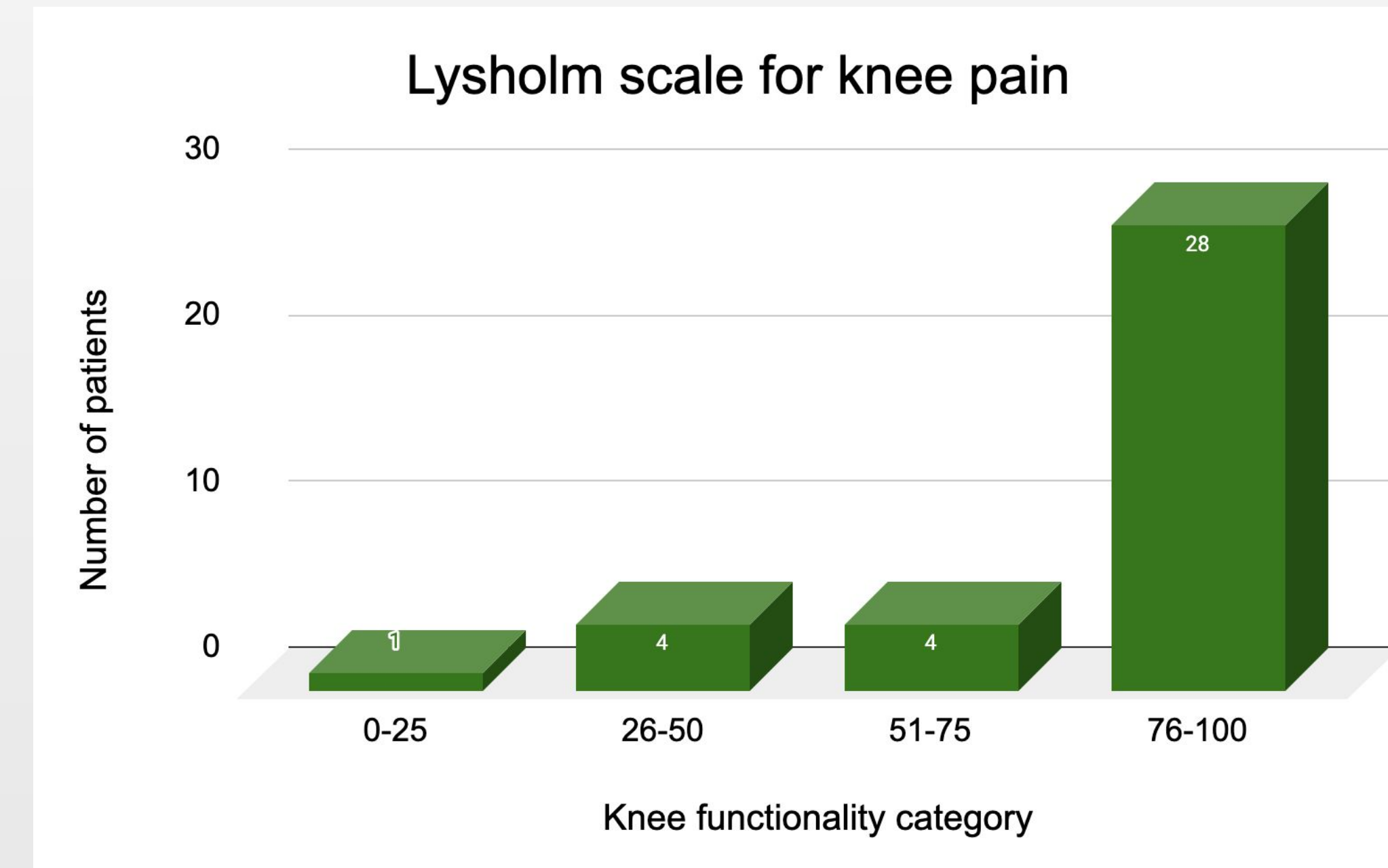


Figure 4. Lysholm scale for posterior knee pain.

Higher score ratings indicate improved functionality and decreased pain following surgery (n=37).

Discussion

Popliteal cysts represent a significant portion of presenting knee complaints. Historically, the chief complaint for patients presenting with popliteal cysts involved a posterior knee mass or stiffness. A large portion of popliteal cysts coincide with internal joint pathology. One study found the presence of medial meniscus tears in 71% of MRI confirmed popliteal cysts [Fielding]. Another study found the presence of coexisting joint disease in 70% of older populations [Handy]. While the presence of coexisting joint pathology creates difficulty distinguishing symptom origin, popliteal cysts present significant activity limitations themselves. Rauschnig *et al.* reported symptom manifestations from the popliteal cyst itself in 34 of the 41 knees analyzed [Rauschnig].

Management of popliteal cysts involves both surgical and non-surgical options, yet limited research is available to guide the most effective treatment plan. Coexisting joint pathology can lead to increased synovial fluid and cause enlargement of the cyst, and should be factored into any treatment plan. For symptomatic cysts, non-surgical management includes arthrocentesis of the joint, in addition to intra-articular glucocorticoid injections. Patients with noncommunicating cysts may not respond to this initial treatment, and may need to undergo ultrasound guided aspiration of the cyst directly, followed by glucocorticoid injection [Bandinelli]. Treatment response to this initial management and any coexisting pathology may influence the need for more definitive surgical treatment. For those with recurring symptoms or limited mobility attributable to their popliteal cyst, surgical treatment is often the last step.

Conclusions

- Baker's cyst management includes non-surgical and surgical options, the latter being employed when medical management is insufficient.
- Those who underwent surgical intervention via arthroscopic Baker's cyst decompression had a decrease in their average pain/fullness and improvement in their activity limitations.
- A majority of patients did not observe a recurrence of the cyst following surgery.
- Many patients had increased functionality and decreased pain/fullness in the posterior portion of the knee following surgery, as indicated by the Lysholm scale for posterior knee pain.
- Arthroscopic Baker's cyst decompression is an effective and efficient means through which popliteal cysts can be managed.

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