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# A load of hot air: A case of traumatic paediatric airway injury

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## Background:

The presentation of traumatic airway injury in children is rare, and particularly in the setting of blunt trauma to the neck.
This case outlines the case of a pediatric patient attending the ED following blunt trauma to the neck and it's subsequent management


## Case report:

A 3 year old female was brought into a Paediatric emergency department 20 minutes after sustaining blunt trauma to the front of the neck. At home she had run into the corner of a coffee table, tripping as she did so, and receiving a blow to the anterior carina. She presented with facial swelling, neck swelling and respiratory difficulty

It was apparent after a short period of time that she had a large quantity of subcutaneous emphysema in her soft tissues.

Chest xray showed a pneumomediastinum but no pneumothorax.

ENT and anaesthetics were called and the decision was taken to take this patient to theatre for gaseous induction and she was then intubated.

She was transferred to another hospital in Dublin to have her care completed in a PICU setting. CT demonstrated a tear in her posterior trachea. Ultimately she was treated conservatively and extubated a number of days later, the defect in her trachea having healed without surgical intervention.


**Images from left**:
**AP chest xray**: shows pneumomediastinum
**Lateral neck xray**: showing large volume subcutaneous emphysema
**Transverse slice of CT** showing large volume of air in the soft issues of the neck
**Transverse slice of CT** showing subcutaneous emphysema in the soft tissues of the R chest wall
**Coronal slice of CT Thorax** showing the extend of her pneumomediastinum with compression of the Left lung secondary to this

## Discussion:

Blunt trauma to the airway in the paediatric population is an uncommon presentation as compared to the adult population(1). This can be accounted for due to both anatomical differences as well as less exposure to interpersonal conflict or high velocity trauma(2) The mechanism for these injuries varies across age ranges with younger children typically injuring the laryngotracheal area in falls in the home, striking furniture and older children being involved in road traffic collisions, altercations and sports injuries(3).
These injuries in children need to be promptly recognised and the symptoms may include bruising, dyspnoea, stridor, dysphonia and subcutaneous emphysema. The management of laryngotracheal injuries requires early involvement of both the anaesthetic team and the ENT team. A review by Gold et al advocates for early transfer to theatre with an ET tube being placed under gaseous induction and with the use of a rigid bronchoscope in order to obtain the best view.(1)

## Conclusion:

Traumatic airway injury in the paediatric population is rare. Management of these presentations require prompt and accurate recognition, early transfer to theatre for gaseous induction and endotracheal intubation.

## References:

[1] S. M. Gold, M. E. Gerber, S. R. Shott, and C. M. Meyer, "Blunt laryngeal trauma in children," Archives of Otolaryngology-Head &Neck Surgery, vol. 123, pp. 83–87, 1997.
[2] R. M. Merritt, J. P. Bent, and E. S. Porubsky, "Acute laryngeal trauma in the paediatric patient," Annals of Otology, Rhinology and Laryngology, vol. 107, pp. 104–106, 1998.
[3] J. C.Oosthuizen, P. Burns, and J. D. Russell, "Endoscopic management of posttraumatic supraglottic stenosis in the pediatric population," The American Journal of Otolaryngology, vol. 32, no. 5, pp. 426–429, 2011