Filling the Void: A Low Cost, High-Yield Method to Addressing Incidental Findings in Trauma Patients

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Background

- Due to fear of a missed injury, the tendency to “Pan CT” has dramatically increased.
- This leads to a rise in incidental findings, or findings on imaging not related to the original indication of the study.
- There are few studies assessing incidentals outside of urban populations and level one trauma centers.
- There are even fewer studies attempting to address how to handle reporting incidental findings to patients, with some studies having rates as low as 10%.

In this study we:

- Report the incidence of incidental findings in a suburban trauma center treating primarily blunt and elderly trauma.
- Propose simple solutions to increase the rate of disclosure to patients.

Results

Table 1 – Patients, CTs, and Incidental Findings in the Pre-Intervention Arm Stratified by Age

<table>
<thead>
<tr>
<th># of Patients</th>
<th># of CTs</th>
<th># of Incidental Findings</th>
<th>Mean # of Incidents per Patient</th>
<th># of Patients w/ Significant Incidental</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;65</td>
<td>292 (43%)</td>
<td>1104</td>
<td>104 (35%)</td>
<td>182</td>
</tr>
<tr>
<td>&gt;65</td>
<td>382 (57%)</td>
<td>1429</td>
<td>96 (24%)</td>
<td>190</td>
</tr>
</tbody>
</table>

Table 2 – Categorized Significant Incidental Findings

<table>
<thead>
<tr>
<th>Type of SIF</th>
<th># of Incidentals Pre</th>
<th>% of Total Incidental Pre</th>
<th># of Incidentals Post</th>
<th>% of Total Incidents Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesions, Lymph Nodes</td>
<td>90</td>
<td>23%</td>
<td>72</td>
<td>22%</td>
</tr>
<tr>
<td>Masses</td>
<td>53</td>
<td>13%</td>
<td>52</td>
<td>16%</td>
</tr>
<tr>
<td>Thyroid Nodules, Thyrocytoma</td>
<td>39</td>
<td>10%</td>
<td>16</td>
<td>5%</td>
</tr>
<tr>
<td>Bladder Thickening, Mass, Hydronephrosis</td>
<td>31</td>
<td>8%</td>
<td>18</td>
<td>5%</td>
</tr>
<tr>
<td>Lesions, Lymph Nodes</td>
<td>25</td>
<td>6%</td>
<td>25</td>
<td>8%</td>
</tr>
<tr>
<td>Masses</td>
<td>14</td>
<td>5%</td>
<td>13</td>
<td>4%</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
<td>2%</td>
<td>8</td>
<td>2%</td>
</tr>
<tr>
<td>New Malignancies</td>
<td>54</td>
<td>14%</td>
<td>49</td>
<td>15%</td>
</tr>
</tbody>
</table>

Table 4 – Follow Up Imaging, Specialists, Procedures for SIFs

<table>
<thead>
<tr>
<th>Required F/U Modality</th>
<th># of Patients</th>
<th>Example</th>
<th>Specialist for F/U</th>
<th># of Patients</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT Thorax</td>
<td>42</td>
<td>Pulmonary Nodule</td>
<td>CT Surgery</td>
<td>10</td>
<td>Thoracic Aneurysm</td>
</tr>
<tr>
<td>CT Abdomen</td>
<td>8</td>
<td>Adrenal Nodule</td>
<td>ENT</td>
<td>1</td>
<td>Thyroid Gland Cyst</td>
</tr>
<tr>
<td>US Thyroid</td>
<td>32</td>
<td>Thyroid Nodule</td>
<td>Gastroenterology</td>
<td>11</td>
<td>Bilary Dilatation</td>
</tr>
<tr>
<td>US Pelvis</td>
<td>16</td>
<td>Adrenal Cyst</td>
<td>Gen Surgery</td>
<td>2</td>
<td>Incarcerated Hernia</td>
</tr>
<tr>
<td>US Retropert</td>
<td>12</td>
<td>Renal Mass</td>
<td>Nephrology</td>
<td>4</td>
<td>Adrenal Mass</td>
</tr>
<tr>
<td>MRI Abdomen</td>
<td>34</td>
<td>Pancreatic Cyst</td>
<td>Neurosurgery</td>
<td>3</td>
<td>NPH</td>
</tr>
<tr>
<td>MRI Brain</td>
<td>4</td>
<td>Brain Mass</td>
<td>Neurovascular</td>
<td>1</td>
<td>Berry Aneurysm</td>
</tr>
<tr>
<td>MRI Spine</td>
<td>5</td>
<td>Scoliotic Lesion</td>
<td>Oncology</td>
<td>8</td>
<td>New Metastasis</td>
</tr>
<tr>
<td>PET</td>
<td>8</td>
<td>Pulmonary Nodule</td>
<td>Ophthalmology</td>
<td>1</td>
<td>Orbital Mass</td>
</tr>
<tr>
<td>Other Imaging</td>
<td>10</td>
<td>RUG/Caudal US</td>
<td>Rad Onc</td>
<td>1</td>
<td>New Metastasis</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
<td>GI Mass</td>
<td>Urology</td>
<td>12</td>
<td>Hydronephrosis</td>
</tr>
<tr>
<td>Other Proc</td>
<td>7</td>
<td>IB Rx, FNA</td>
<td>Vascular Surgery</td>
<td>9</td>
<td>Bladder Aneurysm</td>
</tr>
</tbody>
</table>

Revenue Generated in F/U Imaging:

$37,119 for three months, or approximately $150,000/yr for Trauma

New Malignancies Detected:

20 new malignancies and 5 new metastasis, or approximately 100 patients/yr (4%)