

Conservative Management of a Traumatic Tracheal Tear: A Case Report

Ashutosh Kumar^{1*}, Rahul Kumar²

^{1*}Specialist (Surgeon), Sadar Hospital, Ramgarh, Jharkhand, India.

²Senior Resident, Department of Surgery, University College of Medical Sciences and GTB Hospital, Delhi, India.

ABSTRACT

We describe here a case of traumatic anterior tracheal wall tear managed conservatively with a successful outcome. Conservative treatment has a high likelihood of success in patients who meet strict selection criteria and are closely monitored in ICUs or elsewhere. This case highlights the role of conservative management in treating such crucial cases in the presence of limited resources, especially in a government set up in India.

Keywords: Tracheal Injury, Conservative Management, Non-Iatrogenic Traumatic.

INTRODUCTION

Iatrogenic tracheal injuries were widely published as case reports in the later part of last century.¹ The incidence of traumatic trachea-bronchial injury has been rising in recent decades largely because of increase in traffic accidents and growing use of general anaesthesia with oro-tracheal intubations in older patients.² Most non-iatrogenic traumatic injuries are result of high energy blunt trauma such as those caused by traffic accidents and falls.³

Despite improvement in emergency transportation services, more than 30% of patients with a traumatic trachea-bronchial injury die before reaching the hospital.⁴ The overall incidence of these type of injuries is approximately 1-2% of high energy accidents^{5,6} and with only a few cases occurring each year, opportunities to train healthcare professionals to manage them are scarce.

While some favour an early surgical repair⁷, this case highlights the role of conservative management in treating a case of traumatic tracheal injury.

CASE REPORT

A patient, aged 50 yrs old male, R/o Sahibabad, Uttar Pradesh presented in surgical casualty of Gurutegh Bahadur Hospital at 1:30 pm on 5/10/16 with alleged history of Road traffic accident at 1 pm on the same day. The patient was hit by a motorbike while he was crossing the road. He presented with complaints of Pain in right side of chest. On examination, patient was conscious and oriented with a pulse of 101/min and BP of 148/94 mm Hg. Airway was intact with no cervical or spine tenderness. On Chest

*Correspondence to:

Dr. Ashutosh Kumar,
Specialist (Surgeon),
Sadar Hospital, Ramgarh, Jharkhand, India.

Article History:

Received: 03-12-2018, Revised: 02-01-2019, Accepted: 29-01-2019

Access this article online

Website: www.ijmrp.com	Quick Response code 
DOI: 10.21276/ijmrp.2019.5.1.025	

evaluation, patient had bony crepitus on right side of chest with bilateral subcutaneous emphysema. However, SpO₂ was 100% on room air. Patient also did not have any dyspnoea. A flail segment of chest was visible on right side of chest at around 5th intercostal space. Patient per abdomen finding was soft, non-tender with no guarding or rigidity and bowel sounds present. Patient gave a history of loss of consciousness with no complain of vomiting, seizures or ENT bleed

In view of flail segment and subcutaneous emphysema, a right sided intercostals drain was inserted. Chest Xray showed multiple rib fracture from 2nd to 7th rib right side. Surgical emphysema of bilateral chest wall and pneumomediastinitis was also present. This prompted us to go for CECT chest. The patient's subcutaneous emphysema gradually increased to involve upper neck, bilateral chest and bilateral arm. This developed during the first 24 hrs. of stay in the hospital.

The patient was given conservative management in form of analgesics, antibiotics and antacids. Patient was also not allowed orally initially for 2 days and kept on i.v. fluids. The Glasgow coma scale of the patient was 15/15. NCCT head was done in view of loss of consciousness, which showed non-hemorrhagic contusion of size 2.3×1.3 cm in left frontal brain area with fracture left ramus of mandible and hairline fracture of left zygomatic process. Ultrasound of abdomen was normal.

CECT chest showed multiple rib fracture with pleural tear at first intercostal space with bilateral pneumothorax. There was a 3mm rent in anterior trachea at the carina just above the bifurcation of

the two bronchi. Another rent of around 4mm was seen in right bronchus posteriorly. The patient was managed conservatively and from 3rd day of admission patient's subcutaneous emphysema started decreasing. Patient was also asked to do incentive spirometry regularly.

Gradually subcutaneous emphysema and pain completely subsided by 12th day of hospital stay. Chest tube was removed on the 13th day and the patient was discharged the very next day. Patient was reviewed after 1 week and patient was doing fine. Patient had no respiratory difficulty and had bilateral equal air entry with no added breath sounds.

DISCUSSION

Traumatic tracheobronchial injuries are uncommon and are associated with other injuries which is why diagnosis is often delayed.⁸

It should be noted that trachea-bronchial injuries caused by intubation or interventions involving the airways are probably the most common cause of traumatic tracheal injuries, especially for intubations in women and those done with double lumen intubators.⁹

It is well known that early diagnosis of injury is essential to determine the appropriate medical or surgical approach and thereby improve the outcome of any eventual intervention.^{10,11}

Conservative treatment have been described as particularly appropriate for post-intubation iatrogenic injuries.¹² However, in few studies conservative treatment is also appropriate for non-iatrogenic traumatic trachea-bronchial injuries.¹³

Although some groups are strongly opposed to conservative treatment, few studies results have been very good when strict criterias are followed for conservative management and patient is closely monitored in the ICU or elsewhere.^{11,14}

The strict criterias from different studies³ include the following: Open tracheal wound, unstable vital signs, associated oesophageal lesions, mediastinal emphysema, progression of subcutaneous emphysema, mediastinitis, ARDS and sepsis.

CONCLUSION

In conclusion, the choice of treatment should be guided by strict criteria. Conservative treatment has high likelihood of success in patients who meet strict selection criteria.³

A large lesion size, early diagnosis or certain locations do not contraindicate conservative management. According to different case series published till date, conservative treatment in patients with a lesion <4 cm does not present risk, given the low priority of complications and maximum possibility of meeting the strict selection criteria for using this approach.

REFERENCES

1. K. S. Rachakonda, E. G. Simmons. Conservative management of posterior tracheal tear: A case report; 2000; Critical care and resuscitation, 2: 191-94.
2. Kaloud H, Smolle-Juettner FM, Prause G, List WF. Iatrogenic ruptures of the tracheo-bronchial tree. Chest. 1997; 112; 774-8.

3. A. Gomez-Caro Andres, P. Ausin Herrero, F. J. Moradiellos Diez, V. Diaz-Hellin, E. Larru Cabrero, J. A. Perez Anton, and J. L. Martin de Nicolas. Medical and surgical management of Noniatrogenic Traumatic Tracheobronchial injuries; Arch Bronconeumol. 2005; 41 (5): 249-54.
4. Burke JF. Early diagnosis of traumatic rupture of the bronchus; JAMA; 1962: 181: 682-6.
5. Huh J, Milliken JC, Chen JC. Management of trachea-bronchial injuries following blunt and penetrating trauma; Am Surg. 1997; 63: 896-9.
6. Kaptanoglu M, Dogan K, Nadir A, Gonlugur U, Akkurt I, Seyfikli Z, et al. trachea-bronchial rupture: A considerable risk for young teenagers. Int. J Pediatr Otorhinolaryngol; 2002; 62; 123-28.
7. Massard G, Rouge C, Dabbagh A et al. Tracheo-bronchial lacerations after intubations and tracheostomy. Ann Thorac Surg; 1996; 61; 1483-87.
8. Angood PB, Attia EL, Brown RA, Mulder DS. Extrinsic civilians trauma to the larynx and cervical trauma – Important predictors of long term morbidity. J Trauma; 1986; 26; 869-73.
9. Borasio P, Ardisson F, Chiampo G. Post-intubation tracheal rupture; A report on 10 cases. Eur J Cardiothorac Surg; 1997; 12; 98-100.
10. Cassada DC, Munyikwa MP, Moniz MP, Dieter RA Jr, Schuchmann GF, Enderson BL. Acute injuries of the trachea and major bronchi: Importance of early diagnosis. Ann Thorac Surg; 2000; 69;1563 – 67.
11. Mussi A, Ambrogi MC, Ribichini A, Lucchi M, Menoni F, Angeletti CA. Acute major airway injuries: Clinical features and management. Eur J Cardiothorac Surg ; 2001; 20; 46-51.
12. Carboginani P, Bobbio A, Cattelani L, Internullo E, Caporale D, Rusca M. management of postintubation membranous tracheal rupture. Ann Thorac Surg; 2004; 77; 406-09.
13. Ross HM, Grant FJ, Wilson RS, Bort ME. Non-operative management of tracheal laceration during endotracheal intubation. Ann Thorac Surg; 1997;63;240-42.
14. Hoffman HS, Rettig G, Radke J, Neef H, Silber RE. Iatrogenic rupture of the trachea-bronchial tree. Eur J Cardiothorac Surg; 2002; 21; 649-52.

Source of Support: Nil. **Conflict of Interest:** None Declared.

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Cite this article as: Ashutosh Kumar, Rahul Kumar. Conservative Management of a Traumatic Tracheal Tear: A Case Report. Int J Med Res Prof. 2019 Jan; 5(1):121-22.
DOI:10.21276/ijmrp.2019.5.1.025