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ORIGINAL ARTICLE

The role of general surgery consultations on patient diagnosis and treatment in the Tertiary Medical Center

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Abstract

Background: The field of general surgery is an important one in medicine. It includes the systems and organs connected to practically every bodily part. Because of this, general surgery is frequently requested for consultation and has a significant role in emergency service applications. The study's objective is to evaluate general surgery consultations based on their specific attributes.

Methods: A retrospective analysis was performed on 814 patients who were consulted at our hospital's general surgery clinic between January and June 2021. The departments requesting consultation, the reasons for the consultation, the examinations requested before and after the consultation, and the decisions made after the consultation were evaluated.

Results: The department that required the most consultation from the general surgery branch was the emergency department with 91.5% the most common reason for consultation is nonspecific abdominal pain with 18.1% has been seen. General surgery consultation in patients presenting with abdominal specific complaints, previously ultrasonography and computed tomography were requested in 88.6% of patients.

Conclusion: The fact that physicians request unnecessary consultations and resort to advanced imaging examinations with the reservation of malpractice leads to an increase in both cost and intensity for the health system. Requesting a consultation in conditions where it is more necessary will relieve the intensity of the health system.

Keywords: General Surgery, Consultation, Emergency Department, Malpractice.

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INTRODUCTION

Seeking the advice of a different medical professional regarding a diagnosis, course of therapy, or follow-up for a procedure requiring medical intervention is known as consultation (1). The accountable doctor shall submit the case in writing to the appropriate department following the patient's evaluation and determination that the patient lacks information about the case or needs to see someone in a different area of competence. Likewise, following the patient's examination, the pertinent department ought to notify the supervising physician in writing (2, 3). Ethically, the primary physician should comply with the recommendations given by the consulted physician (4, 5, 6). General surgery is a major branch of medicine. It covers organs and systems that are associated with almost every part of the body. Therefore, general surgery has a key place in emergency department admissions and is frequently asked for consultation. Still, research on this subject remains very limited in the literature (1, 7).

A efficient consultation process is beneficial to the diagnostic and treatment procedure. However, unnecessary consultation requests lead to increased medical costs and expose patients to pointless imaging procedures in the process of making a diagnosis. (8). Delays in diagnostic or treatment procedures may result from this.

The current study focuses into the problems of consultation, treatment options, required examinations, and necessity of consultation in order to analyze and categorize the consultations that the department of general surgery receives requests for.

MATERIALS AND METHODS

This study was approved by the clinical research Ethics Committee of the Ankara Education and Research Hospital (Date: 29.09.2021, Number: 757). 814 patients who were consulted to our hospital's general surgery clinic between January 1 and June 1, 2021, were the subject of a retrospective analysis. We recorded the departments that requested consultation, the reasons for asking for consultation, the examinations requested before consultation, the examinations requested by the general surgeon after consultation, and the outcomes of consultation. We also reanalyzed the reasons for consultation under abdomen-specific complaints. This group included In-Vehicle Traffic Accident, Acute Appendicitis, Nonspecific Abdominal Pain, Nausea, Trauma, Diverticulitis, Stab or Cut Wounds, Gastrointestinal Bleeding, Foreign Body Ingestion, Ileus, Incarcerated Hernia, Constipation, Cholangitis, Choledocholithiasis, Cholelithiasis, Pancreatitis, and Falls from Height.

Statiscal Analyses

We analyzed the data using the SPSS 23.0 software (Statistical Package for Social Sciences). We used descriptive statistics to evaluate the data. Categorical variables are given as numbers and percentages, and continuous variables as mean ± standard deviation. Ethics Committee Approval(29.09.2021, E-21-757 , Ankara Training And Research Hospital). This study was conducted according to Helsinki declaration.

RESULTS

We looked into a total of 814 consultations. The mean age of the patients was 49±20 years. 406 (49.9%) of the patients were male and 408 (50.1%) were female. Regarding the distribution of departments that requested consultation from general surgery, the emergency department ranked first with 745 patients (91.5%), followed by internal medicine with 17 (2.1%), anesthesia – intensive care unit with 15 (1.8%), and infectious diseases clinic with 10 (1.2%). Table 1 shows the distribution of all departments that requested consultation from general surgery.

Table 1. Distribution of Departments That Requested Consultation from General Surgery

Department	Number	%*
Emergency Department	745	91.5
Internal Medicine	17	2.1
Anesthesia – ICU	15	1.8
Infection	10	1.2
Internal Medicine – ICU	7	0.9
Gynecology and Obstetrics	7	0.9
Cardiovascular Surgery	6	0.7
Orthopedics and Traumatology	4	0.5
Plastic Surgery	2	0.2
Urology	1	0.1
Total	814	100

**Column percentage*

ICU: Intensive Care Unit

We divided the cases that were consulted from the general surgery clinic into 23 groups by their preliminary diagnosis/diagnosis. The most common pre-diagnoses/diagnoses for consultation were nonspecific abdominal pain (18.1%), cholecystitis (15.0%), perianal diseases (14.5%), and acute appendicitis (13.4%). Table 2 shows the distribution of reasons for requesting consultation from general surgery.

Table 2. Distribution of Reasons for Requesting Consultation from General Surgery

Reasons for Requesting Consultation	Number	%*
Nonspecific Abdominal Pain	147	18.1
Cholecystitis	122	15.0
Perianal Diseases	118	14.5
Acute Appendicitis	109	13.4
Ileus	62	7.6
Incarcerated Hernia	54	6.6
Cholelithiasis	40	4.9
Breast – Axilla Complaints	28	3.4
Chronic Wound	21	2.6
Postoperative	19	2.3
Pancreatitis	17	2.1
Gastrointestinal Bleeding	13	1.6
Diverticulitis	11	1.4
Choledocholithiasis	9	1.1
Nausea	8	1.0
Constipation	6	0.7
Fall from Height	5	0.6
Inguinal Abscess	5	0.6
Stab – Cut Wounds	4	0.5
In-Vehicle Traffic Accident	4	0.5
Fournier's Gangrene	3	0.4
Cholangitis	2	0.2
Foreign Body Ingestion	2	0.2
Rectus Sheath Hematoma	2	0.2
Stoma Bleeding	2	0.2
Trauma	1	0.1
Total	814	100

**Column percentage*

Table 3 shows the distribution of the required tests before and after general surgery consultation. Before consultation, the most frequently requested tests were blood test (76.4%), ultrasound (43.5%), and computed tomography (42.4%). After evaluation by a general surgeon, the most frequently requested tests were blood test (11.5%) and computed tomography (9.2%). Besides, the general surgery clinic requested further consultation from other departments in 168 patients, most frequently from internal medicine (93 patients, 55.3%) and gynecology and obstetrics (36 patients, 21.4%).

Table 3. Distribution of Required Tests Before and After General Surgery Consultation

Requested Test (n=814)	Before General Surgery Consultation	After General Surgery Consultation
	Number (%)	Number (%)
Blood Test	622(76.4)	94(11.5)
Complete Urinalysis	109(13.4)	4(0.5)
Standing Direct Abdominal X-Ray	69 (8.5)	19(2.3)
Ultrasound	354 (43.5)	8(1.0)
Computed Tomography	345 (42.4)	75(9.2)
Other Imaging Methods (MRI, MRCP, RDUS)	0(0.0)	7(0.8)
Endoscopy/Colonoscopy/ERCP	0(0.0)	4(0.5)

We observed that 18.9% of all patients examined by general surgery were discharged after outpatient treatment, 15.6% were hospitalized without emergency surgery, and 15.4% were taken to emergency surgery. In 50.1% of the patients no pathology indicating emergency surgery was found (Table 4).

Table 4. Distribution of General Surgery Consultation Outcomes

General Surgery Consultation Outcomes (n=814)	Number (%)
Emergency Surgery	125(15.4)
Hospitalization Without Emergency Surgery	127(15.6)
Discharge After Outpatient Treatment	154(18.9)
No Pathology Requiring Emergency Surgery	408(50.1)

Table 5 presents the frequency of imaging requested from patients presenting with abdomen-specific complaints before general surgery consultation and the distribution of their consultation outcomes. Accordingly, imaging was requested in 88.6% of patients who presented with abdomen-specific complaints before general surgery consultation. After these patients were investigated by the general surgery clinic, 20.3% were indicated for emergency surgery, 20.1% were hospitalized without emergency surgery, 3.6% were discharged after outpatient treatment, and 56.0% displayed no pathology requiring emergency surgery.

Table 5. Frequency of Imaging Requested from Patients Presenting with Abdomen-Specific Complaints Before General Surgery Consultation and Distribution of Consultation Outcomes

		Number (%)
Imaging Requested Before General Surgery Consultation (n=616)		
	Yes	546(88.6)
	No	70(11.4)
Consultation Outcomes of Cases Requiring Imaging (n=546)		
	Emergency Surgery	111(20.3)
	Hospitalization Without Emergency Surgery	110(20.1)
	Discharge After Outpatient Treatment	19(3.6)
	No Pathology Requiring Emergency Surgery	306(56.0)

DISCUSSION

Recent years have seen an increase in the number of specializations and the general expansion of subspecialties in medicine, making comprehensive patient assessments increasingly challenging. Doctors are referring to consultations more frequently as a result. Additionally, because they want to share responsibility and are wary of making mistakes, doctors who want to avoid malpractice frequently use consultations excessively. Physicians are pushed towards more advanced imaging modalities mostly by the need to comply with patient expectations and avoid malpractice. (8, 9). Certain imaging modalities, such as computed tomography, magnetic resonance imaging, and ultrasonography, result in financial drawbacks when they are requested more frequently than required out of concern about malpractice (10). This raises the workload, reduces the amount of time spent with each patient, and raises the cost of healthcare. The concept of consultation should not be considered simply an exchange of treatment ideas between two physicians. Complicated cases that may involve numerous branches of medicine could require a multidisciplinary evaluation for planning treatment.

In this study, we found that general surgery was the most often consulted by the emergency department. The emergency department is one of the most crucial departments because of its demanding and stressful work environment, high admission rate during the day, and need for precise application of the triage mechanism. Located in a densely populated area, our hospital is a tertiary healthcare facility. Our hospital's emergency room received **1200** patient admissions each day on average during the study period. Overcrowding, longer waiting times, unnecessary testing and treatment, and increased emergency healthcare expenses are the outcomes of needless emergency admissions for non-emergency patients (11).

Given the national and international literature on the subject, there seem to be a limited number of studies on general surgery clinic consultations. In the present research, 50.1% of cases were not indicated for emergency surgery, treatment, or hospitalization with follow-up. Similar to our findings, one retrospective research found

that 62% of patients had no pathology requiring urgent surgical intervention (1). Another study from a thoracic surgery clinic reported that consultation requests mostly came from the emergency department with a rate of 51%, and 42% of these cases displayed no pathology concerning the thoracic surgery clinic (12).

In the current study, ultrasonography or computed tomography was requested in 546 patients with abdomen-specific complaints in addition to physical examination before consulting general surgery. After evaluations by the general surgery clinic, 20.3% of these cases required emergency surgery, while 56% did not receive indirect surgical intervention or follow-up. Despite the clinical benefits and advantages of computed tomography, researchers believe that it is overused (13). Computed tomography and abdominal ultrasonography are costly examinations that are laborious and time-consuming for the radiology department. Also, considering the radiation emitted from computed tomography, the cumulative radiation risk will obviously increase patients' cancer risk in the future. Research shows that 1-2% of all cancers in the UK and the USA could be associated with ionizing radiation exposure from computed tomography, one of the greatest sources of exposure to radiation (9, 14).

A medical term that has recently come into use attracts attention. Defensive Medicine. Defensive medicine is defined as a physician's deviation from what is considered usual or good practice in order to reduce or avoid complaints or criticism by patients or their families (15). The United States Congress has expanded this definition to include the act of ordering tests, procedures, or avoiding high-risk patients or procedures in order to reduce malpractice liability (16). According to the results of the study conducted in the United Kingdom, 59% of doctors practice defensive medicine by ordering unnecessary tests and feel safe. In addition, 55% of doctors stated that they asked for consultation from other departments unnecessarily(17). A study of more than 1200 orthopedists in the USA reveals a bigger problem. 96% of the respondents stated that they practiced defensive medicine by ordering unnecessary imaging, laboratory tests, consultation or hospitalization to avoid malpractice. The cost of defensive medicine practiced by orthopedists has been estimated to cost approximately 2 billion dollars per year(18).

Defensive medicine practices to avoid malpractice are likely to have irreversible effects on the healthcare system. Accordingly, unnecessary consultations and imaging methods will increase the cost and workload of health care and put a strain on the health system.

Requesting consultations and diagnostic tests only for the appropriate patients and ensuring that the triage mechanisms in emergency units work efficiently have a significant role in classifying patients based on their urgency or relevant department and reducing the financial burden (4, 19).

The general surgery clinic is active every hour of the day and every day of the week, responding to multiple needs, both elective and urgent. Doctors who request more examinations and consultations than necessary because they are afraid of malpractice or incomplete procedures further increases the workload of general surgery clinics. Improving the overall quality of basic medical education can reduce workload and consultations between units. Finally, policymakers should introduce and enforce regulations that provide legal support to physicians and allow them to practice their profession with more freedom.

Declarations

The authors have no conflicts of interest to declare. The authors declared that this study has received no financial support.

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REFERENCES

1. Kahramanca Ş, Kaya O, Azılı C, Güzel H, Özgehan G, İrem B. The role of general surgery consultations in patient management. Ulus Cerrahi Derg. 2013;29:20-24.
2. Stolle JK, Mascha EJ, Kester L, Haney D. Randomized controlled of physician-directed versus respiratory therapy consult service directed respiratory care to adult non-ICU inpatients. Am J Respir Crit Care Med. 1998;158:1068-1075.
3. Lie RK. The ethics of the physician-patient relationship. Ethical Perspect. 1997;4:263-270.
4. Kayabaşı S, Gül F. Kulak Burun Boğaz hekimlerine yapılan konsültasyon nedenleri ve sonuçları: Retrospektif bir analiz. Harran Unıv Tıp Fak Derg. 2019;16:143-147.
5. Işıl C, Türk Ş, Sayın P, Çınar S, Oba S. Hastanemiz yoğun bakım ünitesinden acil konsültasyon istemlerinin değerlendirilmesi. Med Bull Sisli Etfal Hosp 2012;46:49-52.

6. Özkur E, Altunay İ, Şekerlisoy G, Erdem Y. 3. Basamak bir hastanenin acil servisindeki dermatoloji konsültasyonlarının değerlendirilmesi. Med Bull Sisli Etfal Hosp 2020;54:197–200
7. Peksöz R, Bayar, B. Türkiyenin doğusunda II. basamak bir devlet hastanesinin acil genel cerrahi hasta profili. Euroasia. App. Sci. 2020;7:47–54.
8. Larson DB, Johnson LW, Schnell BM, Salisbury SR, Forman HP. National trends in CT use in the emergency department: 1995–2007. Radiology 2010;258:164–73.
9. Korley FK, Pham JC, Kirsch TD. Use of advanced radiology during visits to US emergency departments for injury-related conditions, 1998–2007. JAMA 2010;304:1465–71.
10. Dick EA, Varma D, Kashef E, Curtis J. Use of advanced imaging techniques during visits to emergency departments--implications, costs, patient benefits/risks. Br J Radiol. 2016;89:20150819.
11. Fiorentino M, Mulles S, Cue L, Merchant AM, Tufariello A, Cummings D et al. High acuity of postoperative consults to emergency general surgery at an urban safety net hospital. J Surg Res. 2021;257:50-55.
12. Çobanoğlu U. Bir üniversite hastanesinde göğüs cerrahisi konsültasyonu yapılan olguların değerlendirilmesi. Türk Toraks Dergisi 2009;10:117-121.
13. Brenner DJ, Hall EJ. Computed tomography–an increasing source of radiation exposure. NEJM 2007;357:2277–84.
14. Fazel R, Krumholz HM, Wang Y, Ross JS, Chen J, Ting HH, et al. Exposure to low-dose ionizing radiation from medical imaging procedures. N Engl J Med 2009;361:849–57.
15. Toker A, Shvarts S, Perry ZH. et al. Clinical guidelines, defensive medicine, and the physician between the two. Am J Otolaryngol. 2004;**25**:245–250.
16. Corrigan J, Wagner J, Wolfe L. et al. Report from congress medical malpractice reform and defensive medicine. *Cancer Invest.* 1996;**14**:277–284.
17. Ortashi O, Virdee J, Hassan R, Mutrynowski T, Abu-Zidan F. The practice of defensive medicine among hospital doctors in the United Kingdom. *BMC Med Ethics*. 2013;14:42.
18. Sethi MK, Obremskey WT, Natividad H, Mir HR, Jahangir AA. Incidence and costs of defensive medicine among orthopedic surgeons in the United States: a national survey study. *Am J Orthop (Belle Mead NJ)*. 2012;41:69-73.
19. Egnew TR, Wilson HJ. Role modeling the doctor-patient relationship in the clinical curriculum. Fam Med 2011; 43: 99-104.