Blunt Neck Trauma at a Level I Trauma Centre: A Six-Year Experience at the Queen Elizabeth Hospital Birmingham

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Introduction

Blunt neck trauma describes an injury to the anterior neck that does not breach platysma. Although comprising less than 1% of blunt external trauma admissions⁽¹⁾, mortality in blunt neck trauma can be as high as 40%⁽²⁾. Morbidity can also be significant, affecting phonation, deglutition, and ventilation. The majority of blunt neck trauma is secondary to road traffic accidents⁽³⁾. Other mechanisms include assault, falls, hanging and strangulation, and sporting injuries⁽¹⁾.

Aims

- To report the experience of blunt neck trauma at a UK Level I trauma centre.
- To assess the degree of correlation between ‘hot’ imaging reports and consultant imaging reports.
- To assess the degree of correlation between imaging reports and operative findings.

Methods

Study design: Retrospective case note review

Inclusion criteria:

- Blunt trauma to the anterior neck

Exclusion criteria:

- Neck trauma breaching platysma
- Isolated cervical spine trauma

Potential cases between 01st January 2011 and 31st December 2017 identified by medical coding

2386 patient notes retrospectively assessed for inclusion

2369 cases excluded

17 blunt neck trauma cases included

155 data variables collected per case using Clinical Portal (A&E notes, imaging reports, operative reports, discharge letters, follow-up appointments)

Data analysis using IBM SPSS Statistics

Results

Patient Demographics and Mechanism of Injury:

12 (70.6%) patients were male and 5 (29.4%) were female. The median age was 40.6 years (range, 21.5 – 70.3 years).

Mechanism of Injury	Frequency	Percentage of Injuries (%)
Road Traffic Accident	7	41.2
Fall from Bicycle	3	17.6
Hanging	3	17.6
Blunt Assault	2	11.8
Lacrosse Ball	1	5.9
Strangulation	1	5.9

Physical Examination:

Most patients presented neurologically intact (see chart below). Polytrauma was common, shown by the presence of head injuries in 52.9% of patients.

Imaging:

CT head was performed in 11 (64.7%) patients whilst MDCTA was performed in 9 (52.9%). Whole-body trauma CTs, often used following road traffic accidents, were performed in 7 (41.2%) patients.

The ‘hot’ reports and consultant reports matched for all head and neck imaging procedures apart from one (11.1%) MDCTA neck, and one (9.1%) CT head.

Imaging reports did not match operative findings in 2 out of 5 (40%) patients where imaging failed to identify a submandibular gland injury and brachial plexus avulsion.

Definitive Management:

6 patients underwent surgical exploration but only 4 of these were positive for internal injuries (see chart below).

Morbidity and Mortality:

Survival was 100% and no patient required tracheostomy on discharge or had a missed injury.

Conclusion

Blunt neck trauma is a rare presentation affecting predominantly male patients following road traffic accidents. Polytrauma is common and patients can present with neurological impairments following associated head injuries. Inexperience in reporting trauma scans does not influence their accuracy. However, when compared to operative findings, imaging studies missed significant glandular and nervous injuries. An evidence-based management guideline would help reduce negative explorations by identifying specific indications for exploration.