# LESSONS LEARNT FROM MANAGING PENETRATING NECK TRAUMA IN CHILDREN

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(Accepted for presentation at BAPS International Congress 2017, London)

**Aim:** To report our experience of penetrating neck trauma and share lessons learnt

**Method**: Review of prospectively maintained database of trauma activations between January 2010 and December 2016 with reference to penetrating neck trauma in patients <16 years. Data collected included patient demographics, type/number of injuries, injury severity score (ISS), investigations, management, number of specialities involved, outcome, intensive care utilisation, length of stay and morbidity/mortality.

**Results:**

Over 7 years there were 1715 paediatric trauma activations of which 249 (15%) where penetrating in nature (figure 1). 8 children had penetrating neck trauma (0.5%). All patients were male. There were no deaths.

**Conclusion:**

Penetrating neck trauma in children is a rare, potentially life threatening injury that occurs in isolation or in association with other injuries. Receiving units must have the experience and skill to deal with all eventualities. Patients often required stabilisation/treatment pre-hospital. There is huge variation in the severity of injury often unrelated to the size of the wound or the presenting symptoms. Patients with marked surgical emphysema, expanding haematoma/significant active bleeding or signs of evolving respiratory compromise require urgent expert surgery. Equally, others can be managed with simple local wound treatments or basic interventions (such as chest drains) in the emergency department.

**Lessons Learnt**

1. Centres receiving children with penetrating neck wounds should have the ability to undertake the full range of immediate, life saving surgery

2. Surgical exploration is, however, not mandatory.

3. Selective exploration (+/-CT angiogram) dependant on clinical/radiological findings is appropriate

4. Patients should be admitted for a period of observation to ensure ongoing stability

5. Patients often require input from multiple surgical specialities (eg Trauma, Vascular, ENT, Maxillo-facial and Paediatric surgery). If not present at the trauma call these should be involved in a timely fashion

Figure 1. Summary of traumatic penetrating neck injures in children (2010-2016)

| Age (yrs) | Injuries | ISS | XR/CT | Post ED | Treatment | PICU (days) | LOS (days) |
|---|---|---|---|---|---|---|---|
| 14 | Neck only | 16 | CTA | PICU | Repair pharyngeal injury | 2 | 9 |
| 15 | Multiple neck/thorax | 4 | CXR | PICU | ICD | 1 | 4 |
| 15 | Neck only | 26 | CTA | PICU | ICD | 1 | 7 |
| 15 | Multiple neck/abdo | 11 | CXR | Theatre | Laparotomy + exploration | 1 | 5 |
| 15 | Multiple neck/abdo/limb | 11 | CXR | Theatre | Laparotomy + exploration | 3 | 6 |
| 13 | Neck only | 4 | CTA | Ward | GA exploration x2 | 0 | 4 |
| 11 | Neck only | 1 | CXR | Ward | LA exploration | 0 | 1 |
| 15 | Multiple neck thorax/abdo/limb | 2 | CXR | Ward | LA exploration | 0 | 2 |

CXR = chest X ray. CTA = CT angiogram. PICU = Paediatric Intensive Care Unit. ICD = intercostal drain. GA = general anaesthetic. LA = local anaesthetic