

# Clinical Manifestation and Factors Related to the Severity of Corrosive Ingestion Patients: The Single Center's Experience

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**Background:** *Corrosive ingestion is one of the common and serious problems in Thailand. The present study aimed to describe the clinical manifestation of corrosive ingestion patient and identify factors related to the severity of an esophageal injury.*

**Objective:** *To review the clinical manifestation of the patients presented with corrosive ingestion at the Somdech Phra Pinklao Hospital and to analyze the correlation between the clinical manifestation and the correlation of the severity of the esophageal injury.*

**Material and Method:** *We reviewed the medical records of patients presented with corrosive ingestion at the emergency department of the Somdech Phra Pinklao Hospital between January 2004 and June 2012, and analyzed their correlation between these data and the severity of an esophageal injury.*

**Results:** *There were 131 patients (82 women, 49 men) with mean age of 27 years. The most common reason of corrosive ingestion was argumentation with their partner. Acid was a more common corrosive substance than base (acid = 118 and base = 13). The clinical manifestation was nausea/vomiting, dysphagia, chest pain, abdominal pain, hoarseness, drooling, and hematemesis. Esophagogastroduodenoscopy was performed in 117 patients. The results showed esophageal injury grade 1 in 41 patients, grade 2a in 31 patients, grade 2b in 11 patients, grade 3a in 11 patients, and grade 3b in one patient. Three cases developed esophageal perforation. After two months follow-up, there were esophageal strictures in 30% of grade 2b and 100% of grade 3a.*

**Conclusion:** *Corrosive ingestion is more common in female and from acid agent. Leukocytosis, chest pain, and vomiting are associated with severity of esophageal injury. Severity according to initial esophagogastroduodenoscopy could predict subsequent stricture.*

**Keywords:** *Corrosive ingestion, Caustic injury, Esophageal injury*

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Ingestion of caustic substances is a common and serious problem in Thailand<sup>(1,2)</sup>. The incidence of acute caustic injury (so call corrosive ingestion) vary in each country. In United States, there were 206,636 cases of caustic injury patient with cleaning substances (both acid and alkali) in 2000<sup>(3)</sup>. In Western countries, the incidence of this condition is reducing<sup>(4,5)</sup>. However, in developing country, it is still increasing<sup>(6)</sup>. In Thailand, the acute caustic injury is a critical socio-medical problem. In 2000, the incidences of suicidal patient by liquid substance and drug were 10.2 per 100,000 population (data from The Division of Epidemiology, Ministry of Public Health, Thailand)<sup>(2)</sup>. Most common cause of caustic injury in Thailand is

deliberate self-harm due to the inability of individual to handle stressful situations<sup>(2,7)</sup>. The most common cause is from intentional ingestion, which is different from Western countries.

This group of patients usually come to an emergency department with dysphagia, chest or abdominal pain, and oral mucosal burning. Every patient who is diagnosed with caustic ingestion should be admitted to the hospital and should be performed endoscopy to evaluate the severity of upper gastrointestinal tract injury within first 24 hours after ingested the material. If the patient had a mild degree of upper gastrointestinal tract injury, they would be allowed to start oral intake and receive some medication for symptomatic treatment. Patients who have more severe degree of injury should be on close observation for early detection of sequelae or complication such as esophageal or stomach perforation. Some of them

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may need parenteral nutrition or jejunostomy tube feeding. The late complication of corrosive ingestion is esophageal stricture (beginning in cicatrization and scarring phase, which is about the third week following the injury) or esophageal carcinoma (in average, 40 years later)<sup>(8)</sup>. Therefore, patients should be followed-up for their clinical condition for at least eight weeks after ingested substance.

There are many studies about caustic injury. Most studies describe pediatric patients; however, there are few studies showing information of corrosive ingestion in adults. In addition, most studies differ of etiology, clinical manifestation, and pattern of upper gastrointestinal injury.

In the present retrospective analytic study, we aimed to describe the clinical manifestation of corrosive ingestion patient and identify factors related to the severity of corrosive ingestion patients from endoscopic finding.

## Material and Method

All admissions to the Somdech Phra Pinklao Hospital in Bangkok, Thailand were reviewed for patients diagnosed with caustic injury between January 2004 and June 2012. This study was approved by the Ethics Committee of Royal Thai Naval hospital (RLM 018/56). Only patients with the first diagnosis of caustic injury presenting at the emergency department were included. The patients who received any treatment from others hospital or health care center, and had ingested a product that could not be clearly identified were excluded. Prior to the present study, we received permission to review all of the medical records from the Director of Somdech Pra Pinklao Hospital. All records were reviewed by one surgeon. The patient's demographic data, signs, symptoms, and laboratory/radiologic investigation were evaluated. Esophago-gastroduodenoscopy (EGD) results were reviewed. Additionally, we also reviewed the outpatient note until the last follow-up of the patient for this event.

In general practice, we classify the severity of upper gastrointestinal injury as follows<sup>(9)</sup>:

Grade 0: Negative finding

Grade 1: Edema and hyperemia of the mucosa

Grade 2a: Friability, hemorrhage, erosion, blisters, whitish membrane, exudates, and superficial ulceration

Grade 2b: Degree 2a plus deep discrete or circumferential ulcerations

Grade 3a: Small scatters areas of multiple ulcerations and areas of necrosis

Grade 3b: Extensive necrosis

In the Somdech Pra Pinklao Hospital, all patients are treated with the same guideline. They are admitted to the general surgical ward or surgical intensive care unit (ICU) depend on their degree of severity. Within the first six to 24 hours after ingesting the substance, the patient will be performed EGD for evaluation of the severity of upper gastrointestinal injuries. If the patient had upper gastrointestinal tract injury grade 0 or 1, they would be allowed to take oral diet post endoscopy. If the patient had injury grade 2a, they would be allowed to take oral diet when clinical conditions improved. However, if the patient had more severe injury, they would be admitted to the surgical ICU, absolute no oral diet and on parenteral nutrition until the clinical condition improved. We give antibiotic to the patient who may not have EGD within eight hours after ingesting the substance and continue antibiotic in every patient having injury grading greater than 2a. We do not use steroid. We usually follow-up the clinical condition of every patient at out-patient unit at three weeks post injury for the patient grade I esophageal injury, and three and six weeks post injury for greater than grade 2a esophageal injury patients.

All of our patients who intentionally ingested corrosive agent were sent for psychiatric consultation before discharge and they were managed as adjustment disorder patient.

We reviewed all of the patient's medical charts on the follow-up date and looked for an evidence of esophageal stricture. Some patients did not come on the follow-up schedule; therefore, we made a phone call to each patient to gather information for evaluating the presence of esophageal stricture.

The information was analyzed to identify the correlation between the degree of injury and the upper gastrointestinal tract injury.

## Data analysis

Data are presented as the description of frequency and percentages. To evaluate the correlation between signs and/or symptoms and the presence and severity of upper gastrointestinal lesions, all statistical analyses were performed using the Chi-square test or Fisher's exact test. A *p*-value smaller than 0.05 was considered statistically significant. Logistic regression was performed to assess the set of independently related factors of upper gastrointestinal tract severity. All statistical analyses in the study were performed with STATA software, version 11.

**Table 1.** Demographic data (n = 131)

Data	n (%)
Sex	
Male	49 (37.40)
Female	82 (62.60)
Age (years)	
Mean ± SD	27.11±10.5
Median	25
Marital status	
Single	54 (41.22)
Married	66 (50.38)
Divorce	7 (5.34)
Widow/widower	4 (3.05)
Education	
Lower than high school	68 (51.91)
High school	45 (34.35)
Bachelor's degree	9 (6.87)
Master degree	9 (6.87)
N/A	8 (6.11)
Religious	
Buddhist	123 (93.89)
Christ	2 (1.53)
N/A	6 (4.58)
History of psychiatric disorder	
Yes	4 (3.05)
No	127 (96.95)
Previous history of suicidal attempt	
Yes	9 (6.87)
No	122 (93.13)

N/A = not applicable

**Table 2.** Event characteristic (n = 131)

	n (%)
Type of ingestion agent	
Acid	118
- Toilet cleaning agent	
Brand	
• Duck	51
- Purple	21
- Pink	5
- Yellow	3
- White	3
- Unspecify color	19
• Vixol	16
• Magiclean	10
• Vim	6
• Tesco lotus	2
• Kick off	1
• Neo	1
• Unspecify brand	31
Base	13
Etiology	
Dispute with boy/girlfriend	45 (34.35)
Dispute with parents	14 (10.69)
Accident	4 (3.05)
Stress	12 (9.16)
N/A	56 (42.75)

## Results

In the present study, 131 patient's medical charts, spanning 8 years, were reviewed. The demographic data is shown in Table 1. There were 82 female patients (62.6%) and 49 male patients (37.4%). The mean age was 27.11 years (range: 13 to 93). According to their marital status, acid ingestion was most commonly used substance (n = 118, 90.1%), and most were toilet cleaning agent. Base ingestion (e.g., bleaching agent, alkaline detergent) was used in fewer cases (n = 15).

The most common cause for the ingestion of corrosive agent was interpersonal conflicts among girl/boyfriend (n = 45, 34.35%), interpersonal conflicts

**Table 3.** Clinical manifestation and laboratory investigation of patient (n = 131)

Symptoms and signs	n (%)
Symptoms	
Nausea/vomiting	92 (70.23)
Dysphagia/odynophagia	35 (26.72)
Chest pain	14 (10.69)
Hoarseness	9 (6.87)
Drooling	3 (2.29)
Abdominal pain	75 (57.25)
Hematemesis	1 (0.76)
Stridor	0 (0.00)
Signs	
Fever	6 (4.58)
Tachypnea	11 (8.40)
Tachycardia	21 (16.03)
Hypotension	1 (0.76)
Mucosal burn	58 (44.27)
Abdominal tenderness	31 (23.66)
Subcutaneous emphysema	1 (0.76)
Abdominal guarding	1 (0.76)
Decrease breath sound	0 (0.00)
Chest X-ray (n = 116)	
Normal	113 (97.41)
Abnormal	3 (2.59)
Neck X-ray (n = 12)	
Normal	10 (83.33)
Abnormal	2 (16.67)
White blood cell count (cell/cm <sup>3</sup> )	
Mean	10,936.75±5,046.00
Min to max	4,700 to 32,400
Na (mmol/L)	
Mean	139.97±3.61
Min to max	128 to 161
K (mmol/L)	
Mean	3.67±0.39
Min to max	2.8 to 4.6
Cl (mmol/L)	
Mean	106.96±4.15
Min to max	95 to 115
HCO <sub>3</sub> (mmol/L)	
Mean	22.29±3.64
Min to max	9 to 29

among their parent (n = 14, 10.69%), financial difficulty (n = 12, 9.16%), and accidental (n = 4, 3.05%), as shown in Table 2. The clinical symptoms and laboratory finding are shown in Table 3. The most frequently presenting symptoms were nausea/vomiting (n = 92, 70.23%), abdominal pain (n = 75, 57.25%), dysphagia (n = 35, 26.72%), chest pain (n = 14, 10.69%), hoarseness (n = 9, 6.87%), drooling (n = 3, 2.29%), and hematemesis (n = 1, 0.76%). In addition, the clinical signs in this group of patients were mucosal burn (n = 58, 44.27%), abdominal tenderness (n = 31, 23.66%), tachycardia (n = 21, 16.03%), tachypnea (n = 11, 8.4), fever (n = 6, 4.58%), hypotension (n = 1, 0.76%), abdominal guarding (n = 1, 0.76%), and subcutaneous emphysema (n = 1, 0.76%). EGD was performed within 24 hours after ingesting corrosive substance in 117 patients (89.3%). Table 4 shows EGD results and Table 5 shows the site of injuries related to grading of injuries. Most of the patients were grade 1 injuries (n = 41, 31.3%) There were 68 cases of esophageal injuries and 56 cases of stomach injuries.

In our record, there were three patients who died from caustic injury. The first case was a 55-year old male presenting in an emergency room (ER) with a history of gold bleaching agent ingestion about

100 ml two hours before coming to the hospital. This patient had a medical history of diabetic mellitus and chronic alcoholism. He presented with nausea, vomiting, dysphagia, drooling, and abdominal pain. Clinical examination showed agitation, oral mucosal burn, and epigastrium tenderness. His vital signs were, blood pressure 150/80 mmHg, heart rates 88/minute, respiratory rate 20/ minute, and body temperature 37°C. The initial therapy consisted of intravenous fluid administration, proton pump inhibitors, and antibiotics. He was performed esophagoscopy four hours after admission. The result showed mid thoracic esophageal injury grade 2a and entire stomach injury grade 3b. Arterial blood gas showed acidosis (pH 7.1). He had cardiac arrest due to severe acidosis during waiting for the operation and passed away later.

The second case was a 27-year old male with an underlying major depressive disorder. He had multiple experiences of suicidal attempt. He presented at the ER with a history of toilet cleaning agent ingestion 500 ml after having an argument with his father. His father gave him a raw egg to induce vomiting and brought him to the ER 30 minutes later. At the ER, he had hoarseness, chest pain, and tachypnea. His vital signs were blood pressure 100/70 mmHg, heart rate

**Table 4.** Esophagogastroduodenoscopy (EGD) result

	n (%)	Acid (n)	Base (n)	Hospital stay (day)	1st feeding (day)	Full feeding (day)	Stricture of esophagus/pylorus (n)
Normal	22 (16.79)	18	4	2.27	1.50	1.73	0/0
Grade 1	41 (31.30)	36	5	3.05	1.63	2.29	0/0
Grade 2a	31 (23.66)	29	2	4.37	2.53	3.45	1/0
Grade 2b	11 (8.40)	10	1	10.73	4.40	9.00	3/1
Grade 3a	11 (8.40)	11	0	7.45	4.70	6.10	6/3
Grade 3b	1 (0.76)	1	0	1 (death)	-	-	-
Do not EGD	14 (10.69)	13	1	2 (death)	-	-	-
Perforation	3 (2.36)						

**Table 5.** Injuries sites

	Esophagus			Stomach				Duodenum	
	Cervical	Thoracic	EGJ	Cardia	Body	Antrum	Pylorus		Diffuse
Grade 1	11	11	14	2	7	2	1	15	1
Grade 2a	15	28	14	4	8	3	2	8	1
Grade 2b	4	8	5	1	7	1	1	2	0
Grade 3a	0	6	4	0	7	2	3	0	0
Grade 3b	0	0	0	0	1	1	1	0	0
Esophagus	68/95 (71.58%)								
Stomach	56/95 (58.95%)								
Duodenum	2/95 (2.1%)								

EGJ = esophagogastric junction

110/minute, respiratory rate 28/minute, and body temperature 37°C. During the physical examination, there were subcutaneous emphysema, wheezing sound in both lungs, and abdominal guarding. He was performed endotracheal (ET) intubation and intravenous fluid for resuscitation. Chest X-ray showed patchy infiltration on both lungs. He was diagnosed as esophageal or stomach perforation, and he was brought to the ICU for resuscitation process prior to operation. During the transfer to the operative theater, he had cardiovascular collapse due to severe acidosis. Cardiopulmonary resuscitation was performed for 30 minutes and the patient expired later.

The third case was a 39-year-old female who made a suicide attempt by ingesting 500 ml of toilet cleaning agent about 30 minutes prior to be brought to hospital. At the ER, her vital signs were stable. There was oral mucosal burn, marked tenderness at epigastrium with generalized guarding, and an open fracture of the left calcaneus. She had abdominal exploration, and found extensive necrosis of stomach and large perforated area at the esophagogastric junction with large amount of food particle contamination. Esophagogastrectomy and cervical esophagectomy with feeding jejunostomy were performed. This patient had severe acidosis during operation, and expired after the operation was finished.

The authors calculated data to evaluate the correlation of sign/symptom, laboratory investigation, and severity of upper gastrointestinal tract injury (Table 6). The results showed the correlation of the present of nausea/vomiting, chest pain, and dysphagia with more severity of esophageal injury ( $p$ -value = 0.006, 0.037, and 0.04, respectively). In addition, the correlation of high white blood cell count (greater than 12,000) with more severity of esophageal injury ( $p$ -value = 0.0001) as well. The associations of sodium, potassium, chloride, and bicarbonate with the severity of esophageal injury were not statistically significant.

Ten patients had esophageal stricture during the follow-up period. One patient developed following grade 2a esophageal injury (3.2%, 1/31). Following a grade 2b and a grade 3 esophageal injury, stricture incidence was 30% (3/10) and 100% (6/6), respectively. All patients with a severe mucosal injury of pylorus had pyloric stricture within two months.

## Discussion

In the present study, many adult patients presented with corrosive ingestion. Worldwide, children represent 80% of the ingestion injury population,

primarily due to accidental ingestion<sup>(10,11)</sup>. However, we have only 13 patients below the age of 18 [range from 13 to 17 (9.9%)], and all of them had suicidal intent. Most of our patients had some argument with their spouse and decided to ingest toilet cleaning agent. The corrosive substances are different in each study from each area and country. Alkaline material accounts for most caustic ingestions in Western countries, whereas injuries from acid are more common in some developing countries where hydrochloric acid are easily accessible<sup>(12)</sup>.

The relationship between symptoms and severity of the injury is uncertain. Our study showed the correlation of the present of nausea/vomiting, chest pain, dysphagia, and high white blood cell count (greater than 12,000) with more severity of esophageal injury ( $p$ -value = 0.006, 0.037, 0.04, and 0.0001, respectively). Some studies showed the relationship of oral mucosal burn with the severity of esophageal injury<sup>(2)</sup>. However, some studies show different result<sup>(13)</sup> where up to 70% of the patients with oropharyngeal burns did not have significant damage to the esophagus. The present study could not demonstrate the relationship of oral mucosal burn with the severity of the esophageal injury. In some previous studies, stridor and drooling were considered 100% specific for significant esophageal injury<sup>(2,14)</sup>. In the present study, we had three patients presenting with drooling, but none of them had esophageal injury after esophagoscope.

**Table 6.** Factor related to signs, symptoms, laboratory, and severity of esophageal injury

Variable	Odds ratio	95% CI	$p$ -value
Dysphagia	3.03	1.05 to 8.61	0.040
Hoarseness	7.41	0.77 to 70.97	0.082
Nausea/vomiting	4.88	1.57 to 15.17	0.006
Chest pain	4.41	1.09 to 17.80	0.037
Abdominal pain	0.77	0.29 to 2.03	0.592
Mucosal burn	2.33	0.94 to 5.77	0.068
Abdominal tenderness	0.83	0.27 to 2.57	0.748
Fever	2.15	0.18 to 25.22	0.542
Tachypnea	7.58	0.75 to 76.55	0.086
Tachycardia	2.92	0.81 to 10.50	0.100
WBC	11.57	3.46 to 38.71	<0.001
Sodium	3.19	0.09 to 109.74	0.520
Potassium	0.77	0.29 to 2.07	0.608
Chloride	0.69	0.23 to 2.04	0.497
Bicarbonate	2.32	0.88 to 6.12	0.089

WBC = white blood cell

Acids cause coagulation necrosis, with eschar formation that may limit the substance to penetrate deeper and injure more. Conversely, alkalis combine with tissue proteins and causes liquefying necrosis and saponification, and penetrate into deeper tissues. This is helped by a higher viscosity and a longer contact time through the esophagus. Additionally, alkali absorption leads to thrombosis in blood vessels, impeding blood flow to the already damaged tissue<sup>(1)</sup>. Theoretically, alkalis are more frequently swallowed accidentally than acids, since strong acids cause an immediate burning pain in the mouth. Some studies found that alkali ingestion cannot be used as a reliable predictor for severe digestive lesions<sup>(15,16)</sup>. We also did not find the association of type of substances with an esophageal injury because there are many factors related to the severity of esophageal cancer such as a degree of acidity or alkalis (pH) and an amount of ingestion, which we could not demonstrate all relevant data.

The esophageal stricture was detected in 7.63% of the medical records analyzed. All patients developed clinical of an esophageal stricture within two months of the follow-up period. The rate of esophageal stricture in our study were 30%, and 100% with esophageal injury grade 2b and 3a respectively. We also found one patient (3.2%) with an esophageal stricture in grade 2a injury patient. Compared with the previous report, the incidence of stricture following a grade 2b and a grade 3 esophageal burn, strictures were 71% and 100%, respectively<sup>(17,18)</sup>. The incidence of coexistent gastric injury in the literature ranges from 20.0% to 62.5%, extending from simple hyperemia/erosions to diffuse transmural necrosis<sup>(19,20)</sup>. Coexistent gastric injury in 56 patients (58.95%) was found, and four of these patients had severe injuries to the pylorus. They all developed pyloric stenosis later (4.2%).

This was retrospective study, so there are some limitations. As with all retrospective studies, incomplete information may have existed in the medical record, and it was possible that some signs or symptoms were not recorded in the document.

## Conclusion

In the present study, we illustrate the clinical presentation of corrosive ingestion patient in the Somdech Phra Pinklao Hospital and reveal factors related to the severity of an upper gastrointestinal injury. Leukocytosis, chest pain, and vomiting are associate with severity of esophageal injury. Severity

according to initial EGD could predict subsequent stricture.

Our study demonstrates the pattern of upper gastrointestinal injuries due to corrosive ingestion as one of the references for treatment of these patient later.

## What is already known on this topic?

We can use some clinical manifestation of the patients presenting with corrosive ingestion to predict the severity of esophageal injury. The severity according to initial EGD could predict subsequent stricture.

## What is this study adds?

This study showed the clinical manifestations of the patients presenting with corrosive ingestion at our center.

There are some factors related to the severity of esophageal injury that are different from some previous studies. Our study showed the correlation of the presence of nausea/vomiting, chest pain, dysphagia, and high white blood cell count with more severity of esophageal injury. Unlike some previous studies, this study cannot demonstrate the relationship of oral mucosal burn and drooling with the severity of the esophageal injury.

## Potential conflicts of interest

None.

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การศึกษาอาการแสดงและปัจจัยที่มีความสัมพันธ์ต่อความรุนแรงของการบาดเจ็บในผู้ป่วยกลืนกรด-ต่าง  
ปวัน จันทน์แสนโรจน์, ปิยะวัฒน์ วงษ์วานิช

ภูมิหลัง: ผู้ป่วยกลืนกรดต่างเป็นปัญหาสำคัญทางสาธารณสุขของประเทศไทยจึงมีความสำคัญของการศึกษาถึงอาการแสดงและปัจจัยที่มีความสัมพันธ์ต่อความรุนแรงของการบาดเจ็บในผู้ป่วยกลืนกรด-ต่าง เพื่อประโยชน์ในการดูแลรักษาผู้ป่วย

วัตถุประสงค์: เพื่อศึกษาอาการแสดงของผู้ป่วยกลืนกรด-ต่างที่ได้รับการรักษาในโรงพยาบาลสมเด็จพระปิ่นเกล้า และวิเคราะห์ปัจจัยที่มีผลต่อความรุนแรงของการบาดเจ็บของหลอดอาหาร

วัสดุและวิธีการ: ศึกษาข้อมูลย้อนหลังจากเวชระเบียนของผู้ป่วยกลืนกรด-ต่างที่ได้รับการรักษาในโรงพยาบาลสมเด็จพระปิ่นเกล้า ตั้งแต่ เดือนมกราคม พ.ศ. 2547 ถึง มิถุนายน พ.ศ. 2555 และวิเคราะห์ความสัมพันธ์ของปัจจัยต่างๆ ต่อความรุนแรงของการบาดเจ็บหลอดอาหาร

ผลการศึกษา: ผู้ป่วยทั้งหมด 131 ราย (หญิง 82 ราย และชาย 49 ราย) อายุเฉลี่ย 27 ปี สาเหตุที่พบบ่อยที่สุด คือ กลืนกรด-ต่างหลังจากทะเลาะกับแฟนหรือคู่ครอง มีการกลืนกรดมากกว่ากลืนต่าง (กรด 118 ราย และต่าง 13 ราย) อาการแสดงโดยทั่วไปที่พบได้ ได้แก่ คลื่นไส้ อาเจียน กลืนลำบาก เจ็บหน้าอก เสียเหงื่อ น้ำลายไหล และอาเจียนเป็นเลือด การส่องกล้องทางเดินอาหารในผู้ป่วย 117 ราย พบว่ามีการบาดเจ็บระดับ 1 จำนวน 41 ราย ระดับ 2a จำนวน 31 ราย ระดับ 2b จำนวน 11 ราย ระดับ 3a จำนวน 11 ราย และระดับ 3b จำนวน 1 ราย มีผู้ป่วยหลอดอาหารทะลุทั้งหมด 3 ราย จากการตรวจติดตามในเวลา 2 เดือน พบว่ามีภาวะหลอดอาหารตีบ ร้อยละ 30 ในผู้ป่วยที่บาดเจ็บระดับ 2b และ ร้อยละ 100 ในผู้ป่วยที่บาดเจ็บระดับ 3a

สรุป: การกลืนกรด-ต่าง พบบ่อยในผู้ป่วยหญิงและโดยส่วนมากเป็นการกลืนกรด จำนวนเม็ดเลือดขาวสูง อาการเจ็บหน้าอก และอาการคลื่นไส้ อาเจียนสัมพันธ์กับความรุนแรงของการบาดเจ็บต่อหลอดอาหารความรุนแรงของการบาดเจ็บของหลอดอาหารสามารถทำนายภาวะหลอดอาหารตีบในเวลาต่อมาได้

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