Case Report

Neck Injury Due to Soda Bottle Cap - A Trivial Trauma

Abhaya Betala[1]

Abstract

Aim: Presenting a case of neck injury in Zone II resulting from minor trauma to the neck. **Objectives:** 1)_Emphasize the significance of the vascular region in Zone II of the neck. 2)Provide treatment and follow-up for a patient with a neck injury caused by a soda bottle neck cap incident. **Case details:** A 40-year-old adult male arrived at the Emergency Department of Sri Lakshmi Narayanan Institute of Medical Sciences, Pondicherry on 01/07/2023 at 19:30 hours accompanied by his wife. The patient presented with a reported history of an accidental injury to the left side of his neck (falling within zone II) caused by a soda bottle explosion around 19:00 hours. The incident resulted from the pressure of gas within the soda bottle. Upon local examination, two lacerated injuries were identified on the left side of the neck. The first laceration, measuring 4×2cm× muscle deep, and the second, measuring 3×2cm×subcutaneous deep, were observed. The patient received treatment with an injection of TT 0.5 ml (IM), and haemostasis was achieved through external pressure applied to the neck. Subsequent steps involved dressing and suturing. A follow-up examination 14 days later indicated that the neck injury appeared to be healing. **Opinion:** The injury identified on the neck has been legally categorized as a Simple injury. **Discussion:** Zone I: Encompasses neck structures between the two clavicles and the cricoid cartilage; Zone II: Encompasses structures between the cricoid cartilage and the sub-mandibular region; Zone III: Encompasses structures between the sub-mandibular region and the base of the skull. **Conclusion:** The most frequently affected area is Zone II, which can be effectively addressed through surgical intervention. Therefore, any minor trauma to the neck should not be dismissed, and the application of pressure for bleeding control ensures excellent maintenance of haemostasis.

***Keywords**:* Platysma; Laceration; Hemostasis

Introduction:

Handling neck trauma can be intricate and occasionally daunting, given the presence of numerous vital structures concealed beneath the platysma and skin in the anatomical region. These structures can present a diagnostic and therapeutic challenge in the emergency department.[2,3,4]

In individuals experiencing blunt or penetrating trauma, neck injuries are relatively infrequent, yet their morbidity and mortality rates are significant. It wasn't until World War II that carotid artery repair became established as a treatment for such injuries.

Aim:

Presenting a case involving a neck injury in Zone II resulting from minor trauma to the neck.

[1]Associate Professor, Department of Forensic Medicine, and Toxicology, Sri Lakshmi Narayanan Institute of Medical Sciences (SLIMS.) Pondicherry.
Correspondence: Dr. Abhaya Betala
Email: apbetala@gmail.com
Contact: +91 9677963761

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Objectives:

- Emphasize the significance of the vascular region in Zone II of the neck.
- Provide treatment and follow-up for a patient with a neck injury caused by a soda bottle neck cap incident.

Case Details: A 40-year-old adult male from Koodapakkam arrived at the Emergency Department of Sri Lakshmi Narayana Institute of Medical Sciences, Pondicherry, on 01/07/2023 at 19:30 hours, accompanied by his brother and wife.

- Narrator : his brother
- Alleged history: of accidental injury over the left side of neck.
- This was due to the pressure of gas within soda bottle while working.
- The patient was triaged to yellow zone.

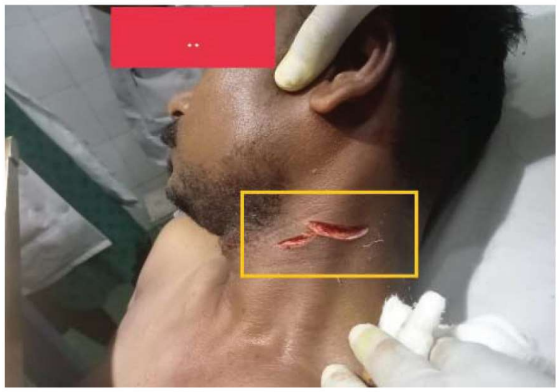

Figure1: Showing two lacerated wounds over left side of the neck

Vitals:

- HR: 104 beats per minute
- BP: 110/70 mm hg
- Respiratory rate: 18/minute
- SPO2: 99%, Temp: 98.5°F

Systemic examination:

- CVS: S1S2 +
- RS: BAE +
- PA: Soft, BS +
- CNS - GCS:15/15

Local examination:

Two lacerated injuries were noted over the left side of the neck.

1. Laceration injury measuring 4cm x 2cm x exposing platysma.
2. Laceration measuring 3cm x 2cm x subcutaneous tissue deep of the neck were found (Figure 1).

He was given inj. TT 0.5 ml (i.m) stat. Upon exposing the platysma, active bleeding was observed. No carotid bruit was detected. A bedside Doppler Ultrasound was performed, revealing no evidence of vascular injury.

Hemostasis was achieved by external pressure over the wound. Suturing and dressing were done (Figure 2). The follow up was done on the 7th and 14th day (Figure 3). Later neck injury got healed as shown.

Figure 2: showing suturing of the wound surgically

Figure 3: Showing healing on 14th day by scar formation.

Discussion:

The most frequently affected region is Zone II, easily accessible through surgical intervention. However, injuries in Zone I and Zone III pose greater challenges in terms of exposure and vascular control.

About 40% of penetrating injuries involve vascular structures, with carotid artery involvement leading to strokes in 15% and death in 20%. Penetrating neck injuries are complex due to the dense concentration of vital vascular, aero-digestive, and nervous system structures within this confined area.
This small anatomical space presents difficulties in physical examination, and surgical exposure of some structures becomes a technical challenge. While the initial aggressive operative management has transitioned to a more selective conservative approach, controversy persists. Surgical techniques for managing specific injuries are still debated and require resolution.
Some surgeons advocate for the exploration of all injuries penetrating the platysma, regardless of signs or symptoms, while others support a more conservative approach. In a prospective study involving 97 Gun Shot Wounds (GSWs) and 89 knife wounds to the neck, GSWs showed a higher incidence of clinical signs suggestive of vascular injuries compared to knife wounds (35% vs. 19%).
In the emergency department, initial assessment and management should follow Advanced Trauma Life Support (ATLS) protocols. Approximately 10% of patients with penetrating neck injuries may present with airway compromise. Fiber-optic naso-tracheal intubation is preferred in stable patients, while in cases of significant respiratory distress, oro-tracheal intubation under direct view or cricothyroidotomy is performed. Muscle relaxation should be avoided.
Traumatic neck injuries, constituting 5% to 10% of all traumatic injuries, carry a high morbidity and mortality rate due to potential damage to vital structures. Current treatment approaches vary based on initial management by zones, and there is ongoing consideration for a more uniform approach not solely based on specific anatomical areas, with conservative management for selected patients.

R.K. Jain et.al has seen 15 penetrating trauma to the neck which included 14 cases of stab injuries involving 11 males and 4 females.[7].

Conclusion:
Zone I: Encompasses neck structures between the two clavicles and the cricoid cartilage.
Zone II: Encompasses structures between the cricoid cartilage and the sub-mandibular region.
Zone III: Encompasses structures between the sub-mandibular region and the base of the skull.
The most frequently affected area is Zone II, amenable to surgical treatment. Therefore, any minor trauma to the neck should not be overlooked, and the application of pressure for bleeding control ensures excellent maintenance of haemostasis.

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