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An inquiry of the reasons why patients avoid undergoing arthroscopic meniscus surgery

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Abstract

Although arthroscopic meniscus repair is the definitive treatment for meniscal tears, some patients have the fear of undergoing such surgery. In this study, we hypothesized that patients with meniscal tears would have a specific reason to avoid arthroscopic meniscus repair and that those who had opted for or avoided surgery would differ in terms of sociodemographic data, preoperative concerns regarding surgery, and/or functional status. A total of 176 patients (32 males, 144 females; mean age: 46.32±11.80 years) were included in the study. All patients had been diagnosed with meniscal tears by clinical and radiological examinations (X-ray, MRI) and recommended surgical treatment between 2018 and 2020. A single question was asked to the patients: "Why would you like to avoid surgery?" and their answers were recorded. In 63.6% of the patients, the reason for avoiding surgery was the fear of not being able to walk. Similarly, 59.1% of the patients stated that they had a fear of getting worse after surgery. More than half (54.5%) of the patients said that they knew people who had undergone similar surgery and did not benefit from it. A great majority (90.9%) of the patients stated that they had concerns about being bedridden after surgery. The proportion of the patients who thought no one would take care of their children if they had an operation was 27.3%. About 80% of the patients inquired whether they could receive an alternative conservative treatment before the surgery. Over half (59.1%) of the patients thought that they would not recover even if they underwent surgery. The most obvious reason for patients avoiding surgery was the fear of getting worse than the current state.

Keywords: Avoidance, meniscus, surgery, tear

Introduction

The menisci play a crucial role in the knee joint's function, aiding in shock absorption, lubrication, and stability. By promoting joint alignment and enhancing contact areas on the articular cartilage, they contribute significantly to overall knee health [1]. Meniscus injury or meniscectomy decreases meniscal function, followed by the initiation and the development of knee osteoarthritis (OA) in the long-term follow-up [2]. This realization prompted the proposal of partial meniscectomy as an alternative approach in 1982 [3], followed by the first documented meniscus transplant in 1989 [4]. Presently, the prevailing strategy for managing meniscus tears prioritizes tissue preservation whenever feasible, emphasizing the importance of maintaining the integrity

of the meniscal structure [5-7]. Both meniscus injuries and meniscectomy reduce the meniscal function, which is followed by the onset and development of knee osteoarthritis in the long term [8]. Therefore, meniscus injury should be treated to preserve as much meniscus function as possible, thus, the recent slogan/motto in meniscal surgeries is to "save the meniscus" [9]. Although arthroscopic meniscus repair is believed to be the definitive treatment for meniscal tears, some patients are unwilling to undergo surgery.

In this study, we posited that patients with meniscal tears would harbor distinct reasons for refraining from arthroscopic meniscus repair, and that disparities would exist among individuals who chose to undergo surgery or opted against it, particularly

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concerning sociodemographic factors, preoperative anxieties, and/or functional condition.

Material and Methods

A total of 176 patients (32 males, 144 females; mean age: 46.32±11.80 years) were included in the study. There is no medical justification for the high number of women. It was observed that the number of women coming to the outpatient clinic was higher than the men. All patients had been diagnosed with meniscal tears by clinical and radiological examinations (X-ray, MRI) and referred for surgical evaluation by the senior author between 2018 and 2020. Demographic data regarding age, gender, monthly income, employment status, profession, health insurance coverage, and educational status were collected. The grade of the meniscal tears was assessed with MRI based on Lotysch et al.'s classification. Lotysch et al. reported abnormal high meniscal signal intensities on MRI and classified the tears with small focal areas of hyperintensity and no extension to the articular surface as Grade 1, those with linear areas of hyperintensity and no extension to the articular surface as Grade 2, and those with abnormal hyperintensity and extend to at least one articular surface (superior or inferior) as Grade 3 [10]. All patients had previously used NSAIDs, undergone physical therapy, and had injections, but they did not improve. Osteoarthritis was not observed in any patient. Patients with osteoarthritis were excluded from the study.

The severity of pain was evaluated using a visual analog scale (VAS). A VAS consists of a line, often 10 cm long, where 0 on the far left of the scale means 'no pain' and 10 on the far right means 'the most intense pain imaginable'. The patient places a mark at a point on the line corresponding to his/her rating of pain intensity [11]. The research adhered to the principles outlined in the Declaration of Helsinki and the ethics approval was obtained from Batman Training and Research Hospital ethics committee (Decision no: 285, Date: October 08, 2021).

Questionnaire Design

A single question was asked to the patients: "Why would you like to avoid surgery?" The patients could answer the question stating more than one reason. The responses predominantly provided by the patients were recorded.

Data Analysis

The statistical analysis for this study was conducted using the Statistical Package for the Social Sciences version 25.0 software for Windows (IBM Corp., Armonk, NY, USA). The normality of quantitative variables was assessed using the Kolmogorov-Smirnov and Shapiro-Wilk tests. Descriptive statistics were presented as mean±standard deviation, median (min-max), and frequency and percentage, depending on the nature of the variable and the fulfillment of assumptions. Univariate analysis of variables was performed using the chi-square and Kruskal-

Wallis tests, as appropriate based on the variable type and assumptions. Statistical significance was determined at a p-value below 0.05 for all analyses.

Results

Demographic information and clinical findings of the patients are given in Table 1.

Table 1. Demographic information and clinical findings of the patients

Gender	Male	32 (18.2)
	Female	144 (81.8)
Grade of the tear on MRI	1	8 (4.5)
	2	96 (54.5)
	3	72 (40.9)
Profession	Farmer	16 (9.1)
	Retired	16 (9.1)
	Housewife	136 (77.3)
Monthly income	<2,500 TRY	64 (36.4)
	2,500-4,000 TRY	56 (31.8)
	>4,000 TRY	56 (31.8)
Health insurance	Bağ-Kur*	16 (9.1)
	Pension fund	16 (9.1)
	Social insurance institution	72 (40.9)
	Green card	72 (40.9)
Educational status	Illiterate	72 (40.9)
	Primary school	64 (36.4)
	Middle school	8 (4.5)
	High school	16 (9.1)
	College	16 (9.1)
Mean duration of pain, months (range)		27 (8-75)
Mean VAS score, (range)		7 (5-10)
Additional disease	Yes	56 (31.8)
	No	120 (68.2)

TRY: Turkish Liras, VAS: visual analog scale
*Bağ-Kur: social security organization for artisans and the self-employed

More than half of the patients had Grade 2 tears on MRI (54.5%). A great majority of the patients (77.3%) were housewives, while the income segments were similarly distributed among the whole cohort. Again, a great majority of the patients were insured by the Social Security Institution or under the green card program (40.9% each). The majority of the respondents (40.9%) were illiterate, closely followed by primary school graduates (36.4%). The patients have had pain for an average period of 27 months (range: 8 to 75 months) and they had a mean VAS score of 7

(range: 5 to 10). No additional diseases were observed in 68.2% of the patients.

More than two-thirds (68.2%) of the patients stated that they had no fear of anesthesia, whereas 31.8% stated otherwise. In 63.6% of the patients, the reason for avoiding surgery was the fear of not being able to walk. Similarly, 59.1% of the patients stated that they had a fear of getting worse after surgery. More than half (54.5%) of the patients said that they knew people who had undergone similar surgery and did not benefit from it. A great majority (90.9%) of the patients stated that they had concerns about being bedridden after surgery. The proportion of the patients who thought no one would take care of their children if they had an operation was 27.3%. About 80% of the patients inquired whether they could receive an alternative conservative treatment before the surgery. Over half (59.1%) of the patients thought that they would not recover even if they underwent surgery (Table 2).

Table 2. Patients’ reasons for avoiding surgery

Fear of anesthesia (death)	No	120 (68.2)
	Yes	56 (31.8)
Fear of not being able to walk	No	64(36.4)
	Yes	112 (63.6)
Fear of getting worse	No	72 (40.9)
	Yes	104 (59.1)
Fear of being bedridden after surgery	No	160 (90.9)
	Yes	16 (9.1)
Fear that no one would take care of their children if they had surgery	No	128 (72.7)
	Yes	48 (27.3)
Desire to receive alternative medicine before the surgery	No	32 (18.2)
	Yes	144 (81.8)
Having the thought that he/she will not recover even after surgery	No	72 (40.9)
	Yes	104 (59.1)

The VAS scores increased as the grade of the tears escalated; patients with Type 3 tears had the highest mean VAS score (p=0.011). The effect of the tear type on the duration of pain was also statistically significant (p=0.002) (Table 3).

Table 3. The relationship between the grade of the tear and pain scores and durations

	Grade			p
	1	2	3	
Mean VAS score, (range)	5 (3-7)	7 (5-9)	9 (6-10)	0.011
Mean duration of pain, months (range)	72 (72-72)	24 (8-75)	36 (9-72)	0.002

VAS: visual analog scale, Significant p values are written in bold

Patients’ thoughts that they would not recover even after surgery significantly differed between males and females (p=0.002). Female patients predominantly had the thought that even if they underwent surgery, they would not recover. The relationship between having the thought that he/she would not recover even after surgery and the thought that no one would take care of his/her children if he/she had surgery was statistically significant (p=0.005). 83.3% of the patients who had the thought that they would not recover even after surgery also had the thought that no one would take care of their children if they undergo surgery. The relationship between the patients’ comorbidities and the thought that they would not recover even after surgery was statistically insignificant (p=0.800). The presence of the thought that they would not recover even after surgery was significantly associated with the grade of the tear (p=0.029). Patients with Grade 2 and 3 tears had the fear of not recovering had they undergone surgery (66.7% and 55.6%, respectively) (Table 4).

Table 4. The relationship between the patients’ thoughts that ‘they will not recover even after surgery’ and some demographic and clinical factors

		Has the thought that he/she will not recover after surgery		p
		No	Yes	
Gender	Male	12 (75.0)	4 (25.0)	0.002
	Female	24 (33.3)	48 (66.7)	
Fear that no one would take care of their children if they had surgery	No	32 (50.0)	32 (50.0)	0.005
	Yes	4 (16.7)	20 (83.3)	
Additional disease	No	24 (40.0)	36 (60.0)	0.800
	Yes	12 (42.9)	16 (57.1)	
Grade of the tear	1	4 (100.0)	0 (0.0)	0.029
	2	16 (33.3)	32 (66.7)	
	3	16 (44.4)	20 (55.6)	

Significant p values are written in bold

A great majority (71.4%) of the patients who knew people that did not benefit from the same surgery had the fear of anesthesia (death), exhibiting a significant relationship (p=0.001). Contrary to this, there was no significant relationship between knowing people that did not benefit from the same surgery and having the fear of being disabled (p=0.257). Similarly, the relationship between knowing people with previous surgery failures and having the fear of getting worse was statistically insignificant (p=0.057) (Table 5).

Table 5. The relationship between knowing people that did not benefit from the same surgery and the concerns of the patients

		Knowing people that did not benefit from the same surgery		p
		No	Yes	
Fear of anesthesia (death)	No	80 (66.7)	40 (33.3)	0.001
	Yes	16 (28.6)	40 (71.4)	
Fear of not being able to walk	No	40 (62.5)	24 (37.5)	0.257
	Yes	56 (50.0)	56 (50.0)	
Fear of getting worse	No	48 (66.7)	24 (33.3)	0.057
	Yes	48 (46.2)	56 (53.8)	

Significant p values are written in bold

Discussion

This study consists of patients who were previously diagnosed with meniscal tears, and recommended operative treatment, but were unwilling to undergo surgery. In our study, we tried to identify the factors that affect the willingness of patients in an attempt to understand the decision-making process from their point of view.

Previous studies have identified the factors patients consider when deciding to undergo total joint arthroplasty, e.g. anticipation of pain relief in the future, better walking, restoring quality of life [12,13], fear of surgery [14,15], the severity of arthritis, risks of surgery, opinions of others [16,17], past negative experience with surgery or an unwanted treatment, and the advice or apathy shown by health professionals toward surgery. In the present study, we inquired the reasons for unwillingness to undergo surgery in patients with meniscal tears and found that the fear of getting worse, willingness to seek advice from another doctor, and the desire for receiving alternative medicine before surgery were more pronounced than other factors. Most of the patients stated that they preferred injection or physical therapy as alternative treatments.

In a study investigating the factors affecting the treatment decisions in life-threatening diseases such as breast cancer, the authors reported that patients who did not accept their doctors' recommendations were more educated and more likely to take risks [18]. In our study, patients with a higher level of education did not want to undergo surgery.

A study in the United Kingdom found that financial concerns had little effect on the decision to avoid surgery [19]. In our study, surgery was not refused for such a reason, since access to the health system in our country is free and easy. In addition, there was no significant relationship between the refusal of surgery and the income level of the patient. Regardless of the provided healthcare system, we believe that the physician can provide a

more patient-oriented consultation and enhance the quality of healthcare by understanding the patient’s concerns [19,20].

Prior research has indicated that elderly individuals tend to harbor more undisclosed apprehensions regarding orthopedic surgeries [21] and exhibit a reduced willingness to undergo total joint replacements. Additionally, perceptions regarding the advantages of total joint replacement appear less favorable among individuals of lower socioeconomic status, women [17], and black Americans, in comparison to their white American counterparts [22-24].

In our study, the unwillingness to undergo surgery was observed regardless of age. In addition, housewives were highly predominant among our cohort and they exhibited a significant unwillingness to undergo surgery.

Gong et al. [25] demonstrated that subjective symptoms played a crucial role in the decision-making process for patients with carpal tunnel syndrome. Moreover, individuals who declined surgery reported functional scores comparable to those who underwent the surgical procedure. In another study by Hansrani et al., the authors showed that approximately 16% of the patients violated the 18-week target for treatment because they were unwilling to accept a surgery date that was within six weeks of surgical consultation [26]. In our study, no such comparison was made.

Our study had several limitations. First, we had a small cohort size. Second, since it is a subjective study presented in the question-and-answer form, the patients may not have stated the actual reason for unwilling to undergo surgery. Another limitation was the fact that the majority of the participants were housewives, their answers may not represent the whole society. Finally, the study was conducted with a single interview with the patients and the follow-up data of these patients was insufficient.

Conclusion

The most obvious reason for being unwilling to undergo surgery was the fear of getting worse than the current state and the desire to receive alternative treatments. Although surgery was recommended to these mostly consisted of undecided patients, it was concluded that the patients insisted on alternative treatment rather than surgical treatment.

Conflict of Interests

The authors declare that there is no conflict of interest in the study.

Financial Disclosure

The authors declare that they have received no financial support for the study.

Ethical Approval

The study was conducted by the principles of the Helsinki Declaration, and the ethics approval was obtained from Batman Training and Research Hospital ethics committee (Decision no: 285, Date: October 08, 2021).

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