Patterns of Treatment of Accidental Genital Trauma in Girls

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Disclosures

Julie Strickland MD MPH:
Merck, Nexplanon Trainer

Introduction

Pediatric genital injuries: 0.2 to 8% of reported childhood trauma.¹

Accidental genital trauma (AGT)is most commonly due to straddle injuries and isolated to the labia.²

Bleeding is the most common presenting symptom after blunt trauma.³

¹ Shnorhavorian M. Urology 2012;80:417-422.
Okur H. Br J Urol 1996; 78:446-449.
Introduction

Missed diagnosis of injury to urogenital tract can result in delayed repair and subsequent adverse sequelae.¹

Key question in management of AGT is whether all patients should undergo EUA in OR rather than evaluation and possibly treatment in ED.

Background

Discordant exams in ED vs. OR?

<table>
<thead>
<tr>
<th></th>
<th>Lynch 1995</th>
<th>Spitzer 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>22</td>
<td>105</td>
</tr>
<tr>
<td>Mechanism of Injury</td>
<td>Straddle 86%</td>
<td>Straddle 82%</td>
</tr>
<tr>
<td>Taken to OR</td>
<td>100%*</td>
<td>19%</td>
</tr>
<tr>
<td>ED conscious sedation</td>
<td>0%</td>
<td>6%</td>
</tr>
<tr>
<td>Required Surgical Repair</td>
<td>95%</td>
<td>21%</td>
</tr>
</tbody>
</table>

Objective

What are the characteristics of girls with AGT who can be managed in the emergency department (ED) as compared to those who require treatment in the operating room (OR)?
Methods

IRB approved retrospective cohort study. Medical database query from January 2000 to July 2014. Emergency Department for genital trauma (ICD-9 codes 878.4-878.9).

Methods

Inclusion criteria:
Female patients ages 0 to 18 years.

Exclusion criteria:
Obstetrical related injuries.

Statistical Analysis

SPSS version 22.0 (SPSS Inc., Chicago, IL). Statistical significance p < .05.
Bivariate analyses: independent t-test or Chi-square/Fisher’s exact tests, as appropriate.
Multivariable associations: binary logistic regression analysis.
Results

478 reviewed
359 selected

- 64 (18%) surgical management
- 295 (66%) expectant management
- 40 (6%) sedation in ED
- 24 (37%) general anesthesia in OR

Results

Day 229 (64%)
Night 130 (36%)

Bleeding/Pain 321 (95%)
No Void 27 (8%)
Unknown 11 (3%)

Complaint

Results

Mechanism of Injury

- Penetrating 39 (11%)
- Non-straddle 58 (16%)
- Straddle 258 (73%)

Type of Injury

- Laceration 308 (88%)
- Abrasion/Contusion 33 (7%)
- Hematoma 16 (5%)

- Unknown 11 (3%)

- Bleeding/Pain 321 (95%)
- No Void 27 (8%)
- Unknown 11 (3%)
## Results

<table>
<thead>
<tr>
<th>Predictor</th>
<th>ED n=327</th>
<th>OR n=26</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td>0.001</td>
</tr>
<tr>
<td>Transfer from another institution. Yes</td>
<td>101 (31%)</td>
<td>20 (77%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td></td>
<td>226 (69%)</td>
<td>6 (23%)</td>
<td></td>
</tr>
<tr>
<td>Mechanism of injury</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-penetrating</td>
<td>299 (94%)</td>
<td>12 (46%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Penetrating</td>
<td>25 (8%)</td>
<td>14 (54%)</td>
<td></td>
</tr>
<tr>
<td>Location of Injury</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labia</td>
<td>216 (66%)</td>
<td>3 (12%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Post Fourchette and Perineum</td>
<td>72 (22%)</td>
<td>9 (35%)</td>
<td></td>
</tr>
<tr>
<td>Uterus/Anus</td>
<td>15 (5%)</td>
<td>2 (8%)</td>
<td></td>
</tr>
<tr>
<td>Vagina</td>
<td>23 (7%)</td>
<td>12 (46%)</td>
<td></td>
</tr>
<tr>
<td>Size of Injury</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 to 2.99 cm</td>
<td>223 (93%)</td>
<td>7 (37%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>&gt; 3 cm</td>
<td>17 (7%)</td>
<td>12 (83%)</td>
<td></td>
</tr>
</tbody>
</table>

### Logistic Model Results

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Odds Ratio</th>
<th>95% CI</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of lesion</td>
<td>5.5</td>
<td>2.8, 10.9</td>
<td>.0001</td>
</tr>
<tr>
<td>Transfer from another facility</td>
<td>4.1</td>
<td>1.3, 13.3</td>
<td>.02</td>
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<tr>
<td>Night Presentation</td>
<td>3.2</td>
<td>0.97, 10.8</td>
<td>.06</td>
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</table>
Study Limitations

Retrospective.
Single center.
Limited by errors associated with misclassifications of variables and missing data.

Conclusion

<table>
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<td>18%</td>
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</tbody>
</table>

Conclusion

AGT was most frequently caused by straddle injury, isolated to labia, and can be managed expectantly.
Conclusion

Penetrating injuries should be considered as indications for management in OR.

Conclusion

With adequate sedation, the majority of girls can undergo a thorough examination and repair of AGT in the ED.

References


Acknowledgments

My most sincere thanks to Dr. Julie Strickland, Jeanette Higgins, and Dr. Karen B. Williams.

Questions

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