

**Cervical Tracheal Disruption, A Rare Condition - Case Report****S. Workneh, S. Kassa, B. Kotisso**

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**Correspondence to:** Dr Samuel Workneh, E-mail : Samuel\_dagim@yahoo.com***An unusual case of anterior cervical tracheal disruption following trivial blunt neck injury in a 21-years male is reported and literature reviewed.*****Introduction**

The incidence of tracheal injury in patients with major blunt trauma is 0.4 – 1.5 percent<sup>1</sup>. Tracheal injuries are also reported in association with intubation. There are also other causes of tracheal perforation. Intubation injuries are more common in females and children than males who have a relatively higher traumatic injury rates than other groups. Posterior or membranous tears are more common than anterior injuries. For this main reason, statistics for pure tears of the anterior trachea are unavailable. Death occurs in 30% of patients with tracheal tears, nearly half of the deaths occurring in the first hour after injury. Immediate diagnosis is made or possible in only one third of survivors for days, months, and occasionally years leading to complications<sup>1, 2, 3</sup>.

**Case report**

A twenty-one year old male patient presented, to the emergency surgical OPD with three days history of progressive swelling of the neck, face, and upper part of the trunk associated with breathing difficulty three days after sustaining an overlooked injury to the anterior neck while riding a bike. He did not have any external wound, bleeding or injury to other sites of the body initially but noticed a faint darkening of the skin over the anterior neck two days after injury. No hemoptysis or chest pain was reported. He referred himself to our hospital after he was told that his injury was not serious and could go home when he visited another hospital for his neck skin color change two days after initial injury.

On physical exam, patient was “swollen” over his neck, face and upper chest with respiratory distress. His blood pressure and measurements were in normal range; the pulse was 100 beats and respiration 28 per minute. Neither cyanosis nor pallor existed. There was linear transverse darkening of skin over the front of the neck. Palpation revealed crepitations over the face, neck and trunk. Examination of the chest revealed symmetrical and good air entry on both sides of the chest. The rest of the body systems were normal. His haematocrit was 38.8%, TLC=6,600/mm<sup>3</sup>. X-ray studies of the neck and chest revealed subcutaneous accumulation of air but no haemopneumothorax. Unfortunately tracheobronchoscopic exam was not possible in our hospital. After making sure that patient was in stable condition though critical, he was admitted to the ward with working diagnosis of ‘Major Air Leak from tracheobronchial tree’ most likely from blunt traumatic tear of the cervical trachea. Vein opened for maintenance fluid administration, low pressure O<sub>2</sub> via nasal prongs given intermittently and patient was put on fasting order overnight. The next morning the decision for neck exploration was capitalized during the consultant ward round.

After necessary preparation for possible emergency tracheostomy, in case of any air way compromise during transfer or intubation, patient was immediately transferred to operating theatre and intubation was uneventful. Up on exploration, there was gush of air from the subcutaneous space with clotted blood just below the thyroid cartilage. Clot removed and exploration continued. The anterior wall of the trachea was totally disrupted at the level of the cricoid and cricothyroid membrane with freely seated anterior segment of the cricoid cartilage and the endotracheal tube was visible. No active bleeding encountered. Careful debridement done was and the defect was closed with absorbable continuous stitch that did not involve the mucosa and without any need for buttressing donor tissue. Tracheostomy was established at usual site.

Extubation was uneventful. Subsequently, subcutaneous emphysema started to resolve on the first day and completely disappeared within a week after surgery. Tracheostomy tube was removed after ten days and the patient was discharged safe with follow-up appointment. Patient was seen at clinic for six follow-up visits over a period of five months with no voice change or any other sign of tracheal stenosis.

### Discussion

Tracheobronchial injuries, independent of their origin, are rare but life threatening. Twenty-one percent of patients reaching the hospital die within two hours with more proportion of fatality before arrival<sup>2, 3</sup>. The proportion of injuries is closely related to the mechanism of injury. The majority of tracheobronchial injuries are caused by blunt trauma. Other etiologies include inhalation of noxious or hot gases, aspiration of foreign bodies, iatrogenic injuries, penetrating trauma, and rarely spread from esophageal carcinoma.

Prompt diagnosis of airway injuries requires a high index of clinical suspicion. Delay in diagnosis is associated with high rate of complications like stenosis, fistula and even death<sup>1, 2, 4</sup>. Chest radiography is the standard initial screening examination for evaluation of most chest conditions, including possible tracheobronchial injury<sup>1</sup>. CT is preferred if tracheobronchial injury is suggested<sup>1</sup>. But definitive diagnosis is made by diagnostic tracheobronchoscopy or surgical exploration. The value of endoscopy is emphasized, in one study, by unnecessary thoracotomy done before tracheobronchoscopy<sup>1</sup>. Routine bronchoscopy, in these cases, is important to localize and assess extent of lesion before treatment besides monitoring progress of healing and complications. Bronchoscopy is also important to clear the airways from secretions in all stages of treatment. This was not the case in our situation though fortunately enough the patient did well without it. Immediate therapy depends on the patients' presentation and presence of associated injuries. To the minimum and if service available, emergency bronchoscopic confirmation of the diagnosis and localization is important if such an injury is clinically suggested<sup>3</sup>. The danger of worsening airway condition is avoided by bronchoscopy-aided intubation. This was imminent in our case because there was free segment of cricoids cartilage in the wound which could have been pushed into the airways during intubation and make disaster to the whole situation. This probably did not happen because there was no need for cricoids pressure as the patient has been kept fasting for hours before operation.

The treatment for tracheobronchial injuries is mainly surgical repair. But there is still a room for conservative non-operative management in carefully selected individuals. This is based on some important factors which are defined during patient evaluation. The factors include site, size, and etiology or nature of injury, age of patient, and presence of associated injuries<sup>1, 2, 3, 4, 5</sup>. Here, one should not forget that bronchoscopy is invaluable in decision making. Based on these factors conservative non-surgical treatment of a case like ours is associated with high chance of scarring and subsequent stenosis of the trachea and other complications.

### Conclusion

Though rare, injury to the tracheobronchial tree is life-threatening and diagnosis requires high index of suspicion. Treatment decision or choice is individualized but endoscopy and early decision is central to optimum therapy outcome.

### References

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