Case Report

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Self-Inflicted Cut-Throat Injuries in Psychiatric Patients During the COVID-19 Pandemic: A Report of Two Rare Cases

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ABSTRACT

Suicidal cut-throat injuries are rare in Indian society, as reported by the National Crime Records Bureau (NCRB). However, during the COVID-19 pandemic, a significant rise in unemployment among Indian youth led to increased psychological distress and depression, contributing to a surge in suicide cases, including those presenting with cutthroat injuries in emergency departments. This study reported two distinct cases of suicidal cutthroat injuries, both involving young individuals who were unemployed during the pandemic and suffered from underlying psychiatric disorders. Both patients presented with severe neck injuries, requiring immediate and complex intervention. Their conditions were further complicated by the psychological trauma associated with their mental health disorders. The management of these cases required a multidisciplinary approach, involving emergency medical care, surgical intervention, and psychiatric support. Both patients received prompt attention and stabilization, followed by psychological counseling and long-term psychiatric care. Their recovery was closely monitored, with a focus on addressing the root causes of their distress. These cases highlighted the increasing incidence of suicidal cutthroat injuries during the COVID-19 pandemic and emphasized the need for a comprehensive, multidisciplinary approach to managing both the physical and psychological aspects of such critical situations. This report underscored greater attention to mental health, particularly among the unemployed youth during crises.

Keywords: Suicidal, Cut-throat, Tracheostomy, COVID-19, Psychiatric-illness.

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Introduction

Suicide is a leading cause of death worldwide, especially among young people aged 15-29 years [1]. The World Health Organization (WHO) estimates approximately 800,000 suicide deaths annually, translating to one death every 40 seconds. However, statistics specific to "cut-throat" injuries as a suicide method are scarce. Cut-throat injuries, which can result from homicide, suicide, or accidents, are most commonly self-inflicted in developed countries, whereas homicide is more prevalent in developing nations [2-4]. These injuries are typically superficial, often accompanied by hesitation marks but can be

severe, involving damage to critical anatomical structures, such as the pharynx, trachea, and major vessels [5, 6]. Hemorrhagic shock and asphyxia are the primary causes of death in such cases, necessitating a multidisciplinary management approach involving trauma surgeons, otolaryngologists, vascular surgeons, and psychiatrists [7].

In India, suicide accounts for approximately 150,000 deaths annually, with hanging, poisoning, and self-immolation being the most common methods [8]. Cut-throat injuries are rarely reported separately, although psychiatric disorders such as depression and schizophrenia are well-established risk factors for suicide, particularly among individuals with a history of self-harm [3, 4]. The COVID-19 pandemic has significantly worsened global mental health, with the WHO reporting a 25% increase in depression and anxiety during the first year of the pandemic [9]. In India, mental health challenges have intensified, leading to a rise in depression, anxiety, and suicidal ideation. The National Mental Health Survey (2015-2016) previously reported depression at 2.7% and anxiety at 3.1%. However, these rates appear to have increased during the pandemic. Pathirathna *et al.,* [10] reported 12,746 suicide attempts and 33,345 suicides during the pandemic, identifying major risk factors as mental depression [11], COVID-19 quarantine [12], and financial crises [13-16]. The pandemic led to unprecedented global health and socioeconomic challenges. Lockdowns, social distancing, and isolation exacerbated mental health issues, identifying feelings of fear, helplessness, and uncertainty, particularly among young people, women, and individuals with pre-existing mental health conditions [9, 17]. Economic instability, job losses, and poverty have amplified stress, contributing to increased PTSD and self-harm behaviors.

This article presents two cases of suicidal cut-throat injuries in patients with pre-existing psychiatric conditions who were undergoing pharmacological treatment. Both individuals were unemployed during the pandemic, suggesting a potential association between economic stress, mental health deterioration, and self-harm. The management of such injuries typically requires immediate airway stabilization and hemorrhage control, followed by surgical intervention. The observed increase in severe self-harm cases during the pandemic underscored the critical need for integrated medical and psychiatric care, reinforcing the necessity for robust mental health support systems during global crises.

Case Presentation

Case 1

A 30-year-old man with a one-year history of treated depression was brought to our Emergency Department (ED) at AIIMS Patna on October 22, 2020, approximately six hours after a self-inflicted cut-throat injury, (Figure 1). The patient had been prescribed antidepressant medications along with a comprehensive treatment plan including psychotherapy, exercise, and lifestyle modifications, while demonstrating poor adherence to both pharmacotherapy and follow-up recommendations. His condition deteriorated significantly after losing his job during the COVID-19 pandemic, leading to the complete discontinuation of medications one month prior to the incident. According to the information provided by his family members, the patient exhibited uncharacteristic calmness and silence in the preceding period, though he had no previous suicide attempts. Initial assessment revealed an air-leaking neck wound threatening the airway, which was secured with a 7.5 Fr endotracheal tube (ET) while maintaining cervical spine precautions with a hard collar. Vital signs remained stable with oxygen saturation (SpO_2) of 95% on 40% FiO_2, blood pressure (BP) of 130/80 mm Hg, and a pulse rate of 94/min. No active bleeding was noted. Following standard preoperative evaluation, surgical exploration identified a complete transection of the thyrohyoid membrane extending to the floor of the mouth, with intact trachea and thyroid cartilage, minor bilateral sternocleidomastoid muscle injuries, and no involvement of major vessels, such as internal jugular vein (IJV) or carotid artery.

Fig. 1. Emergency presentation of a 30-year-old male with a self-inflicted cut-throat injury, 6 hours post-trauma

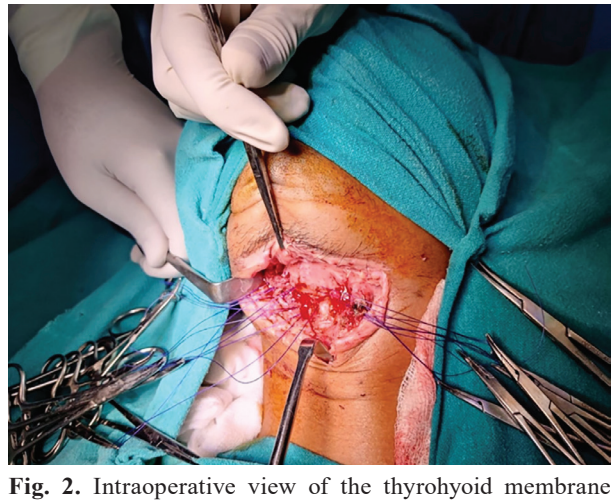

Fig. 2. Intraoperative view of the thyrohyoid membrane repair

The transected membrane was repaired using 3-0 PDS interrupted sutures (Figure 2) and reinforced with a sternocleidomastoid muscle flap. A distal tracheostomy was performed, followed by closure of the wound in layers with a 12 Fr negative pressure drain. Postoperatively, the patient was transferred to the intensive care unit (ICU) and then to the ward (Figure 3), where successful decannulation was performed on day seven. Psychiatric evaluation and counseling were provided in the ward. The patient was discharged on the 15th postoperative day in good physical and mental condition.

Case 2

A 30-year-old man with a two-year history of Bipolar Affective Disorder (currently in a manic phase with psychotic features) presented to the Emergency Department (ED) AIIMS Patna on November 3, 2020, with a self-inflicted neck wound. The patient was on maintenance therapy with Quetiapine and Lithium, for two years to manage his condition. However, medication adherence could not be reliably established due to poor historical reliability from both the patient and attendants. The patient's bipolar disorder was diagnosed approximately two years before the incident. Although he continued to work in a small shop during the early stages of the COVID-19 pandemic, his fear of contracting the virus, along with the news of numerous deaths related to COVID-19, led him to stop working and isolate himself at home. His psychiatric history was significant for a suicide attempt approximately six months prior to the pandemic, evidenced by multiple hesitation marks on his left forearm. Preceding the current incident, relatives reported escalating psychomotor agitation with violent behavior and pressured, irrelevant speech.

On the primary survey, the airway was compromised by an air-leaking neck wound necessitating emergent 7.5 Fr uncuffed tracheostomy tube placement through the wound site with mechanical ventilation. Cervical spine precautions were maintained with a hard collar. His vital signs included an oxygen saturation (SpO_2) of 98% on 40% FiO_2, BP of 100/60 mm Hg, and a pulse rate of 110/min. No vascular injury was noted on examination. The patient was agitated and attempted to assault the medical staff, requiring sedation.

A secondary survey revealed multiple superficial hesitation marks on the left forearm (Figure 4), with palpable distal pulses. A diagnostic workup, including routine blood tests and CT angiography of the neck was conducted. No vascular injury was identified.

The patient was then transferred to the operating theatre for surgical intervention. Under general anesthesia, a transverse incision was made to explore the neck wound. Surgical exploration under general anesthesia revealed an injury to the trachea and thyroid cartilage with irregular margins (Figure 5). No major vascular injury was present. The operative sequence included the conversion to a 7.5 Fr cuffed endotracheal (ET) tube. The trachea and thyroid cartilage were repaired using 3-0 PDS sutures (Figure 6), and a distal tracheostomy was performed (Figure 7). The ET tube was gently removed following definitive airway establishment. The surgical repair was completed with layered closure of the platysma, subcutaneous tissue, and skin, accompanied by placement of a 12 Fr sub-platysma drain for postoperative fluid management. The patient was monitored in the intensive care unit (ICU) and subsequently transferred to the ward. The tracheostomy tube was removed on the 10th postoperative day. Throughout hospitalization, psychiatric evaluation and counseling were conducted. The patient was discharged on the 15th postoperative day in stable condition, both physically and mentally. He was instructed to continue psychiatric follow-up. At 30-week follow-up, he maintains regular outpatient visits with no reported complications, demonstrating good wound healing and stable psychiatric status.

Fig. 3. Postoperative transfer to the ward and decannulation on day seven.

Fig. 4. Multiple superficial hesitant marks on the left forearm

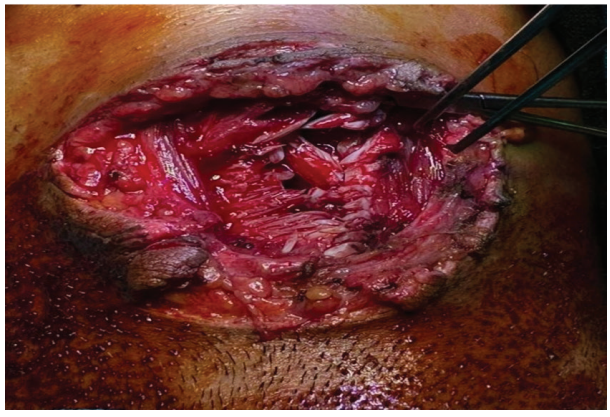

Fig. 5. Intraoperative view of tracheal and thyroid cartilage injury with irregular margins

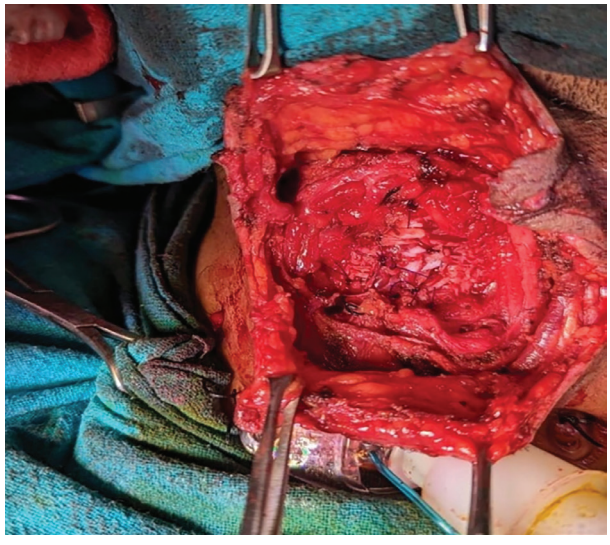

Fig. 6. Repair of the trachea and thyroid cartilage using 3-0 PDS sutures

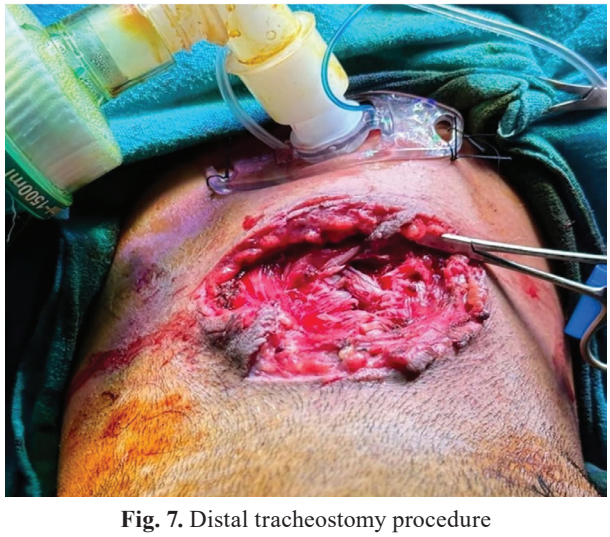

Fig. 7. Distal tracheostomy procedure

Both patients underwent structured psychological interventions during hospitalization, including comprehensive psychiatric evaluations to assess mental status and risk of further harm. The treatment approach prioritized crisis intervention, incorporating immediate counseling to address acute emotional distress, followed by psychoeducation on adaptive coping strategies. Both patients were closely monitored for any signs of mental instability and suicidal ideation. Both patients showed significant improvement in their mental status. They were evaluated by the psychiatric team before discharge, and it was confirmed that they were stable and no longer at immediate risk for self-harm. They were referred for ongoing outpatient psychiatric care, including psychotherapy and medication management, for sustained recovery. Unfortunately, longitudinal outcome data remain unavailable due to loss of follow-up after discharge.

Discussion

Suicide ranks among the top three causes of death among youth worldwide, with an estimated mortality rate of 16 per 100,000 individuals, equating to one death every 40 seconds and one attempt every 3 seconds [2]. In India, the suicide rate is 12 per 100,000 population, according to the National Crime Records Bureau (NCRB) report. The predominant methods of suicide are hanging, self-poisoning, drowning, and self-immolation [8, 18]. However, globally, the most common modes of suicide are pesticide ingestion, hanging, and firearms [19]. This contrasted sharply with the present case, where sharp object injuries, established only 2-3 % of all self-inflicted deaths in developed countries [20], an exceptionally rare method that required particular clinical attention. A study by Mohanty *et al.,* which examined 588 suicide victims, found that the primary reasons for suicide attempts were a financial burden (37%) and marital discord (35%) [21], contrasting with our cases where major depressive disorder served as the primary etiology. Their findings revealed that cut-throat injuries represented an uncommon suicide method in India (5%), dwarfed by the prevalence of hanging and poisoning (63%). Notably, both our cases involved 30-year-old individuals, matching the age demographic in Mohanty's cohort, who were psychiatric patients under pharmacological treatment. A distinctive feature of our cases was the use of kitchen knives for self-infliction, an atypical means of suicide. In the first case, the patient slit his throat while viewing himself in a mirror, an extremely rare documented phenomenon in suicide literature.

The COVID-19 pandemic triggered global economic instability and widespread job losses. Both patients in our case report were employed in companies prior to the pandemic but subsequently became unemployed during the crisis, which led to depression and ultimately their suicide attempts. Comprehensive psychiatric evaluations during hospitalization revealed a temporal association between job loss and the onset of severe depressive symptoms, with both patients demonstrating significant mental health deterioration following unemployment. While no formal psychological diagnosis existed pre-incident to establish direct causality, clinical assessments identified acute psychological distress stemming

from pandemic-induced financial instability as a major contributing factor to their suicide attempts. The cases illustrated how sudden unemployment during societal crises could serve as a potent psychosocial stressor, potentially exacerbating pre-existing mental health conditions or triggering new-onset psychiatric disorders. Regarding the timing of the diagnosis, Case 1 was diagnosed with depression before unemployment, while Case 2 had a pre-existing diagnosis of bipolar disorder, which was exacerbated by the pandemic's stressors. Both patients maintained psychiatric stability during employment, successfully managing occupational responsibilities without notable behavioral disturbances. However, the significant changes in their circumstances during the pandemic (including job loss and social isolation) contributed to their worsening mental health. These factors were considered crucial in their psychiatric evaluations and subsequent suicide attempts [13-16]. The assessment that both patients appeared "mentally stable during employment" was based on collateral information from family members and caregivers, who reported that the patients managed their work responsibilities without significant behavioral issues or psychiatric symptoms. There were no documented hospitalizations, acute episodes, or suicide attempts during these periods. However, we acknowledged that functional stability failed to imply full treatment adherence or remission. In Case 1, despite inconsistent treatment compliance, the patient remained functional at work until the COVID-19 pandemic and subsequent job loss, after which his condition deteriorated. In Case 2, the patient maintained a routine during the early pandemic phase, while his psychiatric symptoms intensified following social isolation driven by fear of infection.

In line with the present case, a report published in *The Lancet Psychiatry* by Wolfram Kawohl [22] highlighted how unemployment and the COVID-19 pandemic might increase suicide risk. Ji Hun Kang *et al.,* conducted an observational study and found a significant increase in suicide rates and suicide attempts at home during the COVID-19 pandemic compared to the pre-COVID era [23], which was consistent with our findings. This observation was corroborated by other studies [24]. In line with Ji Hun Kang's and Fernández-Martínez E findings, Guo B.C. *et al.,* also reported increased psychiatric manifestations and suicide among the COVID-19-infected pediatric populations [25]. Self-harm injuries in the United States during the pandemic increased significantly, underscoring the need for intervention policies [26]. In contrast, a study found no association between the pre-pandemic and pandemic periods regarding intentional injury/suicide-related visits [27].

The management of cut-throat injuries (CTIs) requires a multidisciplinary team approach for an optimal prognosis, particularly when patients present early at the hospital and receive prompt intervention [22]. A post-mortem autopsy study from Egypt reported the following incidences of anatomical structures involved in CTI cases [28]:

- Cervical vertebrae: 8.12% (n=6 cases)
- Larynx, trachea, carotid artery, and internal jugular vessels: 91.89% (n=68 cases)
- Sternocleidomastoid muscle: 56.76% (n=42 cases)
- Esophagus and thyroid cartilage: 18.92% (n=14 cases) and 10.81% (n=8 cases), respectively
- Skin, platysma, and external jugular vein: involved in all cases (n=74)

In both presented cases, the absence of vascular injury allowed adequate time for intervention despite delayed emergency department presentation. The primary clinical concern upon arrival was airway compromise, which was managed differently in each case. In one case, the airway was secured using an ET tube, while in the other, a tracheostomy tube was employed. Intraoperative management included the repair of the thyrohyoid membrane in one case and the tracheal reconstruction in the second. While performing distal tracheostomy remains a controversial practice, it was performed in these cases to ensure airway security. Similar to our cases, an epidemiological study found that cut-throat injuries predominantly affect young men aged 20-30 from low socioeconomic backgrounds [4]. The COVID-19 pandemic significantly increased these injuries, primarily due to suicide attempts driven by economic and psychological stressors, such as job loss, COVID-19-related fear, anxiety, and social isolation. However, timely management, including airway security, hemostasis, and proper post-operative care, can reduce morbidity and mortality. Postoperative management should include psychiatric and psychological treatment, as well as socio-familial support, in addition to airway restoration and laryngeal injury repair, as demonstrated in our case [29]. A case report from Nepal documented a rare instance of alcohol withdrawal manifesting as a cut-throat injury during the COVID-19 lockdown and highlighted the role of both psychiatric manifestation and withdrawal symptoms [30]. Consistent with our index cases, other reported cases demonstrated that even in severe, life-threatening self-inflicted cut-throat injuries, prompt intervention involving primary repair, tracheostomy, and feeding gastrostomy, when combined with strict adherence to basic surgical principles, could lead to successful recovery without significant complications, including preserved speech and swallowing function [31].

Evidence suggested that enhanced social awareness campaigns, accessible counseling services, educational programs, and improved employment opportunities might collectively reduce the incidence of suicidal cut-throat injuries [32]. Effective suicide prevention requires comprehensive, proactive measures, including intensified screening protocols

during pandemics or crises to identify at-risk individuals and systematic follow-up contact for those screening positive to ensure care connection. Besides, access to psychological interventions for those experiencing distress related to adverse situations should be prioritized. Additionally, mental health should be considered when implementing lockdown policies, and developing strategies to address predisposing factors contributing to suicide. To prevent suicide in the elderly population, the suicidal risk assessment and management among the elderly after the COVID-19 pandemic is essential [33]. Mental health support, including education, promotion of awareness, prevention, early intervention, and treatment, is urgently required to increase the reach of mental health support that could mitigate child and adolescent mental distress [34, 35]. In future pandemics, increased resourcing in some emergency department settings would help to address their expected increase in visits for acute mental distress among children and adolescents. Community-based gatekeeper training and strengthening suicide screening services in healthcare are key components. Enhancing mental health awareness through government initiatives and non-governmental organizations (NGOs) could further support prevention. Counseling for individuals presenting with suicide risk in emergency departments, combined with timely connections to behavioral health services, is critical for promoting social connectedness, providing economic support, and utilizing virtual platforms for mental health care to mitigate the mental health impact of the pandemic. Continuous monitoring and targeted interventions could help prevent further escalation of suicide risks. A recent study on the pediatric population suggested that virtual platforms could play a crucial role in early mental health assessment, and potentially prevent the onset and consequences of psychiatric manifestations [36].

Challenges in Managing CTIs

Managing CTIs is inherently challenging due to the critical nature of the injuries. Effective management begins with securing the airway in the ED and achieving hemostasis through hemostatic clips or pressure application. During surgery, a multidisciplinary team is required to address injuries to various structures successfully.

This case report presented two cases of suicidal cut-throat injuries during the COVID-19 pandemic; while there were several limitations to consider. First, the report was based on only two cases, which restricted the generalizability of the findings to a broader population. The rarity of suicidal cut-throat injuries in India, as reported by the NCRB, further confined the ability to draw broad conclusions. Additionally, the report failed to provide extensive post-discharge follow-up data, as both patients were lost to follow-up after discharge.

Moreover, the psychological assessment and mental health diagnoses were based on clinical observations and reports from the patients and their relatives, rather than a more comprehensive, structured psychological evaluation. This could introduce subjectivity in assessing the full scope of their mental health conditions. The report also did not explore the long-term outcomes of the provided psychiatric care, which restricted the understanding of the effectiveness of the interventions. Finally, although the association between unemployment, psychological distress, and suicide risk during the pandemic is underscored, further research with larger sample sizes is required to better understand these contributing factors in depth.

These cases underscored the increasing incidence of suicidal cut-throat injuries during the COVID-19 pandemic and highlighted the profound impact of the crisis on mental health. They emphasized the importance of a comprehensive, multidisciplinary approach that could address both the physical and psychological aspects of managing such critical injuries. To help prevent such tragic outcomes, this case report study underscored heightened awareness and greater attention to mental health, particularly among unemployed youth during the crisis.

Declaration

Ethics approval and consent to participate: The study was approved by the Institutional Ethics Committee of AIIMS Patna (Ref. No. AIIMS/Pat/2025/IEC/1457), dated May 13, 2025.

Consent for publication: The consent for publication was obtained and could be provided upon request.

Conflict of Interest: The authors had no conflicts to disclose.

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Authors' Contribution: AK: Concept and design of the work, drafting the work or revising it critically for important intellectual content; AK: Concept and design of the work, Drafting the work or revising it critically for important intellectual content; RK: Acquisition, analysis, or interpretation of data for the work, drafting the work or revising it critically for important intellectual content; AVK: Acquisition, analysis, or interpretation of data for the work; SK: Acquisition, analysis, or interpretation of data for the work; DK: Drafting the work or revising it critically for important intellectual content; MA: Drafting the work or revising it critically for important intellectual content. All authors approved the final version that will be published.

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