



Why Do the Patients Reject Spinal Operations? A Preliminary Study

Hastalar Neden Spinal Cerrahi'yi Reddediyor? Bir Ön Çalışma

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ABSTRACT

AIM: Cases of failed back and spine surgery have increased significantly recently, which leads to patient hesitation in deciding about whether to be operated on. In this article, we present a survey investigating refusal reasons for spinal surgery, and we emphasize the effect of failed back surgery.

MATERIAL and METHODS: A survey was conducted among 100 patients who were admitted to the outpatient clinic of neurosurgery at the Elazığ Training and Research Hospital. All of the patients were recommended spinal surgery for various reasons, but did not want to be operated on. Demographic data for the patients, indication of the recommended surgery, the reason for the patient's refusal of the operation, information about previous neurosurgical operations and the history of dissatisfaction with the surgery of an acquaintance were recorded. The data obtained were evaluated statistically and analyzed by percentage.

RESULTS: 46 patients stated they had distrust of surgery, and 54 patients did not want to be operated on for personal reasons. When the two groups were compared, neurosurgical operations and the history of dissatisfaction of the patient or an acquaintance was significantly higher in the first group ($p < 0.001$). It was found that 40% of all the patients ($n = 40$) had a past unpleasant neurosurgical experience that was either personal or relevant.

CONCLUSION: Spinal surgery is a preferred subspecialty of neurosurgery. However, patients' discontent with spinal surgery has been rising gradually in recent years. An accurate indication and proper surgical technique is essential for increasing satisfaction with spinal surgery. Minimally invasive interventions must be considered if necessary. The postoperative expectations of the physician and the patient must also be carefully defined.

KEYWORDS: Refusal reasons, Spinal surgery, Failed back surgery

ÖZ

AMAÇ: Spinal cerrahi nöroşirürji pratiğinde önemli yere sahiptir. Ancak son yıllarda başarısız bel ve omurga cerrahisi olgularında belirgin artış gözlenmiştir. Bu durum hastalarda ameliyat olmayı kabul etme açısından çekinceler yaratmaktadır. Yazımızda beyin cerrahi polikliniğine başvuran çeşitli nedenlerle spinal cerrahi önerilen ve cerrahi kabul etmeyen hastaların cerrahi red nedenlerini sunmak ve başarısız bel cerrahisinin bu konuya etkisini vurgulamak istedik.

YÖNTEM ve GEREÇLER: Elazığ Eğitim Araştırma Hastanesi beyin cerrahi polikliniklerine başvuran ve çeşitli nedenlerle operasyon önerilen 100 hastaya anket uygulandı. Hastaların demografik bilgileri öğrenildi ve anket anında operasyon önerilme endikasyonu, hastanın operasyon istememesinin nedeni, bir yakınının nöroşirürjikal operasyon geçirme ve memnun olmama öyküsü var mı, varsa ne ameliyatı, malzeme kullanılmış mı? gibi sorular yöneltildi. Elde edilen veriler istatistiksel ve yüzde analizi yapılarak değerlendirildi.

BULGULAR: Alınan cevaplara göre 46 hasta cerrahiye bağlı güvensizlik belirtirken 54 hasta kişisel nedenlerle ameliyat olmak istemediğini belirtti. İki grup karşılaştırıldığında ilk grupta 'kendisinde veya etrafında beyin cerrahisi ameliyatı geçirip memnun kalmadığını söyleyen hasta sayısının anlamlı derecede yüksek olduğu görüldü ($p < 0.001$). Tüm hastaların %40'ının (40/100) bir yakınının veya kendisinin beyin cerrahisi branşını ilgilendiren bir ameliyat olduğu ve memnun kalmadığı tespit edildi.

SONUÇ: Spinal cerrahi, beyin cerrahileri arasında tercih edilen bir branştır. Ancak son yıllarda spinal cerrahiye bağlı hasta memnuniyetsizliği artmaktadır. Hasta memnuniyetinin artması için hekimin doğru endikasyon koyması, uygun cerrahi teknik ile hastaya yaklaşması ve gerektiğinde minimal invaziv girişimleri kullanması gerekmektedir. Hekimin ve hastanın operasyon sonrasında beklentilerini iyi belirlemesi de önemlidir.

ANAHTAR SÖZCÜKLER: Red nedenleri, Spinal cerrahi, Başarısız bel cerrahisi

INTRODUCTION

An increase in the knowledge of human anatomy and the development of surgical techniques and devices have led to an increase in the variety of surgical interventions over the last century. Neurosurgical practice has also developed extensively. Definition of the first spinal instrumentation techniques took place in the early 20th century (11). However, the contemporary application of spinal surgery, which is an important part of neurosurgical practice, started in the late 1970s when Gazi Yaşargil used the operation microscope for lumbar discectomy for the first time (8). Subsequently, knowledge of spinal surgery was added to neurosurgical practice and the control of neurosurgeons on the spine increased thereafter. Consequently, spinal surgery has become a considerable part of the practice of many neurosurgeons nowadays.

As spinal surgery has improved and become more pervasive, complications have also increased and failures have been identified. For instance, in a retrospective study carried out in Washington between 1990 and 1993, an 11-year follow up of 24.882 operated patients revealed that the proportion requiring recurrent surgery was 19% (8). The presence of some patients requiring recurrent surgery and the persistence of some complaints after lumbar surgery that became the main interest of spinal surgery have led to the description of failed back surgery syndrome (6).

The evolution of spinal surgery in Turkey is also concurrent with the advancement of universal medicine. As surgical procedures have improved and became more widespread, failed back and vertebra surgery has significantly increased especially since the 2000s. This condition has led patients to hesitate to accept surgery when it is recommended. In this article we present a survey of 100 patients for whom spinal surgery was recommended, but who rejected surgery. The survey was carried out at the Department of Neurosurgery at the Elazığ Training and Research Hospital, a district hospital performing spinal surgery. Because there is a lack of literature on this aspect, we would like to emphasize the importance of our study in demonstrating the secondary effects of failed back surgery on society and the family.

MATERIAL and METHODS

A survey was conducted on 100 patients who applied to the outpatient clinic in neurosurgery of the Elazığ Training and Research Hospital between September and December 2012. They were patients for whom spinal operations were recommended for several reasons, and who had not accepted surgery. The following were assessed: age, gender, education status, occupation, place of residence, number and age of children, history of neurosurgical operations, indication of recommendation of surgery at the time of survey, reason for patient's refusal of the operation, and the history of an acquaintance with dissatisfaction with spinal surgery, the type of operation and the type of surgical materials, if implanted. The obtained data were evaluated statistically and

by percentage analyses. The chi-square test, variance analysis, and the Kruskal–Wallis test were used for statistical analysis.

RESULTS

The surgical procedures recommended for the 100 patients were as follows. Lumbar microdiscectomy for lumbar disc hernia was recommended for 58 patients, and for recurrent lumbar disc hernia for 12 patients. Cervical microdiscectomy for cervical disc hernia was recommended for 8 patients, and lumbar laminectomy for lumbar narrow canal for 6 patients. A total of 16 patients were recommended lumbar instrumentation; the reasons were grade two listhesis in 4 patients, grade one listhesis in 6 patients, and lumbar instrumentation revision in 6 patients (Table I).

Reasons for rejection of the operation were divided into two main groups (Table II):

1. Distrust of surgery
 - General dissatisfaction with surgical outcome (n = 12)
 - Personal dissatisfaction with surgical outcome (n = 12)
 - Personal dissatisfaction with surgical outcome and work overload (n = 2)
 - Fear of postoperative disability (n = 20)
2. Individual problems:
 - Existence of a systemic disease (n = 6)
 - Lack of support for post-operative care (n = 14)
 - Lack of support for childcare during post-op rehab (n = 14)
 - Work overload (n = 18)
 - Lack of support for childcare during post-op rehab and work overload (n = 2)

Of the first group of patients (distrust of surgery), 78.3% also had acquaintances who were dissatisfied due to previous neurosurgical operations, while the equivalent proportion of the second group (refused operations due to individual problems) was 7.4%. The difference was statistically significant ($p < 0.001$).

Sixty-six percent (n = 36) of the first group and 50% (n = 2) of the second group had acquaintances who had undergone lumbar instrumentation. The difference between the two values was not significant ($p = 0.602$). It was also identified that 40% (n = 40) of all patients had either had a previous neurosurgical operations and were dissatisfied or had acquaintances who were in this position.

Of the 20 patients who were afraid of being disabled, 14 patients (70%) had an acquaintance with history of neurosurgical operations who were dissatisfied, of whom 10 (70%) had lumbar instrumentation and 4 (28%) had been operated on because of lumbar disc hernia.

When we evaluated the results of those who rejected surgery, we found the following:

Table I: Indications of Operations

Operation indications	No. of patients	Planned operation
Lumbar disc herniation	58	Lumbar microdiscectomy
Recurrent lumbar disc herniation	12	Lumbar microdiscectomy
Cervical disc herniation	8	Cervical microdiscectomy
Lumbar Stenosis	6	Lumbar laminectomy
Grade 1 spondylolisthesis	6	Lumbar instrumentation
Grade 2 spondylolisthesis	4	Lumbar instrumentation
Revision of instrumentation	6	Revision of lumbar instrumentation

Table II: Answers from Survey

Surgical reasons	Patient is afraid of being disabled	n = 20	Dissatisfied acquaintance after neurosurgical operation and the cause of the operation	Spondylolisthesis	n = 24
	Patient was operated on before and is dissatisfied	n = 12		Lumbar disc herniation	n = 10
	Other operated patients are not satisfied	n = 12		Intracranial mass lesion	n = 2
	Patient is busy and was operated on before and was dissatisfied	n = 2			
		n = 46/100 (46%)			n = 36/47 (78%)
Personal reasons	Patient is very busy	n = 18	Dissatisfied acquaintance after neurosurgical operation and the cause of the operation	Spondylolisthesis	n = 2
	No one to care for the patient	n = 14		Lumbar disc herniation	n = 2
	Patient has to care for child	n = 14			
	Patient is very busy and has to care for children	n = 2			
	Systemic problem	n = 6			
Total		n = 54 (54%)			n = 4/54 (7%)

1. The majority of the 22 patients who had rejected surgery because of work overload were identified as coming from the countryside (63%, n = 14); they were mostly working (45%, n = 10), aged between 40–60 years (81%, n = 18), and with a low level of education (81%, n = 18; 2 were not literate, 8 were literate, 4 were primary school graduates, 4 were secondary school graduates). The mean number of children belonging to parents in this group was 3.4, with a mean age of 21.
2. Of the 16 patients who rejected operations due to their children, 12 (75%) were 20–40 years old. The mean age of the children was 5 years (0–9) and the mean number of children was 2.625.
3. Of the 14 patients who rejected the operation because of lack of support for post-operative care, 12 (85.7%) were in the 40–60 age range. The mean number of their children was 3.2, with a mean age of 25 (Table III).

When the three groups were compared, the age of the patients in the second group and their children were younger than the other groups ($p < 0.001$). The differences between the numbers of children in the three groups were not statistically significant.

DISCUSSION

Failed back surgery syndrome can be defined as dissatisfaction due to the unfulfilled preoperative expectations of the patient or the surgeon as a consequence of persistent or recurrent continuation of pain after one or several surgical interventions (9). Failed back surgery occurs in 10% to 40% of cases after lumbar surgery (3,6,9). When the 80,000 newly diagnosed patients every year are considered, the importance of the loss of working time due to this condition, as well as the personal and familial psychosocial problems associated with it, can be well understood (3,6).

Table III: Demographic Data

Answers	Age	Gender	Education	Occupation	Abode	Mean no. of children
Individual problems	<20	0	18 male	None	10	3.07 (0-8)
	20-40	14	Literate	Farmer	12	
	40-60	32	36 female	Primary School	18	
	60-80	8		Secondary School	12	
				High	8	
Distrust in surgery	<20	2	8 male	None	2	1.83 (0-4)
	20-40	18		Farmer	2	
	40-60	22	36 female	Primary	4	
	60-80	4		Secondary	6	
				High university	30	

In the etiology of failed back surgery, misdiagnosis, inadequate or incorrect surgery, infection, and instability are the leading factors (7). The treatment of this clinical situation, which is exhausting for both the patient and the physician, may necessitate recurrent surgery. It has been stated that instrumentation and fusion may be needed in order to decrease the number of recurrent surgeries, especially for the cases where inadequate decompression is applied and for those with severe degenerative spondylopathy (5,6).

The situation of patients with failed back surgery syndrome and physicians' fears of a potential failure have led spinal surgeons in the direction of fusion surgery. Consequently, an evolution of decompression surgery towards fusion surgery has started. According to one study, the rate of fusion application has increased 220% from the 1990 to 2001 (6). Reviews show that fusion surgery provides easier pain control than in the preoperative period and increases the quality of life, especially for patients who have lumbar listhesis or degenerative disk hernia with chronic back pain (2,4,5). Another study has stated that patients who have those cases with instrumented fusion felt significantly less pain when compared to the preoperative period and they were healthier physically and mentally, although they still complained of pain (1).

When the results of our survey are considered, there are two main reasons for the patients to refuse the operation. For the first group, the reasons are related to surgery: the patient is affected by his or her own experience or by what he or she has heard from other people, as well as by the fear of being disabled. In the second group, the patient does not accept surgery for reasons such as work overload, children, or lack of a person to care for him or her postoperatively. In accordance with this classification, it was identified that in the first group the rate of previous neurosurgery and the history of the dissatisfaction of the patient or an acquaintance was about 78%. This ratio was significantly higher than for the other group. When the total number of patients is considered, it is observed that 40% of patients (themselves or acquaintances) had a history of a neurosurgical operation and dissatisfaction with it. The previous operations consisted of lumbar instrumentation 52% (n = 26), microdiscectomy 24% (n = 12), and intracranial mass excision 4% (n = 2). Seventy percent of the patients who had themselves had a neurosurgical operation previously or had acquaintances who had such an operation were afraid of being disabled, and lumbar instrumentation was the most used preventive surgery. Sixty-six percent (n = 36) of the patients who refused operations for surgical reasons had acquaintances with lumbar instrumentation, and this rate was 50% (n = 2) in the group of patients who had rejected the operation for individual reasons. However, the difference between the rates was not statistically significant (p = 0.602).

When the data relating to the patients who refused the operation for personal reasons are evaluated, the group of patients who did not want to be operated on due to having small children were younger and had younger children when

compared to the other groups. The difference was significant, as anticipated. The number of children was not significantly different in the three groups, which shows the reliability of the survey.

These data demonstrate that most of the patients had experienced or heard about dissatisfaction after neurosurgical interventions. Although we assume that dissatisfaction is much more widespread in patients who have undergone lumbar instrumentation, it is also frequent in patients with lumbar microdiscectomy. The dissatisfaction of patients with their own neurosurgical operations may be considered to be partly objective, as it is their own declaration of their state. However, we cannot know objectively the extent of dissatisfaction among their acquaintances who had a surgical history about which they were dissatisfied, such that although they are found to benefit from the operation in the follow up, they consider it to have failed practically and make the others hesitate to be operated on by their feedback.

Where does this dissatisfaction originate from?

As with the reasons for rejecting the operation, this can be classified into two basic groups: reasons related to the patient and reasons related to the surgery.

The most important reason related to the patient is the heavy work commitment of patients regardless of their gender. The population of this region works hard, both at home and outside, and they consider this their lifestyle. Therefore, most of the patients did not obey the constraints placed on doing heavy work postoperatively. The obesity rate in Turkey is about 30% (10) and this also increases the prevalence of relapsed disc hernias, the need for revision after stabilization, and neighboring segment problems.

Another issue is the honesty of the patient in declaring dissatisfaction. It must be taken into account that some patients experience a secondary gain through their dissatisfaction. This secondary gain ranges from relieving themselves of familial responsibilities to demanding a disabled report from health committee, thereby requesting additional income. The exaggerated sharing of dissatisfaction certainly increases the patients' secondary gain.

Surgical reasons related to patient dissatisfaction can be explained in some ways. First of all, the indication may not be correct. Particularly in recent years, the income of physicians has been based on their operations, and private hospitals set the salaries of their physicians with reference to their number of operations. These issues make people aware of the exaggeration of indications as unnecessary operations cause dissatisfaction among the patients.

Another reason is performing operations without complete knowledge of spinal biomechanics. Despite the favorable results of fusion surgery in the literature, unfavorable results can also be interpreted as related to surgical incompetence. Physicians need to learn to evaluate patients completely, taking account of their ages, systemic problems, complaints,

and problems with spinal biomechanics. Whenever the physician is suspicious of an indication, he or she must consider minimally invasive approaches to treating the pain where necessary. Even when the physician is confident of the indication, he or she must be realistic while talking to the patient. Studies show that the best precaution against failed back surgery is defining the expectations of the patient and physician realistically (12).

CONCLUSION

Spinal surgery is a preferred subspecialty of neurosurgery because of its low mortality rate, and as it usually does not necessitate postoperative intensive care. The correct indication, multidisciplinary work by the physicians when needed, the correct definition of expectations when talking to the patient, and the application of minimally invasive interventions when necessary must be considered in order to increase patient satisfaction.

REFERENCES

1. Bentsen SB, Hanestad BR, Rustøen T, Wahl AK: Quality of life in chronic low back pain patients treated with instrumented fusion. *J Clin Nurs* 17(15):2061-2069, 2008
2. Carreon LY, Glassman SD, Howard J: Fusion and nonsurgical treatment for symptomatic lumbar degenerative disease: A systematic review of Oswestry Disability Index and MOS Short Form-36 outcomes. *Spine J* 8(5):747-755, 2008
3. Chan CW, Peng P: Failed back surgery syndrome. *Pain Med* 12(4):577-606, 2011
4. Glassman S, Gornet MF, Branch C, Polly D Jr, Pelozo J, Schwender JD, Carreon L: MOS short form 36 and Oswestry Disability Index outcomes in lumbar fusion: A multicenter experience. *Spine J* 6(1):21-26, 2006
5. Greenberg MS: Failed back surgery syndrome. In: Greenberg MS (ed), *Handbook of Neurosurgery*. Florida: Thieme Medical Publishers, 2010: 457-460
6. Martin BI, Mirza SK, Comstock BA, Gray DT, Kreuter W, Deyo RA: Are lumbar spine reoperation rates falling with greater use of fusion surgery and new surgical technology? *Spine* 32:2119-2126, 2007
7. Odabasi BB: The failed back surgery syndrome. *Turkiye Klinikleri J PM&R-Special Topics* 4(1):110-116, 2011
8. Postacchini F, Postacchini R. Operative management of lumbar disc herniation: The evolution of knowledge and surgical techniques in the last century. *Acta Neurochir Suppl* 108:17-21, 2011
9. Ragab A, Deshazo RD: Management of back pain in patients with previous back surgery. *Am J Med* 121(4):272-278, 2008
10. Satman I and Turdep working group: Turkey Diabetes Prevalence Workout: TURDEP-I ve TURDEP-II. 2011, Available at http://www.istanbul.edu.tr/itf/attachments/021_turdep.2.sonuclarinin.aciklamasi.pdf
11. Sonntag VKH, Vollmer DG, Shaffrey CI: Overview and historical considerations. In: Winn HR (ed), *Youmans Neurological Surgery*. Philadelphia: Elsevier Saunders, 2011: 2695-2699