Volume 4, Issue 4, April 2026 ISSN (E): 2938-3765

IMPACT OF SPECIALIZED ONCOLOGY CENTERS ON EMERGENCY SURGICAL OUTCOMES IN PATIENTS WITH COMPLICATED MALIGNANCIES

Aziziy A. A.[1,2],
Abdikhakimov A. N.[2],
Abdikhakimov U. N.[3],
Abdikhakimova M.I.[6],
Aliev R. A.[2],
Gafur-Okhunov M. A.[3],
Kasymova A. A.[2],
Mirzaev Kh. M.[2],
Mutalov Kh. I.[2],
Shukurova M. A.[5],
Yusupbekov A. A.[1],
Ergashev Sh. K.[2]

1. Department of Oncology, Oncohematology and Radiation Oncology, Tashkent State Medical University; Tashkent Regional Branch of the Republican Specialized Scientific and Practical Medical Center of Oncology and Radiology, Uzbekistan
2.Tashkent Regional Branch of the Republican Specialized Scientific and Practical Medical Center of Oncology and Radiology, Uzbekistan
3.Department of Oncology, Center for Professional Development of Medical Workers, Ministry of Health of the Republic of Uzbekistan
4.Ezgu Niyat Private Medical Clinic, Uzbekistan
5.Department of Hematology and Transfusiology, Central Asian University (CAU), Uzbekistan
6.Scientific and Practical Center of Pediatric Oncology, Hematology and Immunology, Uzbekistan

Abstract

This study provides a comparative evaluation of emergency surgical outcomes in patients presenting with complicated abdominal malignancies, depending on the level of institutional specialization. A total of 100 patients were enrolled and divided into two comparable groups: those treated in a specialized oncology center and those managed in emergency surgical hospitals. Treatment in specialized oncology centers was associated with a significantly higher rate of radical procedures with lymph node dissection, accompanied by reduced postoperative complications (12% vs 28%), lower mortality (4% vs 14%), and improved 3-year survival (68% vs 42%). Based on the obtained findings, an optimized stepwise patient routing model involving emergency management, stabilization, and transfer to a specialized oncology center was proposed. The study emphasizes the

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

clinical and organizational importance of integrating emergency and oncological care services to improve outcomes in this patient population.

Keywords: Emergency oncology surgery, abdominal malignancies, complications, survival, patient routing.

Introduction

Malignant neoplasms remain one of the leading causes of mortality worldwide and represent a major medical and social challenge for modern healthcare systems. According to the World Health Organization, more than 19 million new cancer cases are diagnosed annually, while mortality rates remain high despite substantial advances in diagnostics, surgery, and systemic therapy [1]. A considerable proportion of patients continue to be diagnosed at advanced stages, limiting the feasibility of radical treatment and adversely affecting prognosis [2].

A particularly challenging clinical and organizational issue is the management of patients presenting emergently with complicated malignant neoplasms. Acute conditions such as malignant bowel obstruction, tumor bleeding, perforation, and severe intoxication require urgent intervention and are associated with high postoperative morbidity and mortality [3]. According to published data, 20–40% of cancer patients require emergency surgical care at some stage of disease progression [4].

A major concern is that many such patients are initially admitted to general surgical hospitals, where treatment is often focused on resolving the life-threatening complication rather than adhering to oncologic principles of radical surgery [5]. Inadequate resection volumes, insufficient lymph node dissection, and incomplete tumor staging may negatively affect both short-term and long-term outcomes, including overall survival [6].

An additional factor aggravating this problem is delayed presentation and insufficient public awareness regarding early cancer symptoms and screening opportunities. Studies conducted in Uzbekistan have demonstrated limited awareness of early oncologic warning signs, contributing to an increased proportion of patients presenting with complicated disease [7].

Another important issue is the absence of a standardized patient routing system, insufficient coordination between emergency and specialized oncology services, and variability in treatment strategies, all of which create a significant organizational challenge requiring a systemic solution [8]. In this context, the development of an effective model of emergency oncologic care based on multidisciplinary collaboration, standardized treatment approaches, and integration of urgent and specialized services is of particular relevance [9].

Optimization of this system may reduce postoperative complications and mortality, improve survival outcomes, and increase the overall effectiveness of treatment, which determines the scientific and practical significance of the present study.

Objective

To assess the impact of specialized oncology care on immediate and long-term outcomes of emergency surgery for complicated malignancies and to develop an effective patient routing model for optimizing management of this patient population.

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

Materials and Methods

This study was based on the analysis of treatment outcomes in 100 patients with complicated malignant neoplasms of the abdominal organs, including gastric cancer, colorectal cancer, pancreatic tumors, and small bowel malignancies. The study was designed as a comparative clinical-organizational investigation aimed at evaluating both short-term and long-term outcomes depending on the level of institutional specialization.

The main group consisted of 50 patients treated at the Tashkent Regional Branch of the Republican Specialized Scientific and Practical Medical Center of Oncology and Radiology, Republic of Uzbekistan, where care was provided within a specialized oncology service according to modern oncologic surgical principles, including radical resection, lymph node dissection, and standardized postoperative management.

The comparison group included 50 patients admitted and operated on at the Republican Research Center of Emergency Medicine, where treatment was delivered in a general emergency surgical setting.

The study covered the period from 2020 to 2025. Selection of these clinical institutions was determined by the need to compare two organizational models of care for patients with complicated malignancies: specialized oncologic care and emergency surgical care.

Comparative analysis included evaluation of patient clinical characteristics, types of tumor-related complications, extent and character of surgical interventions, postoperative morbidity, mortality, length of hospital stay, and long-term outcomes, including survival.

This approach is consistent with contemporary concepts of comprehensive evaluation of oncologic care and allows objective assessment of the impact of institutional specialization on both immediate and long-term treatment outcomes [1,2].

Clinical and Demographic Characteristics of Patients

The age of patients included in the study ranged from 28 to 76 years, with a mean age of 57.6±1.4 years, which corresponds to the age characteristics of patients with abdominal malignancies reported in the contemporary literature [3]. The predominance of older age groups reflects the well-established increase in cancer incidence with age and confirms the representativeness of the study cohort.

Male patients predominated in the study population (62%), whereas females accounted for 38%. This distribution is consistent with epidemiological data indicating a higher prevalence of gastrointestinal malignancies among men and agrees with previously published studies.

A substantial proportion of patients presented with concomitant somatic comorbidities, most commonly cardiovascular diseases and diabetes mellitus. The presence of comorbidity was considered a clinically significant factor potentially affecting disease severity, tolerance to surgical treatment, risk of postoperative complications, and immediate treatment outcomes [4].

Importantly, the clinicodemographic characteristics of the two study groups were comparable, with no statistically significant differences in baseline parameters ($p>0.05$), indicating homogeneity of the cohorts and allowing valid interpretation of comparative treatment outcomes.

Table 1. Clinicodemographic Characteristics of Patients

Table 1. Clinicodemographic and Baseline Clinical Characteristics of Patients

Variable	Main Group (n=50)	Comparison Group (n=50)	p-value
Age, years (Mean±SE)	57.2±1.3	58.0±1.5	0.68
Male sex, n (%)	31 (62)	31 (62)	1.00
Female sex, n (%)	19 (38)	19 (38)	1.00
Comorbidity, n (%)	32 (64)	36 (72)	0.39
Cardiovascular disease	21 (42)	23 (46)	0.68
Diabetes mellitus	9 (18)	9 (18)	1.00
Malignant bowel obstruction	23 (46)	23 (46)	1.00
Tumor bleeding	11 (22)	11 (22)	1.00
Tumor perforation	7 (14)	7 (14)	1.00
Intoxication/ascites	9 (18)	9 (18)	1.00

The data presented demonstrate that the study groups were comparable with respect to baseline clinicodemographic characteristics, comorbidity profile, and the pattern of urgent tumor-related complications. No statistically significant differences were observed between groups across the analyzed variables ($p>0.05$), indicating initial cohort homogeneity and ensuring methodological validity of the subsequent comparative analysis.

Mean patient age, sex distribution, and prevalence of concomitant diseases were consistent with epidemiological characteristics of patients with abdominal malignancies described in the contemporary literature. A considerable proportion of patients had significant comorbidity, reflecting the high clinical complexity of this patient population.

Particular importance should be attributed to the comparability of groups regarding the structure of urgent complications, including malignant bowel obstruction, tumor bleeding, perforation, and intoxication syndrome, since these factors may directly influence disease severity at presentation, surgical strategy, and immediate treatment outcomes.

Thus, the absence of significant baseline differences allows the subsequently identified differences in postoperative morbidity, mortality, and survival to be interpreted primarily as a consequence of differences in surgical strategy and the level of institutional specialization rather than disparities in initial patient characteristics.

Tumor Characteristics

The study included patients with malignant neoplasms of various anatomical sites, predominantly involving the gastrointestinal tract, which is consistent with the contemporary structure of cancer incidence and reflects the epidemiological distribution of these malignancies reported in most countries worldwide [5].

Table 2. Distribution of Tumor Types

Tumor Type	Main Group (n=50)	Comparison Group (n=50)	p-value
Gastric cancer	14 (28%)	15 (30%)	0.82
Colorectal cancer	18 (36%)	17 (34%)	0.84
Pancreatic tumors	10 (20%)	9 (18%)	0.80
Small bowel tumors	8 (16%)	9 (18%)	0.79

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

Analysis of the data presented in Table 2 demonstrated no statistically significant differences between the study groups regarding the distribution of patients according to tumor type ($p>0.05$), indicating comparability of the groups in terms of tumor pathology structure.

Homogeneity of the groups with respect to tumor localization is of fundamental importance, as it minimizes the influence of the nosological factor on both short-term and long-term treatment outcomes and allows the differences observed in clinical outcomes to be interpreted primarily as a consequence of differences in surgical strategy and the level of institutional specialization

Pattern of Complications

All patients were admitted on an emergency basis due to complicated malignant disease requiring urgent surgical intervention. It should be emphasized that, despite the traditional perception of oncology as predominantly an elective discipline, a substantial proportion of patients with progressive or newly diagnosed malignancies present in urgent or life-threatening conditions.

According to Pisano et al. (2018), 20–40% of patients with abdominal malignancies require emergency surgical treatment at some stage of disease progression because of bowel obstruction, perforation, bleeding, or severe intoxication. McArdle and Hole (2004) also demonstrated that emergency presentation of colorectal cancer is associated with a more severe clinical course and poorer prognosis. Similarly, Cirocchi et al. (2013) emphasized that emergency oncologic surgery should adhere to the same oncologic principles as elective surgery despite time constraints and the critical condition of patients.

In the present study, malignant bowel obstruction was the most frequent complication (46%), which is consistent with published data identifying it as the leading emergency manifestation of abdominal malignancies. Less frequent complications included tumor bleeding (22%), tumor perforation (14%), and intoxication syndrome with ascites (18%).

The distribution of complications was comparable between the study groups, with no statistically significant differences observed ($p>0.05$), allowing the type of urgent complication to be excluded as an independent factor accounting for differences in treatment outcomes.

Thus, the findings confirm that emergency oncologic surgery represents not an exceptional circumstance, but an important clinical scenario in the natural course of malignant disease, requiring a specialized approach and organizational readiness of the healthcare system.

Surgical Treatment

All patients underwent surgical interventions of varying extent depending on the type of urgent complication, tumor spread, general condition of the patient, and intraoperative assessment of resectability.

It should be emphasized that performing radical surgery in the setting of complicated malignant disease represents one of the most challenging tasks in emergency oncologic surgery. Unlike elective procedures, urgent interventions are frequently performed in the presence of bowel obstruction, perforation, bleeding, intoxication, and severe metabolic disturbances, all of which may substantially limit full adherence to oncologic principles.

Nevertheless, as emphasized by Cirocchi et al. (2013), Pisano et al. (2018), as well as current National Comprehensive Cancer Network and European Society for Medical Oncology recommendations, the

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

core principles of oncologic radicality should be preserved whenever feasible even in emergency surgery, including adequate resection margins, lymph node dissection, and adherence to the principles of ablastics and antiblastics [7].

The ability to maintain these principles largely determines immediate treatment outcomes, postoperative morbidity, and long-term oncologic prognosis, which served as the rationale for comparative analysis of the surgical procedures performed in the present study.

Table 3. Characteristics of Surgical Management

Variable	Main Group (n=50)	Comparison Group (n=50)	p-value
Radical resections (R0), n (%)	36 (72%)	18 (36%)	<0.001
Conditionally radical resections (R1), n (%)	9 (18%)	13 (26%)	0.34
Palliative procedures (R2), n (%)	5 (10%)	19 (38%)	<0.001
Lymph node dissection, n (%)	34 (68%)	10 (20%)	<0.001

Surgical Management

Analysis of the data presented in Table 3 demonstrated statistically significant differences in both the character and radicality of surgical interventions between the study groups. In the main group, radical resections (R0) were performed significantly more often, whereas palliative procedures (R2) predominated in the comparison group, reflecting differences in surgical strategy and the ability to adhere to principles of oncologic radicality.

Particular attention should be given to the frequency of lymph node dissection, which was significantly higher in the specialized oncology center than in the general emergency surgical setting. This parameter is of fundamental importance, as adequate lymphadenectomy is not only a component of radical treatment but also a critical element of tumor staging that may determine subsequent therapeutic strategy and prognosis.

The findings indicate that treatment in a specialized oncology center provides a higher level of adherence to oncologic surgical principles, including radical resection, lymph node dissection, and tumor-free surgical principles. In contrast, in emergency surgical settings, operative management is often limited to control of the life-threatening complication, thereby reducing the feasibility of definitive oncologic surgery.

Thus, the observed differences confirm a substantial influence of institutional specialization on the extent and quality of surgical treatment and likely represent one of the key factors underlying differences in both short-term and long-term outcomes.

Postoperative Outcomes

Assessment of immediate postoperative outcomes represents one of the principal criteria for evaluating the effectiveness of surgical treatment, particularly in patients with complicated malignancies operated on in emergency settings. The incidence of postoperative complications, mortality, and length of hospital stay reflects not only the severity of the patients' initial condition, but also the quality of surgery, adequacy of perioperative management, and efficiency of the organizational model of care [8].

As shown in previous studies, postoperative morbidity and mortality are among the most sensitive indicators of quality in emergency oncologic surgery (Cirocchi et al., 2013; Pisano et al., 2018).

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

Therefore, comparative analysis of immediate outcomes in the study groups is of particular importance for assessing the advantages of specialized oncologic management.

Table 4. Postoperative Outcomes

Variable	Main Group (n=50)	Comparison Group (n=50)	p-value
Postoperative complications, n (%)	6 (12%)	14 (28%)	0.047
Postoperative mortality, n (%)	2 (4%)	7 (14%)	0.041
Length of hospital stay, days (Mean±SE)	9.5±2.3	13.2±3.1	<0.001

Analysis of immediate treatment outcomes demonstrated a statistically significant advantage of the main group across all key postoperative indicators. The incidence of postoperative morbidity among patients treated in the specialized oncology center was more than twofold lower than in the emergency surgery group (12% vs 28%; p=0.047).

A similar trend was observed for postoperative mortality, which was 4% in the main group compared with 14% in the comparison group (p=0.041), indicating a more favorable short-term prognosis in patients managed within a specialized oncology service.

Particular attention should be given to the shorter hospital stay in the main group (9.5±2.3 vs 13.2±3.1 days; p<0.001), which may reflect a lower complication rate, more effective perioperative management, and greater organizational efficiency of specialized treatment.

These findings suggest that adherence to oncologic surgical principles, a higher degree of radicality, and standardized postoperative management represent key factors contributing to reduction of morbidity and mortality in this category of patients.

Long-Term Outcomes

Assessment of survival outcomes represents a fundamental criterion for evaluating the effectiveness of oncologic treatment and one of the most important indicators of long-term results. Analysis of long-term survival allows objective assessment of the impact of surgical radicality, adherence to oncologic principles, and organizational models of care on disease prognosis [3].

Table 5. Survival Outcomes

Variable	Main Group (n=50)	Comparison Group (n=50)	p-value
1-year survival, n (%)	41 (82%)	32 (64%)	0.041
3-year survival, n (%)	34 (68%)	21 (42%)	0.009

Long-Term Outcomes

Analysis of long-term outcomes demonstrated a statistically significant advantage in patients treated at the specialized oncology center. One-year survival reached 82% in the main group compared with 64% in the comparison group (p=0.041), indicating more favorable early oncologic outcomes.

The most pronounced differences were observed for 3-year survival, which was 68% in the main group versus 42% in the comparison group (p=0.009), suggesting a substantial advantage of the specialized approach in achieving long-term oncologic control.

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

These findings are likely associated with a higher frequency of radical resections, adherence to oncologic surgical principles, performance of lymph node dissection, and the opportunity for comprehensive multidisciplinary management within a specialized oncology center.

The results are consistent with findings reported by Hanna et al. (2020), Cirocchi et al. (2013), and Kesson et al. (2012), emphasizing the influence of treatment radicality and organizational models of care on survival outcomes in oncology patients.

Results and Discussion

The present study demonstrated that differences in outcomes among patients with complicated malignant neoplasms are determined not only by disease-related clinical factors, but to a considerable extent by the organizational model of care and the level of institutional specialization.

One of the key findings of the study was the significantly higher frequency of radical resections (R0) and lymph node dissection in the specialized oncology center, accompanied by reduced postoperative morbidity, lower mortality, and improved long-term survival. These findings suggest that adherence to oncologic surgical principles, even in emergency settings, represents one of the major determinants of prognosis.

Importantly, the observed differences were related not only to the extent of surgery, but also to the overall treatment strategy. In the specialized center, emergency intervention was approached not merely as management of a complication, but as the initial stage of comprehensive oncologic treatment. This approach likely explains the lower frequency of palliative procedures and superior survival outcomes in the main group.

The findings are in agreement with international data. Cirocchi et al. (2013) demonstrated that adherence to principles of radical oncologic surgery and performance of lymphadenectomy, even in emergency settings, are associated with improved short- and long-term outcomes. Pisano et al. (2018) emphasized that urgent procedures performed outside a specialized oncologic environment are often limited to control of life-threatening complications, which may negatively affect oncologic prognosis.

Particularly noteworthy are the findings of Hanna et al. (2020), showing that even delays in specialized treatment are associated with increased cancer-related mortality. In the context of the present study, these data further support the importance of timely transfer of patients from emergency services to specialized oncology centers.

Thus, the findings suggest that specialized emergency oncologic surgery should be considered not only a clinical advantage, but also an organizational advantage directly influencing patient survival. This underlines the need for integration of emergency surgical and oncologic services into a unified system of care.

The outcomes observed in the main group were comparable to, or exceeded, reported international benchmarks, whereas results in the emergency surgery group were substantially inferior.

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

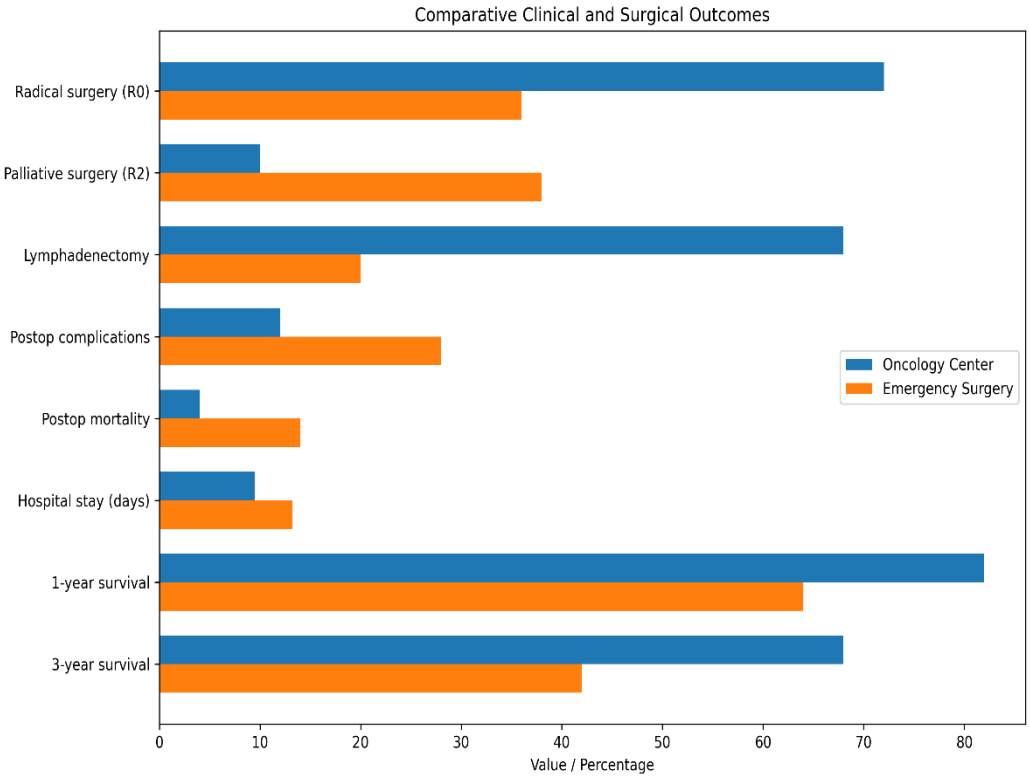

Figure 1. Comparison of Key Outcome Indicators

Figure 1 Legend

The diagram demonstrates that treatment in a specialized oncology center was associated with a higher frequency of radical resections and lymph node dissection, reduced postoperative morbidity and mortality, shorter hospital stay, and improved 1-year and 3-year survival compared with treatment in an emergency surgical hospital.

Analysis of Factors Influencing Treatment Outcomes

Table 6. Comparative Characteristics of Factors Influencing Treatment Outcomes

Factors	Specialized Oncology Center	Emergency Surgical Hospital
Surgical strategy	Predominantly radical	Predominantly urgent-palliative
Adherence to oncologic principles (ablastics/antiblastics)	Consistently maintained	Partial adherence
Lymph node dissection	Standard component of surgery	Performed selectively
Comprehensive tumor staging	Routinely performed	Limited by emergency setting
Multidisciplinary approach (MDT)	Fully implemented	Limited
Postoperative management	Standardized according to oncologic protocols	Variable
Access to further specialized treatment	High	Limited

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

Analysis of Factors Influencing Treatment Outcomes

Analysis of the factors presented indicates that differences in treatment outcomes are determined not only by the extent of surgical intervention, but also by the organizational model of care delivery. In a specialized oncology center, treatment is provided within a comprehensive framework that includes adherence to oncologic surgical principles, multidisciplinary decision-making, and standardized postoperative management.

In contrast, within a general emergency surgical setting, treatment strategy is more often focused on control of the life-threatening complication, which objectively limits the possibility of implementing a definitive oncologic approach.

Organizational Aspects of Emergency Oncologic Care

The results of the present study suggest that outcomes in patients with complicated malignant neoplasms are determined not only by the extent of surgery, but also by the efficiency of healthcare organization throughout the entire patient pathway.

As demonstrated by Hanna et al. (2020), Kesson et al. (2012), and current European Society for Medical Oncology recommendations, improvement in oncologic outcomes can be achieved only through a systemic approach involving development of specialized infrastructure, timely diagnosis, multidisciplinary management, and access to specialized treatment. Continuity between emergency and oncology services is of particular importance.

In the present study, the absence of a clearly defined patient routing system, delayed transfer to a specialized center, and insufficient integration between urgent and oncologic care were associated with a lower frequency of radical surgery, higher postoperative mortality, and poorer long-term outcomes.

These findings confirm that the organizational component of emergency oncologic surgery is no less important than the technical aspects of surgical treatment, and that optimization of patient routing should be regarded as an independent reserve for improving treatment effectiveness.

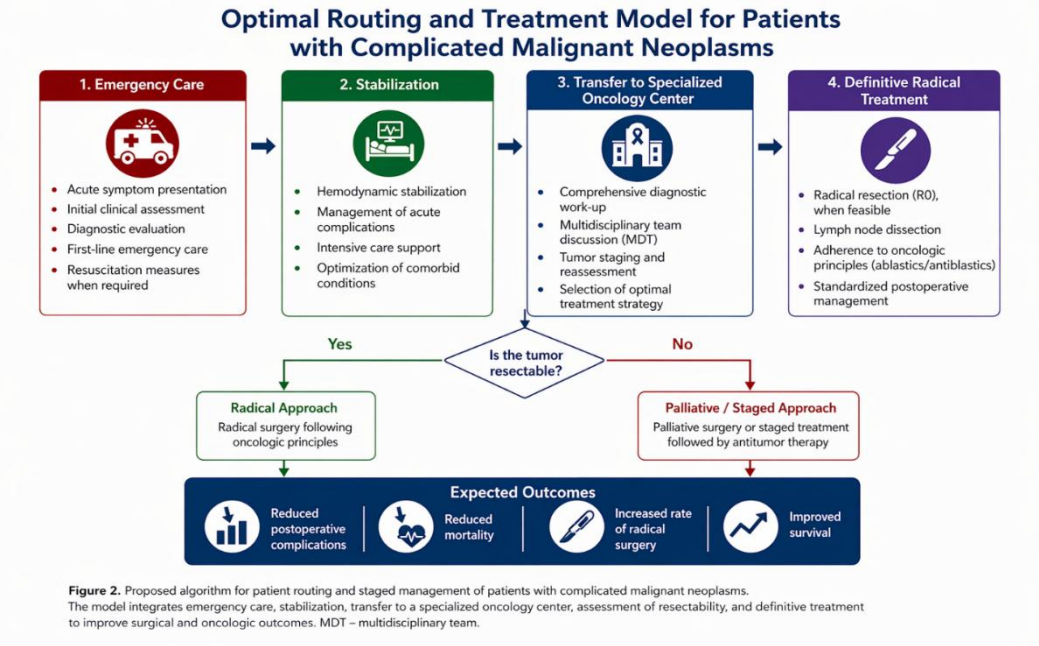

Figure 2. Proposed algorithm for patient routing and staged management of patients with complicated malignant neoplasms. The model integrates emergency care, stabilization, transfer to a specialized oncology center, assessment of resectability, and definitive treatment to improve surgical and oncologic outcomes. MDT – multidisciplinary team.

Scheme 1. Optimal Patient Routing Model

The model presented in Figure 2 reflects not only an algorithm for routing patients with complicated malignant neoplasms, but also a conceptual framework for organizing emergency oncologic care based on continuity, multidisciplinary interaction, and oncologic radicality. Unlike the traditional approach, in which urgent surgery is often limited to control of a life-threatening complication, the proposed model considers the emergency stage as the initial link in a continuous process of specialized oncologic treatment.

The relevance of such an approach stems from the fact that complicated tumor presentation is often the first clinical manifestation of disease and the reason for patient admission through emergency services. According to Pisano et al. (2018), up to 30–40% of patients with abdominal malignancies require urgent surgical intervention at some stage because of bowel obstruction, perforation, bleeding, or tumor-related intoxication. In this context, treatment outcomes depend not only on the technical performance of surgery, but also on the appropriateness of the patient pathway from initial admission to specialized treatment.

The first stage of the model—emergency care—includes initial assessment, diagnosis of the complication, correction of life-threatening disturbances, and initiation of intensive therapy. The importance of this stage can hardly be overestimated, as early recognition of urgent oncologic pathology and prompt initiation of therapy may largely determine the risk of early postoperative mortality. Studies by Cirocchi et al. (2013) and Pisano et al. (2018) emphasize that the quality of the initial emergency phase strongly influences the feasibility of subsequent radical treatment.

The second stage—patient stabilization—represents not only a preparatory step, but a strategically important component of treatment. Correction of hemodynamic disturbances, metabolic decompensation, intoxication syndrome, and concomitant organ dysfunction creates conditions for definitive specialized intervention. Contemporary concepts of perioperative optimization regard this stage as a mandatory element for improving outcomes, while studies by McArdle et al. demonstrate a direct relationship between the quality of preoperative preparation and the likelihood of radical resection.

The third stage—transfer to a specialized oncology center—is the central element of the proposed model. At this point, management transitions from emergency surgery to an oncologic treatment strategy. Comprehensive reassessment, tumor staging, evaluation of resectability, and multidisciplinary team discussion (MDT) make it possible to move from forced symptomatic management to pathogenetically and oncologically justified treatment. The value of the MDT approach was convincingly demonstrated by Kesson et al. (2012), where multidisciplinary care was associated with improved survival outcomes.

A critically important component of the model is the decision node regarding tumor resectability. Inclusion of this step reflects modern principles of personalized oncology and is consistent with current European Society for Medical Oncology and National Comprehensive Cancer Network recommendations, according to which selection between radical, staged, or palliative strategies should be based on integrated assessment of tumor extent, functional status, and prognostic factors. This element strengthens the clinical rationale of the routing model and transforms the scheme from an organizational algorithm into a decision-making model.

The fourth stage comprises definitive specialized treatment. In resectable disease, this includes radical surgery with adherence to oncologic principles—adequate resection, lymph node dissection, tumor-

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

free surgical technique, and standardized postoperative management. As demonstrated by Cirocchi et al. (2013), compliance with these principles is directly associated with reduced postoperative morbidity and improved long-term prognosis.

Importantly, the proposed model does not merely describe a sequence of care stages, but reflects a paradigm shift in the management of urgent oncology patients—from the concept of "rescue surgery" to that of "staged oncologic treatment." This concept is fundamentally important because, as shown by Hanna et al. (2020), even delays in definitive specialized treatment lead to statistically significant increases in cancer-related mortality.

The results of the present study support the practical validity of this model. The higher frequency of radical surgery and lymphadenectomy, lower postoperative morbidity and mortality, and improved 3-year survival observed in the main group were likely attributable to implementation of these organizational and surgical principles.

Thus, the proposed routing model may be considered an organizational-clinical instrument for optimizing treatment of patients with complicated malignant neoplasms. Its practical value lies in standardizing interaction between emergency and specialized oncology services, while its scientific significance lies in substantiating the impact of organizational models of care on both short- and long-term oncologic outcomes.

In a broader context, the proposed algorithm aligns with the contemporary concept of value-based oncology care, in which treatment effectiveness is determined not only by technical execution of interventions, but also by the organization of the entire patient pathway. From this perspective, integration of emergency surgery and specialized oncology care should be regarded not as an additional advantage, but as a necessary condition for improving outcomes in this patient population.

Conclusions

1. The present study demonstrated that both short-term and long-term outcomes in patients with complicated abdominal malignancies are substantially determined by the level of institutional specialization, surgical strategy, and organizational model of care. Treatment in a specialized oncology center was associated with a higher rate of radical surgery, lower postoperative morbidity and mortality, and improved survival outcomes.
2. Adherence to oncologic surgical principles in specialized centers, including R0 resections, lymph node dissection, and tumor-free surgical techniques, was identified as a key determinant of treatment quality and oncologic prognosis. The higher frequency of radical procedures and lower proportion of palliative interventions confirm the advantage of specialized emergency oncologic care.
3. In general emergency surgical hospitals, treatment strategy is more frequently focused on management of life-threatening complications, often limiting the feasibility of definitive oncologic surgery and contributing to higher complication rates, mortality, and poorer long-term outcomes.
4. Treatment in a specialized oncology institution was associated with significantly reduced postoperative complications and mortality, shorter hospital stay, and improved 1-year and 3-year survival, indicating that outcomes depend not only on the extent of surgery, but also on the quality of perioperative and postoperative management.

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

5. The findings support consideration of emergency oncologic surgery as an independent multidisciplinary field requiring integration of emergency surgical and specialized oncologic services, unified clinical protocols, and standardized patient routing systems.
6. The proposed staged routing model—incorporating emergency care, stabilization, timely transfer to a specialized oncology center, assessment of resectability, and radical or staged treatment—ensures continuity of care and was associated with improved treatment outcomes.
7. The scientific and practical significance of this study lies in demonstrating that optimization of the organizational model of emergency oncologic care represents an independent reserve for improving treatment effectiveness, reducing mortality, and increasing survival.
8. The results support implementation of the proposed routing model in clinical practice as a promising strategy for optimizing emergency oncologic care and as a basis for further research in specialized oncologic surgery services.

Author Contributions

A.A. Aziziy made the principal contribution to the conception and design of the study, collection of clinical material, database development, statistical analysis, and interpretation of the results. The author also prepared the original draft of the manuscript, performed scientific editing, and approved the final version for publication.

The scientific supervisor and consultants contributed to the development of study methodology, discussion of the results, critical revision of the manuscript, and scientific supervision at all stages of the work.

All authors made substantial intellectual contributions to the study, reviewed the final version of the manuscript, and approved it for publication.

Conflict of Interest

The authors declare no conflict of interest related to this study or the publication of its results.

Funding

This research received no external funding and was conducted without sponsor support.

References

1. Багненко СФ, Тимербулатов ВМ. Ургентная абдоминальная хирургия у онкологических пациентов. *Вестник хирургии.* 2020;179(6):18-26.
2. Давыдов МИ, Аксель ЕМ. *Статистика злокачественных новообразований в России и странах СНГ.* Москва: Медицина; 2021.
3. Каприн АД, Старинский ВВ, Шахзадова АО. *Состояние онкологической помощи населению России в 2022 году.* Москва; 2023.
4. Петров ЛО, Давыдов МИ. Экстренная хирургия осложнённого колоректального рака. *Хирургия. Журнал им. Н.И. Пирогова.* 2019;(7):45-52.
5. Чиссов ВИ, Дарьялова СЛ. *Онкология. Национальное руководство.* Москва: ГЭОТАР-Медиа; 2022.

6. Cirocchi R, Farinella E, Trastulli S, et al. Safety and efficacy of oncologic principles in emergency colorectal surgery. *World J Surg Oncol.* 2013;11:275.
7. Hanna TP, King WD, Thibodeau S, et al. Mortality due to cancer treatment delay: systematic review and meta-analysis. *BMJ.* 2020;371:m4087.
8. Kesson EM, Allardice GM, George WD, et al. Effects of multidisciplinary team working on cancer survival. *BMJ.* 2012;344:e2718.
9. McArdle CS, Hole DJ. Emergency presentation of colorectal cancer is associated with poor survival. *Br J Surg.* 2004;91(5):605-609.
10. National Comprehensive Cancer Network. *NCCN Clinical Practice Guidelines in Oncology: Colon Cancer.* Version 2024.
11. Pisano M, Zorcolo L, Merli C, et al. 2017 WSES guidelines on colon and rectal cancer emergencies: obstruction and perforation. *World J Emerg Surg.* 2018;13:36.
12. Sung H, Ferlay J, Siegel RL, et al. Global cancer statistics 2022: GLOBOCAN estimates of incidence and mortality worldwide. *CA Cancer J Clin.* 2024.
13. World Health Organization. *Global Cancer Observatory: Cancer Today.* Lyon: International Agency for Research on Cancer; 2023.
14. European Society for Medical Oncology. Clinical Practice Guidelines for gastrointestinal malignancies. *Ann Oncol.* 2023

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5