

Case Report

Toka-chaff cutter cervical trauma in COVID-19 lockdown: case report

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ABSTRACT

Fodder cutter (toka) of both manual and powered type is among the commonest tool being used by people for the preparation of fodder for their cattle. Agricultural traumatic injuries can lead to serious disability and mortality. Out of the agricultural machinery related accidents the maximum occur with the chaff-cutters i.e. toka machines. An intriguing cervical trauma due to entanglement in agricultural implement while chopping fodder in a young individual is being reported, as there is no reference in global literature. Slightest mistake can lead to serious injuries with disastrous outcome.

Keywords: Toka, laryngo-tracheal trauma, Reconstruction

INTRODUCTION

In rural India, individuals keep cattle at home which need regular feeds. The feed "toori" in vernacular is chopped into small consumable portions. Toka is the agricultural implement used widely to cut toori (Figure 1). Accidents happen when either the individual is drowsy or due to equipment malfunction. The former being due to loss of sleep, drug-bhukki intake or alcoholic intoxication. Outdated rusted components in the toka might break and cause physical trauma. In state of Punjab the loose untied tresses of the Sikh farmers even get entangled with sometimes serious scalp avulsions. Cervical laceration with laryngo-tracheal trauma during the peak of COVID-19 and National lockdown period is being reported.

Earlier in Sikh patients their long hair used to get stuck in area shown by red arrow in (Figure 1) and the scalp (head skin) used to be pulled out. In this patient his neck got caught in the mentioned area. Surprisingly he wasn't drunk. Laryngeal trauma due to toka injury may heal with fibrosis leading to deformity, and altered laryngeal

function.¹ Clinical presentation depends on the location, severity and mechanism of injury.

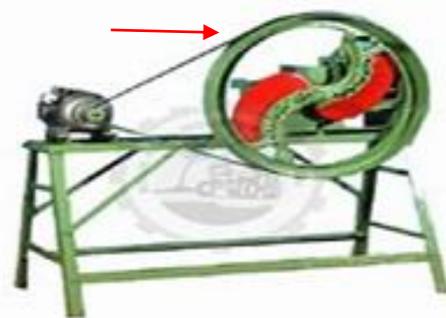


Figure 1: Toka machine.

Laryngeal trauma has an estimated incidence of 1 in 30,000 patients admitted to severe trauma centres with majority being closed type and caused by blunt neck trauma.¹

CASE REPORT

18 years old male was presented to the emergency after getting involved in a toka injury with difficulty in breathing and aphonia. The patient was breathing from a 3 cm long horizontal open neck wound below the level of the thyroid cartilage with open fracture of the cricoid cartilage (Figure 2). His vitals were stable with oxygen saturation being 96% on room air, BP; 110/70 mmHg, and pulse rate 76 per minute. Immediately the endotracheal intubation was undertaken through the open wound to secure the airway with patient being spontaneously breathing through the endotracheal tube. The borders of the wound were irregular. There were no signs of any extensive haemorrhage; there was considerable amount of ecchymosis of the strap muscles and the subcutaneous tissue.



Figure 2: Open wound below the level of thyroid cartilage.

Computed tomography revealed a laryngeal fracture involving cricoid cartilages and the first ring of trachea. (Figure 3). Given the extent of injury, a laryngeal reconstruction was performed. A low horizontal skin incision was given and a tracheotomy was carried out (Figure 4). The patient was given general anaesthesia via the tracheostomy and the wound was further assessed. The cricothyroid membrane injury had led to the separation of thyroid and cricoid cartilages (Figure 5) with a fracture of the anterior cricoid arch.



Figure 3: Computed tomography image.



Figure 4: Low tracheostomy with open wound.



Figure 5: Fracture of the anterior cricoid arch.

An airtight thyrocricoidal reconstruction was attempted using 3-0 vicryl, the thyroid cartilage which was sutured anteriorly and laterally to the cricoid cartilage (Figure 5) These sutures were loosely tied to re-align the airway. The wound was closed in 2 layers using vicryl 3-0 and ethylon 3-0 (Figure 6). Nasogastric tube was inserted for feeding.



Figure 6: Thyrocricoid reconstruction.

Postoperatively steroids and higher antibiotic cover was given. X-ray of soft tissue neck (Figure 7) was done post operatively which showed airway patency and flexible fiberoptic laryngoscopy (Figure 8) was done which showed full vocal cord mobility on both sides.

Patient was decannulated on tenth day and X-ray of soft tissue neck was repeated which showed airway patency (Figure 9). Nasogastric feeding was continued for 4 weeks.



Figure 7: Post-operative sutured wound.



Figure 8: X-ray of soft tissue neck post-operative showing tracheostomy tube and Ryle tube in situ.



Figure 9: Flexible fibroptic showing mobile bilateral vocal cords.



Figure 10: Post decannulation X-ray soft tissue neck with Ryle tube in situ.



Figure 11: Post-operative picture of patient with Ryle tube in situ post decannulation.

DISCUSSION

Agriculture related accidents are mainly due to farm machinery like tractors, harvesters, thresher and chaff cutter. Chopping fodder with (toka) fodder-cutting machine is a common implement utilised in the households of rural Punjab. Toka injuries are common in North Western India particularly in State of Punjab leading to morbidity, disability and often mortality. Chaff cutter is the leading cause of the accident which contributed 68% of total machinery accidents in Punjab during 2007-2012.² The spectrum of injuries varies according to the severity and part of the machine involved with rotating part being the most dangerous as it can cause penetrating laryngeal trauma. Accidents are more common during the harvesting season due to work overload and stress, and most of them are non-fatal and lead to amputation of extremities. 40-70% of the chaff cutter injuries result in trauma to upper and lower extremities.³

Dyspnoea, paralysis of the vocal cord, airway obstruction due to vocal cord paralysis, loss of normal anatomic landmarks, tenderness in the neck, crepitus, and soft tissue emphysema, dysphonia, aphonia, stridor, hoarseness, very rough voice, neck pain, hemoptysis, dysphagia and progressive respiratory distress are usually the presenting symptoms in cases of cervical toka injury.⁴ In our case the patient presented with open wound with normal breathing and aphonia after toka injury. Maintaining the airway is the primary aim in management of laryngeal trauma. Both endotracheal intubation and tracheostomy have been recommended by Bent et al and Butler et al in their studies.^{5,6} The later conversion to tracheostomy after endotracheal intubation is also recommended within 24 hours similar to our case low tracheostomy was performed after initial endotracheal intubation done through the open wound.⁷ Later surgical repair depending on the extent of the injury was undertaken to improve the long-term voice and swallowing outcomes.

The timing of such repair is controversial but evidence suggests that early treatment within 48 hours results in a

higher recovery rate than that of the delayed treatment group.⁸

Butler et al reported that a delayed treatment group after acute laryngeal trauma had about 28% good voice outcome and about 73% had good airway function, whereas early treatment group after acute laryngeal injury had about 78% good voice outcome and about 93% good airway function.⁶

CONCLUSION

Laryngotracheal trauma due to foddercutter (toka) can prove to be disastrous leading to airway compromise. Timely intervention in toka injury is lifesaving.

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