



Postmortem evaluation of deaths in individuals with a history of bariatric surgery: autopsy and histopathological findings

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Abstract

Background Bariatric surgery effectively treats morbid obesity, but postoperative deaths may present diagnostic and medicolegal challenges. Determining whether death is related to surgery often requires combined interpretation of autopsy and histopathological findings.

Aim This study aimed to evaluate autopsy and histopathological findings in deaths occurring in individuals with a history of bariatric surgery and to assess their contribution to determining the cause of death and its relationship to bariatric surgery.

Methods This retrospective autopsy-based case series included medicolegal autopsies with a history of bariatric surgery examined at the Council of Forensic Medicine between 1 January 2019 and 31 December 2025. Demographics, procedure type, surgery-to-death interval, autopsy findings, histopathology, and cause of death were recorded. Deaths were classified as surgery-related or unrelated based on combined forensic, pathological, and clinical evaluation.

Results A total of 51 cases were included. Mean age at surgery was 36.1 ± 10.7 years; 58.8% were female. Sleeve gastrectomy was the predominant procedure (50/51, 98%). Death was considered surgery-related in 24 cases (47.1%) and unrelated in 27 (52.9%). In surgery-related deaths, the median interval was 10 days and 75% occurred within 30 days. Common autopsy findings were perforation, anastomotic leakage, intra-abdominal hemorrhage, and findings consistent with peritonitis or sepsis. Histopathology most frequently showed acute peritonitis, acute inflammation, gastrointestinal wall necrosis, and microthrombi. Infectious and septic complications predominated.

Conclusions Deaths in individuals with a history of bariatric surgery represent a pathologically and forensically heterogeneous group. Autopsy and histopathological examination are essential for determining the cause of death and its relationship to bariatric surgery.

Keywords Bariatric surgery · Autopsy · Histopathology · Forensic pathology · Postoperative complications

Introduction

The World Health Organization (WHO) defines obesity as abnormal or excessive fat accumulation that may impair health. In adults, obesity is most commonly diagnosed when the body mass index (BMI) is 30 kg/m^2 or higher. A BMI between 25 and 29.9 kg/m^2 is classified as overweight,

whereas a BMI of 30 kg/m^2 or above is classified as obesity [1]. According to current data from the World Health Organization, approximately 890 million adults (aged 18 years and older) worldwide are classified as obese [2].

Obesity is recognized as a major risk factor for cardiovascular diseases, type 2 diabetes, hypertension, and other metabolic disorders, and its prevalence has increased markedly worldwide in recent decades [1]. In parallel with this rise, bariatric surgery has been increasingly performed as an effective treatment option to achieving sustained weight loss and reducing obesity-related comorbidities in patients with morbid obesity [3].

Bariatric surgery is generally indicated for obese individuals who fail to achieve adequate weight loss despite lifestyle modifications and medical treatment. According to current guidelines, the primary indications for bariatric

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surgery are a body mass index (BMI) of ≥ 40 kg/m², or a BMI between 35 and 39.9 kg/m² in the presence of at least one serious obesity-related comorbidity, such as type 2 diabetes, hypertension, or obstructive sleep apnea syndrome [1, 4, 5]. In addition, recent studies have shown that metabolic surgery may be effective in selected patients with uncontrolled type 2 diabetes and a BMI between 30 and 34.9 kg/m², and this patient group has been considered eligible for surgery in some guidelines [4, 6]. When bariatric surgery is considered, it is recommended that patients' suitability for surgery be evaluated by a multidisciplinary team and that the need for long-term follow-up be taken into account [1, 6].

Although bariatric surgery is an effective treatment modality for morbid obesity, both early and late postoperative complications may occur. In the literature, overall complication rates after bariatric surgery have been reported to range between 10% and 25%, with the most common early complications including anastomotic leakage, intra-abdominal bleeding, and venous thromboembolic events [3, 7]. Anastomotic leak rates vary depending on the surgical technique performed and have been reported to range from approximately 1.5% to 2.4% after sleeve gastrectomy and approximately 1.1% after Roux-en-Y gastric bypass [8, 9]. Venous thromboembolism and pulmonary embolism, although relatively uncommon, are among the leading causes of early postoperative mortality following bariatric surgery [4, 6].

Although mortality rates associated with bariatric surgery are currently quite low, large case series and meta-analyses have reported a 30-day mortality rate of approximately 0.3% to 0.9%. When causes of death are evaluated, sepsis and massive hemorrhage secondary to surgical complications predominate in the early postoperative period, whereas thromboembolic events and cardiovascular causes are reported more frequently in the late postoperative period [10, 11]. These findings indicate that deaths occurring after bariatric surgery cannot be explained by a single mechanism and exhibit a heterogeneous distribution [10].

Despite the growing number of bariatric procedures performed worldwide, the pathological and forensic characteristics of deaths occurring after bariatric surgery remain insufficiently described in the literature. In particular, autopsy-based studies focusing on the exact causes of death, postoperative complications, and the temporal relationship between surgery and death are limited. A more detailed evaluation of such cases may contribute not only to a better understanding of fatal postoperative complications, but also to the identification of non-surgical and behavioral causes of death in this patient population. Therefore, the present study aimed to analyze autopsy cases with a history of bariatric surgery in terms of demographic characteristics, type of

surgery, timing of death, macroscopic and histopathological findings, and causes of death.

Materials and methods

Study design and case selection

This study was designed as a retrospective autopsy-based case series. Cases with a history of bariatric surgery who underwent medicolegal autopsy with histopathological sampling were obtained at the Council of Forensic Medicine between 1 January 2019 and 31 December 2025 were included in the study. Cases were identified through a review of autopsy records, forensic case files, medical records, and pathology reports. Cases with incomplete records preventing meaningful evaluation were excluded.

Data collection

For each case, the following variables were recorded: age at death, sex, body weight, body mass index (BMI), type of bariatric surgery, history of revision or additional surgical procedures, interval between surgery and death, autopsy findings, histopathological findings, and cause of death.

In cases with revision bariatric surgery or additional bariatric/metabolic procedures, the interval between surgery and death was calculated based on the most recent bariatric operation rather than the initial surgery. Similarly, age at surgery was calculated according to the date of the last bariatric procedure when applicable.

Autopsy and histopathological examination

All cases underwent standard medicolegal autopsy. Macroscopic findings were reviewed from autopsy reports, and histopathological findings were evaluated using available pathology reports. Particular attention was given to findings related to abdominal infection, leakage, perforation, necrosis, thrombosis, acute inflammation, and microscopic peritonitis. In this study, macroscopic findings such as diffuse purulent peritonitis, intra-abdominal abscess formation, purulent pleural effusion, purulent airway secretions, and other gross evidence of severe infection were recorded as findings consistent with sepsis. Macroscopic findings including purulent peritoneal fluid, fibrinopurulent exudate, and fibrin deposition on the peritoneal surfaces were recorded as findings consistent with peritonitis. These findings were interpreted in conjunction with the histopathological findings and available clinical information when determining the cause of death. In addition, in some cases classified as unrelated to bariatric surgery, secondary

pathological findings potentially associated with previous surgical procedures, such as liposuction or other operations, were also recorded.

Case classification

Cases were categorized as bariatric surgery-related or bariatric surgery-unrelated deaths. Deaths were classified as bariatric surgery-related when the fatal pathological process was considered directly attributable to postoperative surgical complications or their sequelae, whereas deaths were classified as unrelated when the cause of death resulted from an independent non-surgical mechanism. Case classification was performed independently by two forensic medicine specialists, and discrepancies were resolved by consensus.

Statistical analysis

The normality of continuous variables was assessed using the Shapiro-Wilk test. Continuous variables with normal distribution were presented as mean $\pm$ standard deviation, whereas non-normally distributed variables were expressed as median (minimum-maximum). Categorical variables were summarized as number (n) and percentage (%).

Results

Demographic and general characteristics

A total of 58 autopsy cases with a history of bariatric surgery were initially identified. Six cases were excluded due to the absence of histopathological examination, and one case was excluded because of advanced autolysis. The final study population consisted of 51 cases.

Of these, 30 were female (58.8%) and 21 were male (41.2%). The mean age was 39.5 ± 11.9 years (range: 18–65 years).

In cases where the date of surgery was known and the interval between surgery and death could be calculated, the mean age at the time of surgery was 36.1 ± 10.7 years (median: 35.8 years; minimum-maximum: 18–57 years).

The mean body weight of the cases was 111.8 ± 34.3 kg. The mean body mass index (BMI) recorded at autopsy was 40.0 ± 12.6 kg/m² (median: 37.0 kg/m²; minimum-maximum: 13.2–84.6 kg/m²). Preoperative BMI data were not available for all cases; therefore, this variable was not included in detailed comparative analyses.

When surgical procedures were evaluated, the primary bariatric procedure was found to be sleeve gastrectomy in the vast majority of cases (50/51, 98.0%). Among the cases who underwent sleeve gastrectomy, additional surgical

Table 1 Demographic and surgical characteristics of the cases

Total number of cases	51
Female, n (%)	30 (58.8)
Male, n (%)	21 (41.2)
Age at death, mean $\pm$ SD (range), years	39.5 ± 11.9 (18–65)
Age at surgery, mean $\pm$ SD (median; range), years	36.1 ± 10.7 (35.8; 18–57)
Body weight, mean $\pm$ SD, kg	111.8 ± 34.3
BMI at autopsy, mean $\pm$ SD (median; range), kg/m ²	40.0 ± 12.6 (37.0; 13.2–84.6)
Primary bariatric procedure: sleeve gastrectomy, n (%)	50 (98.0)
Additional bariatric/metabolic procedure, n (%)	4 (8.0)
- Gastric by-pass	2
- Loop bipartition	1
- Nissen fundoplication	1
Incomplete planned procedure due to intraoperative complication, n (%)	1 (2.0)

procedures were present in 4 cases (8.0%). These included gastric bypass ($n=2$), loop bipartition ($n=1$), and Nissen fundoplication ($n=1$). In one case, the planned procedure could not be completed due to an intraoperative complication at the initial stage of surgery (Table 1).

Relationship between death and bariatric surgery

As a result of forensic and medical evaluation, death was considered related to bariatric surgery in 24 cases (47.1%) and unrelated to bariatric surgery in 27 cases (52.9%) (Table 2). Most bariatric surgery-related deaths occurred in the early postoperative period. Among the 24 bariatric surgery-related cases, the median interval between surgery and death was 10 days (range: 0–97 days). In cases with revision surgery, this interval was calculated based on the most recent bariatric procedure performed before death. In this group, 4 cases (16.7%) died within the first 24 h after surgery, 7 cases (29.2%) within the first 7 days, and 18 cases (75.0%) within the first 30 days.

Macroscopic autopsy findings

When the 24 bariatric surgery-related cases were evaluated, the most prominent macroscopic findings were peritonitis, findings consistent with sepsis, perforation, anastomotic leakage, pulmonary thromboembolism, and intra-abdominal hemorrhage. In this group, macroscopic findings consistent with peritonitis was observed in 12 cases (50%) (Fig. 1), macroscopic findings consistent with sepsis in 14 cases (58.3%),

Table 2 Relationship of death to bariatric surgery

Bariatric surgery-related deaths, n (%)	24 (47.1)
Bariatric surgery-unrelated deaths, n (%)	27 (52.9)



Fig. 1 Diffuse fibrinous peritonitis. Intra-abdominal view demonstrating diffuse fibrinous peritonitis. The peritoneal surfaces are covered with thick fibrinous exudate and show areas of hemorrhage and inflammation. The serosa appears dull and opaque with loss of normal glistening appearance

perforation in 8 cases (33.3%), anastomotic leakage in 5 cases (20.8%), pulmonary thromboembolism in 2 cases (8.3%), and intra-abdominal hemorrhage in 2 cases (8.3%).

Similar macroscopic findings were also identified in a limited number of cases classified as unrelated to bariatric surgery. In this subgroup, macroscopic findings consistent with sepsis were observed in cases following liposuction, while pulmonary thromboembolism was identified in three cases with a history of recent surgical procedures. Among the bariatric surgery-unrelated cases with intra-abdominal hemorrhage ($n=2$), one occurred following a traffic accident and the other after liposuction (Table 3A).

Histopathological findings

When the bariatric surgery-related cases were evaluated, the most prominent histopathological findings included necrosis of the gastrointestinal wall, microthrombi, acute inflammation, and acute peritonitis. In this group, necrosis of the gastrointestinal wall was identified in 7 cases (29.2%), microthrombi in 7 cases (29.2%), acute inflammation in 14 cases (58.3%), and acute peritonitis in 19 cases (79.1%).

Similar histopathological findings were also observed in a limited number of cases classified as unrelated to bariatric surgery. In this subgroup, microthrombi were identified in 4 cases, three of which were observed in cases with a history of recent surgical procedures (Table 3B).

Table 3 Macroscopic, histopathological findings, and causes of death according to relationship with bariatric surgery

	Bariatric surgery-related ($n=24$), n (%)	Bariatric surgery-unrelated, n
A. Macroscopic findings		
Macroscopic findings consistent with peritonitis	12 (50.0)	-
Findings consistent with sepsis	14 (58.3)	Present in liposuction-related cases
Perforation	8 (33.3)	-
Anastomotic leakage	5 (20.8)	-
Pulmonary thromboembolism	2 (8.3)	3 cases with recent other surgery
Intra-abdominal hemorrhage	2 (8.3)	2 (1 traffic accident, 1 liposuction)
B. Histopathological findings		
Gastrointestinal wall necrosis	7 (29.1)	-
Microthrombi	7 (29.1)	4 (3 with recent surgery)
Acute inflammation	14 (58.3)	1 case with recent bariatric surgery and cardiovascular death
Microscopic findings consistent with acute peritonitis	19 (79.1)	-
C. Major causes and mechanisms of death		
Cause/mechanism		
Intra-abdominal infection secondary to anastomotic leakage	5	-
Perforation	7	-
Peritonitis	19	-
Sepsis	12	-
Mesenteric venous thrombosis	4	-
Vascular injury during surgery	4	-
Cardiovascular causes	-	9
Liposuction-related complications	-	5
Pulmonary thromboembolism	-	2
COVID-19 pneumonia	-	1
Cerebrovascular disease	-	1
Generalized body trauma (Traffic accident)	-	1
Psychiatric/behavioral/self-harm-related deaths	-	8
- Poisoning/intoxication	-	6
- Hanging	-	1
- Fall from height (self-harm)	-	1

In one case, death was attributed to cardiovascular disease; however, the patient had undergone bariatric surgery two weeks prior to death, and acute intestinal inflammation was identified histopathologically.

Causes and mechanisms of death

Although the causes of death were heterogeneous overall, infectious and septic complications were the predominant mechanisms in bariatric surgery-related deaths.

Among the bariatric surgery-related cases ($n=24$), the most prominent causes and mechanisms of death included intra-abdominal infection secondary to anastomotic leakage (5/24), perforation (Fig. 2) (7/24), peritonitis (Fig. 3) (19/24), sepsis (12/24), mesenteric venous thrombosis (4/24) (Fig. 4), and vascular injury during surgery (4/24). In contrast, causes of death in cases classified as unrelated to bariatric surgery were more heterogeneous, including cardiovascular causes (9/27), complications following liposuction (5/27), pulmonary thromboembolism (2/27), COVID-19 pneumonia (1/27), generalized body trauma (by traffic accident)(1/27), and cerebrovascular disease (1/27). Notably, a distinct subgroup of deaths was related to psychiatric, behavioral, and self-harm-associated mechanisms (8/27). This subgroup included poisoning/intoxication ($n=6$) and hanging ($n=1$), as well as one case of fall from height considered as a self-harm event. Among intoxication-related deaths, the identified agents included amphetamine ($n=1$), combined tramadol and methamphetamine intoxication ($n=1$), fluvoxamine ($n=1$), rocuronium ($n=2$), and cocaine ($n=1$). (Table 3C).

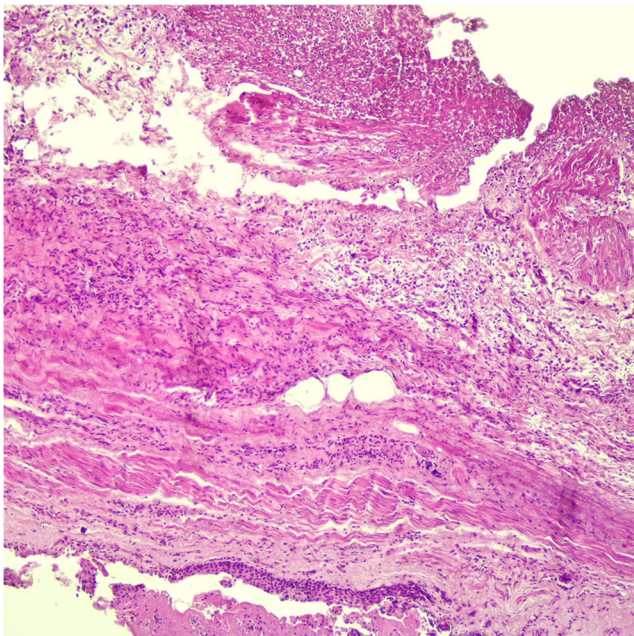


Fig. 2 Intestinal perforation. The intestinal wall demonstrating transmural necrosis with focal perforation. There is extensive tissue destruction with loss of normal mucosal architecture, dense inflammatory infiltrate, and areas of fibrin deposition. The serosal surface shows prominent acute inflammatory changes (H&E stain, x10)

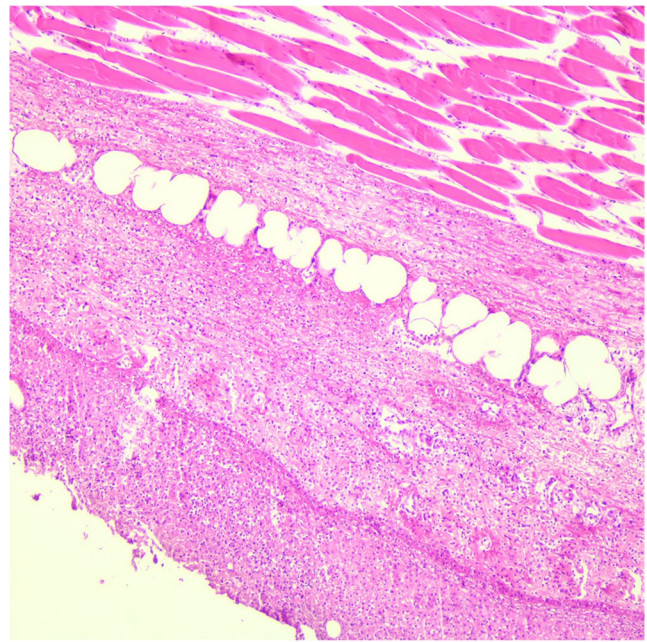


Fig. 3 Acute suppurative peritonitis. The peritoneal surface revealing acute suppurative peritonitis. There is diffuse infiltration by neutrophils, fibrinous exudate, and involvement of adjacent adipose tissue (H&E stain, x10)

Discussion

This retrospective autopsy-based case series provides a forensic and pathological overview of deaths occurring in individuals with a history of bariatric surgery. The present findings highlight the central role of autopsy and histopathological examination in clarifying the pathological basis of death and in determining whether death was causally related to bariatric surgery. Nearly half of the cases were classified as bariatric surgery-related deaths, most of which occurred in the early postoperative period and were associated with abdominal and systemic complications such as leakage-related infection, perforation, peritonitis, sepsis, and thrombotic or vascular events. Autopsy and histopathological examination were also valuable in distinguishing surgery-related from unrelated deaths, the latter of which displayed a markedly heterogeneous mortality profile.

The predominance of early postoperative deaths in the group in which death was considered related to bariatric surgery is consistent with the existing literature. Although bariatric surgery is generally considered a safe procedure, reported early mortality rates remain low but non-negligible, with 30-day mortality typically ranging between approximately 0.3% and 0.9% in large series [10, 12]. Major postoperative complications are also relatively uncommon but clinically important. Reported leak rates vary according to surgical technique; anastomotic leak after Roux-en-Y gastric

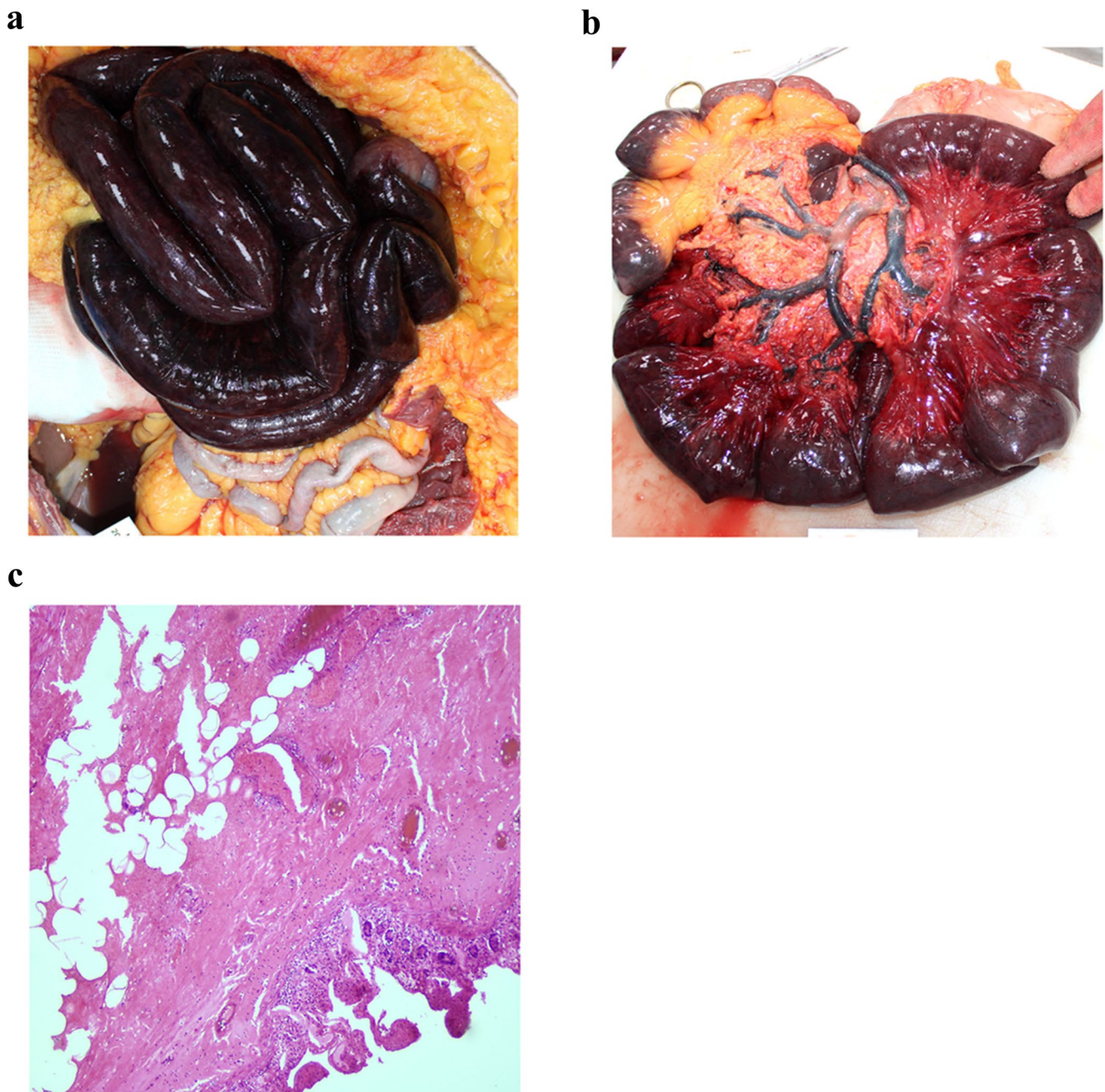


Fig. 4 **a** Hemorrhagic intestinal infarction. Intestinal loops revealing advanced hemorrhagic infarction. **b** Mesenteric vascular thrombosis. Intestinal segment demonstrating extensive mesenteric vascular thrombosis. The mesenteric vessels are markedly dilated and filled with dark thrombotic material. The bowel loops appear congested,

edematous, and violaceous, consistent with severe ischemia. **c**Trans-mural ischemic necrosis of the intestine. Histopathological examination of the intestinal wall showing trans-mural ischemic necrosis. There is marked mucosal destruction and vascular congestion. Areas of hemorrhage and inflammatory cell infiltration are evident (H&E stain, x10)

bypass has been reported in approximately 1.1% of cases, whereas staple-line leak after sleeve gastrectomy is generally reported in the range of approximately 1.5%–2.4% [8, 9, 13]. Venous thromboembolic events have been reported in roughly 0.3%–2.2% of cases and remain a major contributor to postoperative mortality [14]. In the Longitudinal Assessment of Bariatric Surgery (LABS) study, the most

common cause of 30-day mortality was sepsis, followed by cardiac causes and pulmonary embolism [12].

From a pathological perspective, our findings indicate that fatal postoperative deterioration in this setting is most commonly characterized by rapidly progressive abdominal and systemic processes, particularly those associated with leakage, infection, and thrombotic or vascular injury. In our

series, gross findings were frequently compatible with peritonitis and systemic infectious processes, and these macroscopic findings were supported histopathologically by acute peritonitis, acute inflammation, microthrombi, and necrosis of the gastric or intestinal wall. Taken together, these findings suggest that autopsy and histopathological evaluation provide complementary information in identifying the pathological mechanisms underlying death after bariatric surgery.

The integration of autopsy and histopathological examination into the evaluation of death in individuals with a history of bariatric surgery represents one of the main strengths of the present study. In the group in which death was considered related to bariatric surgery, the most prominent macroscopic findings were perforation, anastomotic leakage, intra-abdominal hemorrhage, and findings consistent with peritonitis or sepsis. Histopathological examination most frequently demonstrated necrosis of the gastric or intestinal wall, acute inflammation, microthrombi, and microscopic findings consistent with acute peritonitis. A comparable autopsy-based pathological pattern has also been described in previous forensic case series, further supporting the value of detailed postmortem examination in clarifying the mechanism of death after bariatric surgery [15, 16]. Taken together, these findings suggest that autopsy and histopathological examination may clarify not only the immediate cause of death, but also the pathological progression from postoperative complication to fatal outcome. This is particularly relevant in postoperative deaths, in which clinically occult processes such as leakage, evolving intra-abdominal infection, or thromboembolic events may not always be fully recognized before death [15, 17].

Another important aspect of the present study is the inclusion and separate evaluation of deaths considered unrelated to bariatric surgery. In this group, causes of death were heterogeneous and included natural disease processes, trauma, intoxication, and complications of other surgical interventions. A notable proportion of these deaths was associated with complications following liposuction, which is clinically relevant given that patients undergoing bariatric surgery frequently require subsequent body contouring procedures due to excess skin and soft tissue changes after significant weight loss. Previous studies have shown that reconstructive and aesthetic procedures, including liposuction, are commonly performed in this population [18]. Although generally considered safe, these procedures may carry additional risks in post-bariatric patients, particularly in the presence of residual comorbidities, nutritional deficiencies, or altered physiological status. Notably, Turkey is among the leading global destinations for both bariatric and aesthetic surgery tourism, including liposuction, which may partly account for the presence of liposuction-related deaths

in this autopsy-based series [19]. From a forensic perspective, distinguishing deaths related to such secondary interventions from those directly attributable to bariatric surgery is essential for accurate causal attribution. This distinction is particularly important in autopsy-based series, where temporal association may be misinterpreted as a causal relationship; therefore, the mere presence of bariatric surgery in the medical history should not be considered evidence of causality without comprehensive postmortem evaluation.

An additional noteworthy finding of the present study is the presence of psychiatric, behavioral, and self-harm-related death patterns among cases classified as unrelated to bariatric surgery. In this subgroup, a considerable proportion of deaths were due to intoxication, suicide, or other self-inflicted mechanisms. Although these deaths were not causally related to the surgical procedure itself, this pattern is consistent with previous studies reporting an increased risk of self-harm, substance use, and suicide following bariatric surgery. Large population-based studies have demonstrated that the rate of self-harm emergencies and suicide attempts is higher in the postoperative period compared to the preoperative period [20]. Similarly, systematic reviews and meta-analyses have suggested an increased risk of suicide and self-harm following bariatric surgery. Although reported suicide rates vary across studies, self-harm and suicide attempts have been shown to be significantly increased compared with both the preoperative period and matched control populations [21, 22]. While the underlying mechanisms remain multifactorial and not fully understood, proposed explanations include psychosocial factors, altered alcohol metabolism, pre-existing psychiatric vulnerability, and postoperative behavioral changes. In this context, the findings of the present study further underscore the importance of considering long-term psychiatric assessment and follow-up in patients undergoing bariatric surgery.

When compared with previous autopsy-based studies, including those by Omalu et al. [10, 11] and Tuncel et al. [16], the present study provides several additional insights. While earlier series have primarily focused on overall mortality patterns and causes of death following bariatric surgery, the current study integrates detailed histopathological evaluation with autopsy findings, allowing a more comprehensive characterization of the underlying pathological processes. In particular, the systematic assessment of microscopic findings such as gastrointestinal wall necrosis, microthrombi, and acute peritonitis provides a more precise understanding of the progression from postoperative complication to fatal outcome. Furthermore, unlike previous reports, deaths were explicitly categorized as bariatric surgery-related or unrelated, enabling a clearer distinction between causal and incidental associations. This approach also allowed the identification of distinct subgroups, including deaths related

to psychiatric and self-harm-associated mechanisms, as well as deaths associated with secondary surgical interventions such as liposuction. Compared with the study by Tuncez et al., which reported similar macroscopic causes of death, the present study extends these findings by emphasizing the role of histopathological correlation and by providing a more detailed forensic classification of death mechanisms. Taken together, these aspects represent the main contributions of the present study to the forensic and pathological literature on bariatric surgery-related deaths.

The present study has several limitations that should be acknowledged. First, its retrospective design and autopsy-based case selection inherently introduce selection bias, as the study population does not represent all patients undergoing bariatric surgery but rather a medicolegal subgroup in whom death required postmortem investigation. Second, the availability and completeness of clinical records were variable across cases, which limited detailed clinicopathological correlation in some instances. Third, preoperative anthropometric and clinical data, including baseline BMI and comorbidity burden, were not uniformly available and therefore could not be incorporated into comparative analyses. In addition, although the study provides detailed pathological characterization of fatal cases, its descriptive design does not allow estimation of incidence or risk at the population level. Nevertheless, the integration of autopsy findings, histopathological examination, and forensic case review provides a level of pathological detail that is rarely available in the existing bariatric surgery literature.

In conclusion, deaths occurring in individuals with a history of bariatric surgery represent a pathologically and forensically heterogeneous group. In cases where death was related to bariatric surgery, early postoperative fatality was most commonly associated with leakage-related intra-abdominal infection, perforation, peritonitis, sepsis, and thrombotic or vascular complications. Conversely, in a substantial proportion of cases, death was determined to be unrelated to bariatric surgery. This finding indicates that, in individuals with a history of bariatric surgery, causality cannot be inferred from surgical history alone and that careful differential postmortem evaluation is required. The present findings demonstrate that autopsy and histopathological examination are essential not only for determining the cause of death, but also for establishing whether death is causally related to bariatric surgery. These findings contribute to a more accurate forensic and pathological interpretation of fatal outcomes after bariatric surgery. They also underscore the importance of multidisciplinary postoperative follow-up, particularly with respect to early surgical complications and longer-term psychiatric or behavioral risk patterns.

Author contributions Conceptualization: Beyza Keskin Ozturk, Aytul Bugra, Huseyin Cagri Sahin; Methodology: Beyza Keskin Ozturk, Aytul Bugra, Huseyin Cagri Sahin; Data curation; Beyza Keskin Ozturk, Aytul Bugra, Huseyin Cagri Sahin, Muhammed Oduncu, Furkan Kılıç; Formal analysis and investigation: Beyza Keskin Ozturk; Writing - original draft preparation: Beyza Keskin Ozturk; Writing - review and editing: Beyza Keskin Ozturk, Aytul Bugra; Supervision: Beyza Keskin Ozturk, Aytul Bugra, Huseyin Cagri Sahin.

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Declarations

Ethical approval Council of Forensic Medicine, Education and Scientific Research Commission, dated 10/02/2026, and numbered 21589509/2026/101.

Ethics approval Ethics approval was obtained from the Scientific Research and Education Council of the Council of Forensic Medicine (Approval no: 21589509/2026/101, date: 10.02.2026) prior to the initiation of the study.

Competing interests The authors have no relevant financial or non-financial interests to disclose.

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