Gun shot injuries in children: a ten year experience

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Weapon

- four .22
- one .270
- one 12 bore shot gun
- one blunt recoil (non-penetrating)
- 23 x air rifles
<table>
<thead>
<tr>
<th>Place of Injury</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>25</td>
<td>83</td>
</tr>
<tr>
<td>Bush</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>School</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Sea</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>
Transfer method
Injuries

- 66% head and/or neck
- Most serious injuries with large calibre ≥ .22
- Majority injuries superficial
- 5 cases projectile in-situ
GCS at hosp
INTRODUCTION

- NZ has reputation for outdoors lifestyle
- NZ does not have liberal gun laws
- Children are at risk and suffer gun shot injuries
Admitting service

All paediatric services:

- Paediatric surgery
- Paediatric orthopaedics
- Paediatric cardiology
- Ophthalmology
- Neurosurgery
- Cardio-thoracic surgery
- Paediatric ENT surgery
Definitive treatment
Operations

- 3 required >1 x OR procedure
- 5 treated conservatively
- Majority required subcutaneous pellet retrieval only
Operations

- Posterior fossa decompression
- RCA ligation
- Laparotomy, splenectomy, L hemicolecction, repair stomach lac, stoma formation
- Removal of pellet from heart & close VSD
- Debridement of compound skull injury
- Craniotomy, evacuation of haematoma
- Partial thymectomy & removal of pellet via sternotomy
Delay to OR

- No delay: 14
- One night (o/nite): 6
- Two days: 1
- More than three days: 3
Outcome

- 8 required PICU
- Hospital stay 1 – 52 days
- One fatality
Follow-up

Median follow-up 3.5 months
Morbidity

13 pts (43%) have long term/disabling morbidity

- L CN VII LMN palsy; NG feeds; L hearing loss; L eye lid palsy
- R CN IV palsy; epilepsy
- persistent vitreous haemorrhage
- R hemiparesis, dysphasia
- L brachial plexus injury
AIM

- Auckland experience
- Injuries
- Outcome
Mortality

- 13 year-old
- Hunting
- .22 in head
- Cerebral injury
## Airgun versus Others

<table>
<thead>
<tr>
<th></th>
<th>Airgun</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>23</td>
<td>7</td>
</tr>
<tr>
<td>Head injury</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>Operation</td>
<td>19</td>
<td>6</td>
</tr>
<tr>
<td>LOS total</td>
<td>92</td>
<td>102</td>
</tr>
<tr>
<td>PICU</td>
<td>4</td>
<td>4</td>
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<tr>
<td>Morbidity</td>
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<td>4</td>
</tr>
<tr>
<td>Mortality</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>
Summary

- Most gunshot injuries from air rifles
- Incidence increasing
- Significant morbidity
Conclusion
Public awareness campaign
METHODS

- Retrospective review
- 10yr period 1996-2005
- Starship Children’s Hospital
- Catchment ~1.5-2 million
RESULTS

N = 30 (1 child every 4 months)
Age

Median 8.5 years
Gender

24 male (80%)
Ethnicity

67% Caucasian
27% Maori

Pacific Islander
Other
Hospital of first presentation

- SCH: 20
- Regional: 10