

GÖĞÜS CERRAHİSİNDE MULTİDİSİPLİNER YAKLAŞIM: 10 YILLIK ÇALIŞMA

MULTIDISCIPLINARY APPROACH IN THORACIC SURGERY: A 10 - YEAR STUDY

Adem GENCER, Suphi AYDIN, Ahmet DUMANLI, Gürhan ÖZ

Afyonkarahisar Sağlık Bilimleri Üniversitesi Tıp Fakültesi, Göğüs Cerrahisi Ana Bilim Dalı

ÖZET

AMAÇ: Multidisipliner yaklaşım her tıbbi bölümde olduğu gibi göğüs cerrahisi bölümünde de son derece önemlidir. Bu çalışmanın amacı, göğüs cerrahisi bölümünün multidisipliner yaklaşımdaki yerini ve diğer bölümlerle olan ilişkilerini konsültasyon kayıtları üzerinden ortaya koymaktır.

GEREÇ VE YÖNTEM: 01.01.2013 - 31.12.2022 tarihleri arasında (10 yıllık bir dönemde) Göğüs Cerrahisi Anabilim Dalı'ndan istenen konsültasyonlar ve Göğüs Cerrahisi Anabilim Dalı'nın istediği konsültasyonlar hastane bilgi yönetim sisteminden elde edilmiş ve tanımlayıcı istatistiksel yöntemlerle analiz edilmiştir.

BULGULAR: 01.01.2013 - 31.12.2022 tarihleri arasında göğüs cerrahilerinden en çok konsültasyon talep eden bölüm 2793 (%38,78) konsültasyon ile acil servis olmuştur. Bu dönemde göğüs cerrahisi en çok anesteziyoloji ve enfeksiyon hastalıkları bölümlerinden konsültasyon talep etmiştir (n = 1638 (%29,97) ve 1104 (%17,42), sırasıyla).

SONUÇ: Göğüs cerrahisi travma ekibinin bir parçasıdır ve aynı zamanda akciğerin cerrahi hastalıklarını tedavi eden bölümdür. Bu nedenle özellikle acil servisler ve göğüs hastalıkları bölümleri tarafından göğüs cerrahisi konsültasyonu talep edilmektedir. Göğüs cerrahisi bölümü anesteziyoloji, göğüs hastalıkları ve kardiyoloji bölümleri ile yakın temas halindedir ve özellikle ameliyat öncesi değerlendirme için bu bölümlerden çok sık konsültasyon istenmektedir. COVID-19 ile bu preoperatif ekibe enfeksiyon hastalıkları da eklenmiştir.

ANAHTAR KELİMELE: Multidisipliner yaklaşım, Multidisipliner ekip, Göğüs cerrahisi, Konsültasyon.

ABSTRACT

OBJECTIVE: The multidisciplinary approach is extremely important in the thoracic surgery department, as it is in every medical department. The aim of this study was to reveal the place of the department of thoracic surgery in the multidisciplinary approach and its relations with other departments through consultation records.

MATERIAL AND METHODS: Consultations requested from the other departments (inbound) and by the thoracic surgery department (outbound) in a period of 10 years (January 1, 2013 and December 31, 2022) were obtained from the hospital information management system and analyzed by descriptive statistical methods.

RESULTS: In the 10-year period, the department that requested the most consultations from thoracic surgeons was the emergency department, with 2793 (38.78%) consultations. In this period, thoracic surgery mostly requested consultation from the anesthesiology and infectious diseases departments (n = 1638 (29.97%) and 1104 (17.42%), respectively).

CONCLUSIONS: Thoracic surgery is a part of the trauma team and is also the department that treats surgical diseases of the lung. Therefore, thoracic surgery consultation is requested especially by emergency services and chest diseases departments. The thoracic surgery department is in close contact with the anesthesiology, pulmonology, and cardiology departments and frequently requests consultation from these departments, especially for preoperative evaluation. With COVID-19, infectious diseases were also added to this preoperative team.

KEYWORDS: Multidisciplinary approach, Multidisciplinary team, Thoracic surgery, Consultation.

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Yazışma Adresi / Correspondence: Dr. Öğr. Üyesi Adem GENCER

Afyonkarahisar Sağlık Bilimleri Üniversitesi Tıp Fakültesi, Göğüs Cerrahisi Ana Bilim Dalı

E-mail: dr.ademgencer@gmail.com

Orcid No (Sırasıyla): 0000-0003-1305-6524, 0000-0003-2102-0484, 0000-0002-5768-7830, 0000-0003-1976-9488

Etik Kurul / Ethical Committee: Afyonkarahisar Sağlık Bilimleri Üniversitesi Tıp Fakültesi Etik Kurulu (03.02.2023/2023-96).

INTRODUCTION

A multidisciplinary approach refers to an integrated approach by medical and allied healthcare professionals to provide individualized treatment plans for patients. It involves the collaboration and coordination of multiple healthcare disciplines to improve patient outcomes and satisfaction (1). One of the best indicators of the relationship between medical departments, namely the multidisciplinary approach, is consultations. Consultation refers to the process in which the primary physician, who assumes the role of diagnosing and treating patients, seeks advice from physicians specializing in relevant fields regarding a specific matter pertaining to the patient. Through this process, the primary physician obtains additional knowledge and technical support (2).

Although there are many publications in the literature examining consultations in the departments of chest diseases (3, 4), emergency department (5, 6), general surgery (7), internal medicine (2), dermatology (8, 9), ophthalmology (10), plastic surgery (11), anesthesiology (12), physical medicine and rehabilitation (13, 14) and psychiatry (15), there are not many publications examining consultations in the field of thoracic surgery (16).

The objective of this study is to examine the role of the thoracic surgery department within a multidisciplinary framework and its interactions with other departments. Analyzing the consultations that the thoracic surgery department has requested and provided will help achieve this.

MATERIAL AND METHODS

Study Design

The records of the consultations made between January 1, 2013, and December 31, 2022 (10 years) from thoracic surgery to other departments and to the thoracic surgery department were retrieved as "bulk data" from the hospital information management system database used in our university hospital. Erroneous and incomplete records, cancelled records, and duplicate records were removed from the dataset and manually checked in the hospital information management system.

Afterwards, the records obtained were divided into two groups; consultations from other departments to thoracic surgery (inbound consultations) and consultations from thoracic surgery to other departments (outbound consultations). The patient's age, gender, date, and department information were taken into consideration.

Ethical Committee

The study was approved by the local ethics committee (Code: 2011-KAEK-2, Meeting: 2023/2, No: 96).

Statistical Analysis

The data were collected with Microsoft Excel for Mac (Microsoft Corp., USA). Data analysis and figures were made using Python 3.9.13 with Pandas 1.4.4 and Seaborn 0.12.2 libraries. The results obtained from the study were presented using descriptive statistical methods (frequency, percentage, mean, and standard deviation).

RESULTS

After removing inappropriate consultation records, a total of 12667 consultation records were identified. It was determined that 7202 consultations were requested from the thoracic surgery department (inbound) and 5464 consultations were requested from the other departments (outbound) in about a 10-year period between January 1, 2013, and December 31, 2022. Annual inbound and outbound consultation distributions are shown in (Figures 1).

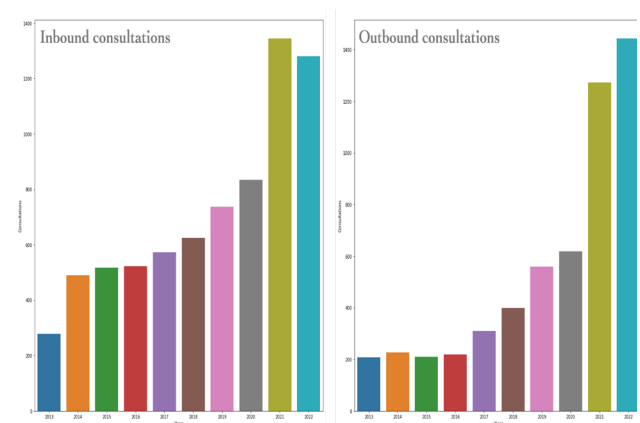


Figure 1: Annual inbound and outbound consultations

Of a total of 7202 inbound consultations, 68.12% were male and 31.88% were female patients (n = 4906 and 2296, respectively).

The mean age of the consulted patients was 52.97 ± 19.51 . For 5464 outbound consultations, 66.01% were male and 33.99% were female ($n = 3607$ and 1857 , respectively). Detailed demographic information on inbound and outbound consultations was given in **Table 1**.

Table 1: Demographics of consultations

	Inbound		Outbound		Total	
	n	Age*	n	Age*	n	Age*
Male	4906 (68.12%)	52.24 ± 19.52	3607 (66.01%)	56.20 ± 17.95	8514 (67.21%)	53.92 ± 18.97
Female	2296 (31.88%)	54.53 ± 19.42	1857 (33.99%)	54.15 ± 17.61	4153 (32.79%)	54.36 ± 18.63
All	7202 (56.86%)	52.97 ± 19.51	5464 (43.14%)	55.51 ± 17.86	12667	54.06 ± 18.86

* Mean and standart deviation

In the 10-year period, the department that requested the most consultations from thoracic surgeons was the emergency department, with 2793 (38.78%) consultations (**Table 2**).

Table 2: Top 10 departments

Inbound	Outbound
Emergency Medicine (38.7%)	Anesthesiology (29.9%)
Pulmonology (15.3%)	Infectious Disease (17.4%)
Oncology (7.9%)	Cardiology (12.4%)
Anesthesiology (6.8%)	Pulmonology (11.4%)
General Surgery (5.5%)	Internal Medicine (3.4%)
Neurosurgery (5.0%)	Oncology (3.2%)
Orthopedics (3.7%)	General Surgery (3.1%)
Internal Medicine (3.0%)	Neurology (2.5%)
Hematology (1.4%)	Endocrinology (2.4%)
Cardiology (1.3%)	Neurosurgery (1.7%)
Others (11.4%)	Others (12.6%)

In the same period, thoracic surgery mostly requested consultation from the Anesthesiology and Infectious Diseases departments ($n = 1638$ (29.97%) and 1104 (17.42%), respectively). The distribution of the inbound and outbound consultations according to the departments is given in (**Figure 2**).

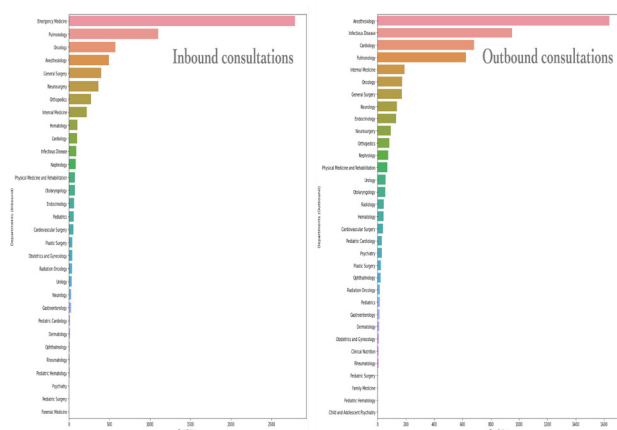


Figure 2: Distribution of inbound and outbound consultations

The distribution of the first 5 departments with the highest number of consultations by years is shown in (**Figure 3**).

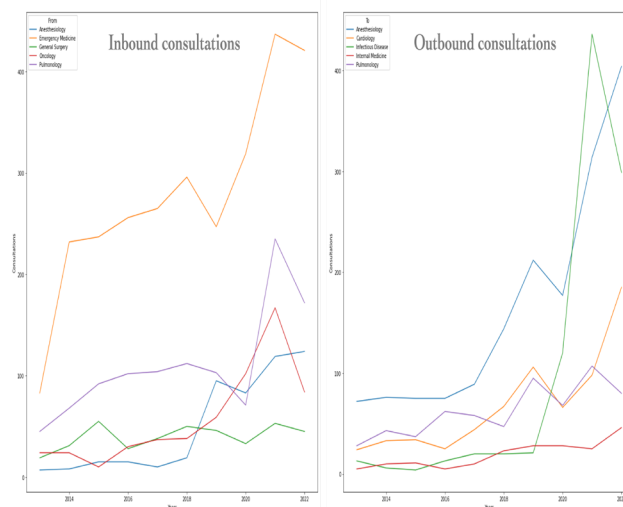


Figure 3: Annual distribution of top 5 departments

DISCUSSION

The thoracic surgery department, which deals with the surgical treatment of respiratory diseases and anatomical structures in the thorax, often works in a multidisciplinary manner like other departments in medicine (17). Consultations are an important parameter in determining the relationships between medical departments. Therefore, consultations with thoracic surgery (inbound consultations) help us understand the place of thoracic surgery in the multidisciplinary team, and outgoing consultations help us show which medical departments thoracic surgery may need in the treatment of patients.

In the last 10 years, a total of 7202 consultation requests have been received from other departments for the thoracic surgery department in our university hospital. During the same period, the number of consultations requested by thoracic surgery from other departments was 5464.

The role of thoracic surgery in a multidisciplinary approach: inbound consultations

The thoracic surgery department is an important part of the multidisciplinary team in the treatment of surgical diseases of the respiratory system and in the evaluation of patients with thoracic trauma. In a study conducted by Çobanoğlu on 388 patients, the department that requested the most consultation from thoracic

surgery was the emergency department, with 50.5 percent (16). In the same study, pulmonology among internal departments (14.43%) and general surgery among surgical departments (7.98%) required thoracic surgery support in the treatment of patients (16). In a similar study published by Gedik et al. and covering the years 2014 - 2020, it was noted that the consultation request from the emergency service was almost as much as the sum of all other departments (512 vs 666, respectively) and 79.6% of the consultations were requested due to trauma (18).

Similarly, in our study, we found that the department that requests the most consultation from thoracic surgery is the emergency department, followed by the chest diseases department (38.8% and 15.3%, respectively). The sum of these two departments was more than half of all consultations requested.

The fact that trauma and thoracic emergencies are the areas where thoracic surgery is most needed explains the high demand from the emergency department. From the perspective of thorax trauma, although surgical intervention may be required in specific circumstances, conservative therapy, oxygen treatment, pain control, and monitoring are more commonly used (19). A study analyzing patients with emergency thoracic trauma found that non-surgical treatments were required in 72.3% of blunt traumas and 22.4% of penetrating traumas (20). Based on the findings of another study, tube thoracostomy emerged as the predominant approach for the management of chest injuries, with a substantial majority of patients (80.5%) undergoing this particular intervention (21). Since the available data did not include surgical procedures and medical treatments performed on patients in the emergency department, we could not draw a conclusion in this direction.

Furthermore, whether surgical or non-surgical, patients with lung conditions are first referred to pulmonology and then to thoracic surgery, which makes it reasonable for the pulmonology department to be in second place.

The oncology department ranked third with 7.9%. Patients with lung cancer may require thoracic surgery for both surgical resection and pleural effusion. In addition, tho-

racic surgery support is important in the evaluation of thoracic masses in cancer patients.

In our university hospital, the majority of patients in need of intensive care are hospitalized in the anesthesia and reanimation department. A thoracic surgery evaluation may be required, especially for patients hospitalized in intensive care after cancer or trauma. Therefore, anesthesiology was the 4th most consulted department with 6.8%.

In our study, general surgery, neurosurgery, and orthopedics were the 5th, 6th, and 7th departments that requested thoracic surgery consultations (5.5%, 5.0%, and 3.7%, respectively). This is due to the fact that patients with thoracic trauma often have concurrent head trauma, abdominal trauma, and extremity trauma.

As a result, thoracic surgery is part of trauma-related departments such as the emergency department, anesthesia, general surgery, neurosurgery, and orthopedics. Thoracic surgery also collaborates with oncology and pulmonology in the evaluation of lung diseases and cancer patients. Thoracic surgery may also be frequently required in the treatment of trauma and cancer patients hospitalized in intensive care units in anesthesiology, pulmonology, oncology, general surgery, and neurosurgery departments.

Areas where thoracic surgery needs help: outbound consultations

Due to the difficulties in categorizing consultation reports, the purpose of outbound consultations could not be revealed in our study. However, since thoracic surgery is a surgical branch, most consultations were requested from anesthesia, pulmonology, and cardiology departments, probably for the preoperative evaluation of patients (29.9%, 12.4%, and 11.4%, respectively). Preoperative evaluation is essential to estimating postoperative outcome, optimizing medical therapy, and identifying the best perioperative strategy for the patient undergoing lung surgery (22). The preoperative evaluation and perioperative management of patients undergoing thoracic surgery require a multidisciplinary approach to assess the relative risks and benefits of surgery, optimize perioperative conditions, and plan the treatment regimen (23). The main

task of preoperative evaluation of surgical patients is undertaken by the anesthesiologist. However, many specialists (surgeon, pulmonologist, cardiologist, oncologist) are an important part of the multidisciplinary team in the risk assessment process (22). Similarly, in our study, anesthesiology, cardiology, and pulmonology were important departments in the preoperative evaluation.

The COVID-19 pandemic has had a significant impact on surgical procedures in thoracic surgery. Preoperative COVID-19 screening is crucial to ensure patient safety, reduce complications, and prevent transmission of the virus to healthcare workers and other patients (24). During the COVID-19 pandemic, preoperative COVID-19 screenings were performed by the infectious diseases department in our hospital. Therefore, the infectious diseases department has become a part of the preoperative team. Requesting an infectious diseases consultation from all patients to be operated on regardless of their medical condition, age, or medical status has made the infectious diseases department the second most requested consultation. The number of consultations (possibly due to preoperative consultations) has increased in recent years, corresponding to the increase in surgical procedures conducted in our department. However, it is clearly seen in Figure 4 that infectious disease consultations have increased much more due to the COVID-19 pandemic.

It should also be noted that, in addition to medical requirements, legal obligations and health strategies may also necessitate the consultation of another department. Even if there is no medical necessity, consultation can be requested from the thoracic surgery department just for legal procedures. Therefore, evaluating the medical relations between the departments based solely on the number of consultations may produce inaccurate results.

Similar to the literature (25), our study results show that the thoracic surgery department is a part of the trauma team. Thoracic surgeries are often needed in the emergency medicine and pulmonology departments. Moreover, the thoracic surgery department, which is a surgical department, is in close relationship with the anesthesiology, pulmonology, cardiology, and

oncology departments and frequently requests consultation from these departments, especially in terms of preoperative evaluation. It is also obvious that infectious diseases have also joined this team with the COVID-19 pandemic. Therefore, although thoracic surgery seems like an isolated surgical department, it is part of the multidisciplinary team in patient treatment. We believe that these types of studies will also contribute to the planning of health services, but studies that include detailed data for the entire nation or are at least multi-centered will yield more accurate results.

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