



Short communication

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Investigation of medical malpractices in the field of orthopedics and associating factors in the cases referred to the legal medicine organization of Guilan province

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Abstract

Introduction: Medical malpractice is a type of treatment that fails to reach the standards of conventional medical treatment and as a result, the patient suffers injury. In addition to affecting the health of individuals, medical malpractice also has negative effects on the physicians' personal and social life. Studies show that despite advances in technology and medical sciences the number of malpractice complaints is increasing, according to studies, the highest count of malpractice complaints referred in the Legal medicine organization in Iran has been done against orthopedic specialists, which indicates the necessity of the present study.

Materials and Methods: In this descriptive and retrospective study, all complaints of medical malpractice in the field of orthopedics archived in the Legal Medicine Organization during 1391-1396 was examined. The method of data collection was through checklists and information gathered from the archived complaint files.

Results: Based on the findings of this study, from the beginning of 1391 to the end of 1396, 67 complaints were registered about orthopedic surgery. 49 patients were male and 18 were female. 17 were single and the rest were married. Of these, 40 patients were treated in public university centers, 10 in non-university government centers, and 17 in private centers. Of surgeries 17 were emergencies and 50 were elective. The site of injury in 29 patients was the upper limb and shoulder and 38 the lower limbs and pelvis. In total, out of 67 registered complaints, 38 were acquitted and 29 cases were found guilty of medical malpractice.

Conclusion: Among the registered surgery complaints in the Legal Medicine Organization of Guilan Province, the highest number of complaints were of surgeries operated on male patients. In addition, the highest number of complaints from married patients were related to cosmetic surgeries, elective surgeries, and surgeries performed in public university centers. More than 50% of the verdicts issued, held the practitioner responsible for medical malpractice. Malpractice verdicts had no significant correlation with the variables that were observed in this study

Keywords: General surgery, Forensic medicine, Malpractice complaints

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Introduction

According to the definitions, medical malpractice is a treatment that has not been done following the standards of conventional medical treatment, and as a result, the patient suffers physical injury, disability, or death (1). In addition to the devastating effects that medical malpractice has on the health of individuals in society, it can also have negative effects on the personal, familial, social, and professional lives of medical staff. These effects can range from psychological trauma and substance abuse to suicide.¹⁶ Some physicians have even considered well-resolved complaints as one of the most traumatic experiences of their lives (2). Another detrimental consequence of medical malpractice is the formation of “defensive medicine”, in which physicians, due to the threat of malpractice complaints, deviate from standard medical treatment, and seek unnecessary counseling and testing, which disrupts the trust between doctor and the patient and imposes great costs on the health system and the patient. Unfortunately, despite the negative consequences of medical malpractice on the health of individuals in society and the personal and professional life of medical staff, physicians and others involved in the treatment of patients are not aware of or have insufficient information about forensic medicine in which one of the most important topics is medical malpractice, especially malpractice that leads to death.

Whenever any of the stages of timely diagnosis, examination, treatment, follow-up, and counseling is not done according to the accepted medical standards and principles, the doctor has committed medical malpractice.

It is worth mentioning that in some cases, despite all the appropriate measures, diagnosis or the treatment is not completed properly, in which case the doctor has not committed any negligence (3-5).

To judge the incidence or absence of medical malpractice, the following should be considered: the physician must have accepted responsibility for the treatment of the patient and the patient must have suffered damage due to failure to comply with the technical and scientific standards (6). On the other hand, it should be noted that in spite of the physician's high skills and knowledge in his field of specialization,

and the treatment's compliance with scientific, technical, and ethical standards, in some cases it is still possible that the treatment won't lead to the desired results. Also, it should be added that not all physicians have the same knowledge (7).

According to studies, international reports indicate that, unfortunately, despite the recent developments in technology and medicine, the number of complaints against physicians is increasing (8). Studies conducted in Iran are also consistent with international studies. Several studies conducted in Iran have shown that the highest number of medical complaints referred to the Forensic Medicine Commission is related to orthopedics (9). The aforementioned problems led us to conduct the present study.

Materials and Methods

In this descriptive and retrospective study, after obtaining permission from the ethics committee of Guilan University of Medical Sciences and making the necessary coordinations with the forensic medicine department of Guilan University of Medical Sciences, all cases of medical malpractice complaints in orthopedics in the General Directorate of Forensic Medicine of Guilan Province from the beginning of 1391 to the end of 1396 were reviewed.

The method of data collection was checklists using the files in the Medical Commission of the General Directorate of Forensic Medicine of Guilan Province. The checklist used included the patient's age, sex, and marital status, type of medical center, location of the injury, type of surgery, causes of negligence, the way they were informed of the malpractice, verdict issued, and injuries caused by medical negligence. After collecting file information through a study checklist, the data were entered into SPSS software version 21 and analyzed through appropriate statistical methods.

To comply with medical ethics and confidentiality of information, the names and surnames of the plaintiffs and their addresses were not registered.

Results

Based on this study, from the beginning of 1391 to the end of 1396, 67 cases of orthopedic surgery complaints were referred to the Forensic Medicine

Organization of Guilan Province. Of these, 49 cases were related to male patients and 18 cases were related to female patients. Out of 67 cases reviewed, 29 cases were found guilty of medical malpractice. In 38 cases, the doctor was acquitted. None of the cases were terminated due to the patient's consent or conciliation.

The age range of patients in complaint files ranged from a minimum of 2 years to a maximum of 77 years, and most patients were between 40 and 59 years old. The mean age of patients in the current study was 39.67 and the standard deviation was 19.20.

Among the studied cases, 40 patients (59.70%) were operated in public university centers, 10 patients (14.9%) in non-university government centers, and 17 patients (25.3%) in Private clinics. none of the patients underwent surgery at charity medical centers.

50 out of 63 cases of complaints were related to elective surgeries and only in 17 cases (25/3%), surgery was performed as an emergency.

The highest number of injuries due to medical malpractice was present in the lower extremities and pelvis in 21 cases, followed by the upper extremities and shoulders in 17 cases. In none of the cases were there any complaints of spinal injuries.

Also, most of the injuries caused by medical malpractice were malunion (18), restriction of movement (16), and surgical site infection (9).

Most causes of malpractice were related to negligence in practice in 18 cases followed by carelessness in practice in 7 cases.

The percentage of malpractice by gender in the reviewed cases was 51% in male patients and 22% in female patients, which was statistically significant ($P = 0.035$) (Table1, 2 and 3).

Table 1. Frequency distribution based on demographic characteristics and malpractice information.

	Individual Variables	Frequency	Percent
Age	<20	12	17.91
	20-39	20	29.85
	40-59	27	40.30
	>60	8	11.94
	Mean value \pm Standard deviation	Least	Most
	39.67 \pm 19.20	2.00	77.00
Sex	Male	49	73.13
	Female	18	26.87
Marital status	Single	17	25.37
	Married	50	74.63
Medical center	Public educational	40	59.70
	Public non-educational	10	14.93
	Private	17	25.37
Site of injury	Upper extremities and shoulders	29	43.28
	Lower extremities and pelvis	38	56.72
Type of surgery	Emergency	17	25.37
	Elective	50	74.63
Cause of malpractice*	Negligence	18	64.29
	Carelessness	7	25.00
	Non-compliance with government systems	1	3.57
	Lack of skill	1	3.57
	A combination of the above	1	3.57
Information of malpractice	By doctors and other specialists	26	38.81
	By other individuals	41	61.19
Verdict	Not guilty	38	56.72
	Guilty	29	43.28
Injuries caused by malpractice**	Nonunion	6	10.91
	Malunion	18	32.73
	Movement restriction	16	29.09
	Surgical site infection	9	16.36
	Vascular injury	1	1.82
	Amputation	4	7.27
	Systemic	1	1.82

*Chi-squared test

**Fisher's exact test

Table 2. Frequency distribution of demographic characteristics based on cast verdict.

		Verdict						P
		Not guilty		Guilty		Sum		
		Freq.	%	Freq.	%	Freq.	%	
Age	<20	6	50.0	6	50.0	12	100.0	0.596**
	20-39	10	50.0	10	50.0	20	100.0	
	40-59	18	66.7	9	33.3	27	100.0	
	>60	4	50.0	4	50.0	8	100.0	
	Sum	38	56.7	29	43.3	67	100.0	
Sex	Male	24	49.0	25	51.0	49	100.0	0.035*
	Female	14	77.8	4	22.2	18	100.0	
	Sum	38	56.7	29	43.3	67	100.0	
Marital Status	Single	8	47.1	9	52.9	17	100.0	0.353*
	Married	30	60.0	20	40.0	50	100.0	
	Sum	38	56.7	29	43.3	67	100.0	

Table 3. Frequency distribution of type of medical center, site of injury, type of surgery, how to obtain information about malpractice, and injuries caused by malpractice based on the issued verdict.

		Verdict						P
		Not guilty		Guilty		Sum		
		Freq.	%	Freq.	%	Freq.	%	
Medical center	Public educational	21	52.5	19	47.5	40	100.0	0.405*
	Public non-educational	5	50.0	5	50.0	10	100.0	
	Private	12	70.6	5	29.4	17	100.0	
	Sum	38	56.7	29	43.3	67	100.0	
Site of injury	Upper extremities and shoulders	17	58.6	12	41.4	29	100.0	0.783*
	Lower extremities and pelvis	21	55.3	17	44.7	38	100.0	
	Sum	38	56.7	29	43.3	67	100.0	
Type of surgery	Emergency	10	58.8	7	41.2	17	100.0	0.839*
	Elective	28	56.0	22	44.0	50	100.0	
	Sum	38	56.7	29	43.3	67	100.0	

Information of malpractice	By doctors and other specialists	0	0.0	26	100.0	26	100.0	<0.001*
	By other individuals	38	92.7	3	7.3	41	100.0	
	Sum	38	56.7	29	43.3	67	100.0	
Injuries caused by malpractice**	Nonunion	1	16.7	5	83.3	6	100.0	0.218**
	Malunion	7	38.9	11	61.1	18	100.0	
	Movement restriction	11	68.8	5	31.3	16	100.0	
	Surgical site infection	5	55.6	4	44.4	9	100.0	
	Vascular injury	0	0.0	1	100.0	1	100.0	
	Amputation	2	50.0	2	50.0	4	100.0	
	Systemic	0	0.0	1	100.0	1	100.0	
	Sum	26	47.3	29	52.7	55	100.0	

*Chi-squared test

**Fisher's exact test

Discussion

In the study of Adibzadeh et al. (1), Out of 135 cases reviewed, 41 (30.37%) voted against malpractice, and 69.63% of the verdicts were issued on the doctor's innocence, which is consistent with the present study.

In the study of Karimi Nasab et al. (10), Out of 64 cases reviewed, 49 cases resulted in medical malpractice (76.6%), and in 15 cases (23.4%) physicians were acquitted.

In the study of Dr. Barzegar et al. (11) In 67.5% of the studied cases, the doctor was found innocent and in 32.5% of the cases, the doctor was guilty of medical malpractice.

In the study of Fallah Karkan et al. (12), out of 49 cases against orthopedic specialists, in 41 cases (83.67%) the vote was to acquit the suspect or prohibit prosecution, and only in 8 cases (16.32%), the vote was medical malpractice.

In the study by King et al. (13), 42% of the patients were male and 57% of the patients were female. Unlike the present study, there was no significant difference between the sexes.

In the study by Adibzadeh et al. (1), 54.1% were male and 45.6% were female. As can be seen in this study, there is also no significant difference between the female and male sexes.

In the study of Karimi Nasab et al. (10), 76.6% were male patients and 23.4% were female patients. This difference is statistically significant.

In the present study, 73.13% of the cases were male patients, and 26.87% of the cases were female which is consistent with the findings of the study done by Karimi Nasab et al.

The percentage of malpractice in terms of age group and marital status in the present study was not statistically significant.

In the study of Sadr et al. (14) 32.1% of the complaints, which included 63 cases, were suggested by physicians and other specialists, and 67.9% of the individuals were provoked to complain through other individuals.

In the present study, the frequency of malpractice did not correlate with either the medical center, location of the injury, or injuries due to medical malpractice.

Conclusion

The case outcomes of malpractices of patients who noticed suspicious practice through other doctors and specialists were significantly more against the defendant than those who were encouraged through other people; to such a degree that in 100% of the cases that malpractice was suggested by the practitioners, the defendant was found guilty. While only 7.3% of cases that were encouraged through other individuals were against the defendant. This finding is statistically significant with $P < 0.001$.

Suggestions

According to the findings of the present study and the increasing trend of complaints against physicians, it seems that there is a need for further research on medical malpractice and complaints referred to forensic medicine. On the other hand, it seems that the more familiar the physicians and other medical staff are with the basics of forensic medicine and the individual and social consequences of medical malpractice for the patient and the medical staff, the less incidence of medical malpractice as a result of improvement and standardization of the treatment process.

Author contributions

AB, MS, EKL, NY, and **MHB** wrote and completed the article. **AB** designed and edited the manuscript. All authors confirmed the final edited version.

Conflict of interest

The authors declare that they have no conflicts of interest.

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