

Burst Abdomen (Acute Wound Failure) As A Complication of Corrosive Acid Poisoning- An Unusual Case Report

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Abstract

Corrosive poisons, alkaline and acidic, cause tissue destruction by dehydration and necrosis. Early complications are curable less consumption and early interventions. Patients die from direct or surgical complications due to severely damaged pharynx, oesophagus, stomach and larynx.

Postoperative disruption of abdominal musculo-aponeurotic layers is called burst abdomen (acute wound failure / wound dehiscence) which is among most alarming postoperative complications, mostly seen after emergency and exploratory laparotomy.

A 27 years male was admitted with corrosive acid ingestion presenting as fever, hematemesis, melena and dysphagia. Exploratory laparotomy was done for gastric perforation repair with feeding jejunostomy with throughout broad spectrum antibiotic coverage. On second post-operative week, burst abdomen (acute wound failure) was evident and he was operated again. But with further deterioration ultimately he died after one month.

Early endoscopic intervention with surgical management under proper precautions with maintenance of proper nutrition are utmost necessary for treatment of patients of corrosive poisoning to prevent immediate or early demise as well as irreversible late complications like malnutrition, dysphagia and oesophageal stricture.

Keywords: Corrosive; Burst Abdomen; Dehiscence; Laparotomy; Postoperative Complications.

Introduction

Suicidal and accidental fatality from corrosive poisoning is not uncommon in present days both in rural and urban settings. Corrosive poison ingestion causes both acute and chronic injury starting from tissue injury or perforation due to dehydration and necrosis upto stricture and dysphagia as late sequellae. Often surgical complications pose dreadful situations and risks patient's life as maintenance of proper nutrition or infection control falls short. Authors report an unusual case of death due to

ingestion of corrosive acid due to late complication as burst abdomen which was confirmed by autopsy.

Case History

A 27 years old male was admitted in the Medicine department of a tertiary care hospital via two rural health centres with fever, hematemesis, melaena dysphagia and odynophagia due to corrosive acid ingestion about 40hours back. He was treated conservatively with oral feeding along with total parenteral nutrition (TPN) but did not respond well. Upper GI endoscopy with barium meal follow through revealed gastric and intestinal perforation and exploratory laparotomy was done for repair with abdominal drain insertion and feeding jejunostomy. As the condition was not improving, he received four (4) units of blood transfusion and TPN was continued with feeding through jejunostomy. Even under broad spectrum antibiotic coverage, fever persisted. In the second post-operative week, burst abdomen was noted for which re-surgery was done

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with evident oedematous gut. The patient deteriorated more with time and he expired on 28th day of surgery.



Fig. 1: Ulcerated area over anterior abdominal wall



Fig. 2: Inflammation & excoriation of mucous membrane of both lips and oral mucosa



Fig. 3: Infected and ulcerated surgical wound

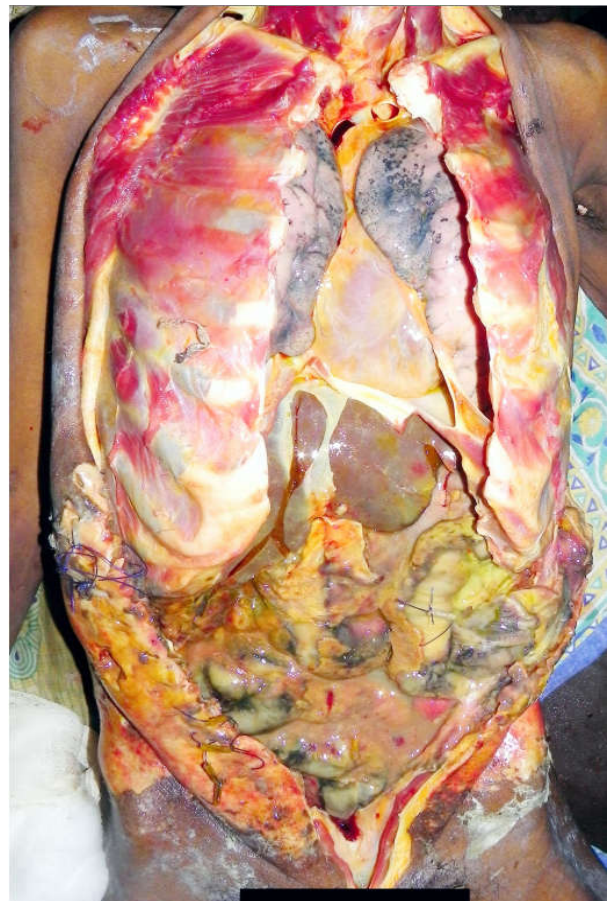


Fig. 4: Peritonitis and adhesion of peritoneum with intestinal coils and other adjoining organs



Fig. 5: Shrunken fibrosed thickened stomach wall with gross haemorrhage and evidence of repair

External Autopsy Findings

Thin emaciated dead body with bed sores with pus points present over back of chest, abdomen and buttocks. Rigor mortis passed off. Inflammation and excoriation of mucous membrane of both lips & oral mucosa noted.

One ulcerated area 9.5inch x12inch over anterior abdominal wall present with 7inch long surgical incision starting from 3.5inch below xiphisternum on midline extending vertically downwards and closed with 11 non-continuous stitches with soft plastic tube collars inserted within each. The area is congested, inflamed and infected with sporadic pus points and marginal granulation tissue. There is gaping of rectus sheath along the length of incised wound exposing the underlying structures inside abdominal cavity, notably intestinal coils and omentum. The stitched area and surrounding are thinned out, sodden and stitches can be removed easily by tearing the tissues with a gentle traction. Evidence of insertion of abdominal drain and feeding jejunostomy tube was noted as wounds over right and left lumbar region respectively.

Internal Autopsy Findings

Scalp and skull was healthy. Brain and thoracic organs were congested. Abdominal dissection revealed congested peritoneum with features of chemical peritonitis and subsequent adhesion of peritoneum with intestinal coils & other adjoining organs. Stomach showed thickened, shrunken and fibrosed wall with gross submucosal haemorrhage containing 30ml brownish yellow fluid with evidence of perforation repair. Liver, spleen and intestinal

coils were reddish black in colour with evidence of pus formation mixed with liquid blood and turbid peritoneal fluid. Mucosa of pharynx and oesophagus were congested.

Discussion

Corrosive acids cause potent desiccation with coagulation necrosis of tissues in contact. Apart from the pH of acid, molarity, concentration and affinity towards hydroxyl ions and time of exposure contribute to the tissue destruction. Ingestion of acid causes more damage to stomach than oesophagus as the squamous epithelium of the later is more resistant to acids [1]. Accidental poisoning is seen mainly in children, while deliberate suicidal attempts with consumption of larger volume are seen in teenagers and adults, as alleged in present case. It causes acute effects like immediate necrotic phase and perforation to stricture due to cicatrization and scarring as chronic complications passing through intermediate ulceration and granulation phase. Presence of fever strongly correlates with oesophageal injury as evidenced in present case along with lesion in oral cavity and pharynx. An early oesophagoscopy helps to identify the tissue damage but occasionally it increases the chance of perforation further [2]. Presence of perforation and extensive necrosis need immediate surgical repair and resection. Various postoperative complications may deteriorate the situation further. Burst abdomen (acute wound failure / wound dehiscence) is a relatively rare dreadful abdominal surgical postoperative complication characterized by disruption of abdominal musculo-aponeurotic layers occurring in 1% to 3% cases. It is seen in 6th to 8th postoperative day mostly (range 1 to 20 days) as also found in present case. Technical error in suture placement area being too close or far apart, infection, emergency surgery, malnutrition, increased intra-abdominal pressure are predisposing factors. Interrupted sutures yield better result than continuous sutures [3]. It is responsible for about 16% mortality rate with or without intra-abdominal organ protrusion (evisceration). Regular dressing till the formation of sufficient granulation tissue is necessary [4]. But in this case only marginal granulation tissue was formed which supports critical condition of the patient. The post-mortem finding of discoloured brownish gastric mucosal folds containing brownish fluid strongly suggests corrosive acid poisoning [5].

Conclusion

Cases of corrosive poisoning should be taken care of with immediate resuscitative measures especially in intensive care unit setup, prompt investigations and surgical intervention to save the life of the patient. Patient must be followed up for subsequent correctional measures to control postoperative complications and stricture formation as late sequel. Alternative sufficient nutritional support must be advocated as this type of patient suffers from malnutrition due to inability to take food and its digestion.

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