Unusual Complication of Heimlich's Manoeuver- Case Report and literature review
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Patient: 52 years, female

Clinical History:
Case report of a 52-year-old woman with asymptomatic calcified intrathoracic haematoma noted months after a Heimlich manoeuvre was carried out. Differential diagnosis was wide as history was not very forthcoming in view of learning difficulty of the patient.

Imaging Findings:
A 52-year-old woman with Down’s syndrome was being investigated for an ischemic ulcer on her right gluteal region by Dermatology. Chest X-ray (Figure 1) organised as a part of the investigations revealed a calcified lesion in the right lateral wall of the chest. This lesion measured 14cm x 8cm. It had a large soft tissue component and was associated with a small right-sided pleural effusion. On further examination, she had a slight asymmetry of the affected side of the chest and a large lipoma on her back. A CT Scan (Figure 2) of her chest revealed a large lesion in the right postero-lateral chest wall with heterogenous attenuation. The lesion had both soft tissue and calcified components, almost mimicking malignancy. The lung parenchyma was not involved. Findings were suggestive of a partially calcified haematoma. Going back through her records, she had no such findings on her previous Chest X-ray from 2004. The answer lay in the history obtained from her carers. She was resident in a care home and had an episode of choking while eating peanuts, a few months back, for which the staff present carried out the Heimlich’s Manoeuvre, which seemed to relieve her obstruction. On account of her learning difficulty she was not able to communicate the pain following the traumatic manoeuvre. Retrospective correlation with the history provided the right explanation for her asymptomatic clinical picture.

Discussion:
Heimlich Manoeuvre was first described by Henry Heimlich in June 1974. Following its widespread use, it was reported to have saved tens of lives within the first nine months. Fractured ribs in two cases were the only major problems reported in the original article. Currently, in the APLS guidelines, the words ‘abdominal thrusts’ are used instead of the phrase ‘Heimlich Manoeuvre’, primarily to define the indication and procedure more scientifically. ‘Abdominal thrusts are indicated following witnessed aspiration of foreign body where the victim is conscious but has a very weak and ineffective cough. There is recognition of the fact that abdominal thrusts can cause serious injury which has prompted an explanatory note stating that all victims receiving abdominal thrusts should be examined for injury by a doctor. Although the incidence of complications from the manoeuvre is low, serious complications can occur, some of which may be fatal, if undetected. Most common complication reported is rib fracture followed by...
gastric rupture (1.7%). Gastric rupture has mostly been seen in people over the age of 65 yrs or those neurologically impaired and in most cases multiple attempts were made. A variety of others have featured, mainly as case reports. A review of the literature revealed a case of dislodgement of thrombus from an atherosclerotic non-aneurysmal aorta which resulted in thromboembolic occlusion of both lower extremities. In another case, repeated Heimlich’s manoeuvre dislodged the foreign body further down in the trachea and may have contributed to rapid development of surgical emphysema, pneumomediastinum and pneumopericardium. The following table (Table 1) collates the rare complications reported from Heimlich Manoeuvre over the years as published recently.

Most of the reported complications have involved rupture of a hollow viscous. This article also described a case of hepatic rupture following Heimlich’s Manoeuvre reported for the first time. Correct technique does not preclude complications. In most published cases of complications of Heimlich’s manoeuvre, specific information regarding technique is not provided. Our case of Calcified Haematoma, which was diagnosed months following the manoeuvre, is the first to be reported in medical literature and caused a distinctive diagnostic dilemma. Our case emphasizes two important points. First, the importance of seeking medical help immediately after this manoeuvre is carried out on a victim and second that the complications from this manoeuvre can come to light weeks to months afterwards and can pose a diagnostic dilemma later on. Also finding of significant injuries in any institutionalised individuals should raise the suspicion of assault and specific questions regarding the technique used should always be asked.

**Differential Diagnosis List**: Partially calcified Intrathoracic haematoma following Haeimlich’s Manoeuvre

**Final Diagnosis**: Partially calcified Intrathoracic haematoma following Haeimlich’s Manoeuvre

**References**:


Croom DW. Rupture of stomach after attempted Heimlich manoeuvre. JAMA. 1983;250:2602-2603. (PMID: 6632154)


Agla GA, Hurst DJ. Pneumomediastinum following the Heimlich manoeuvre. JACEP. 1979;8:473-475. (PMID: 502110)


Agia GA, Hurst DJ. Pneumomediastinum following Heimlich maneuver. JACEP 1979;8:473-5. (PMID: 502110)


**Description:** Chest X-ray showing a calcified lesion in right lateral wall of chest

**Origin:**
Figure 2

Description: CT Scan Chest showing a large lesion in right postero-lateral chest wall with heterogeneous attenuation and partial calcification

Origin:


**Figure 3**

<table>
<thead>
<tr>
<th>Complication</th>
<th>Number of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gastric Rupture(^4,^9)</td>
<td>11</td>
</tr>
<tr>
<td>Pneumomediastinum(^13,^14)</td>
<td>3</td>
</tr>
<tr>
<td>Oesophageal Rupture(^15,^16)</td>
<td>2</td>
</tr>
<tr>
<td>Jejunal Rupture(^17)</td>
<td>1</td>
</tr>
<tr>
<td>Mesenteric Laceration(^18)</td>
<td>1</td>
</tr>
<tr>
<td>Diaphragmatic Hernia(^19)</td>
<td>1</td>
</tr>
<tr>
<td>Internal Carotid Artery Dissection(^20)</td>
<td>1</td>
</tr>
<tr>
<td>Acute Thrombosis of Abdominal Aortic Aneurysm(^21)</td>
<td>3</td>
</tr>
<tr>
<td>Acute abdominal nonaneurysmal aortic thrombosis(^10)</td>
<td>1</td>
</tr>
<tr>
<td>Rupture Aortic Valve Cusp(^22)</td>
<td>1</td>
</tr>
<tr>
<td>Acute Aortic Regurgitation(^23)</td>
<td>1</td>
</tr>
</tbody>
</table>

**Description:** Complications reported following Heimlich Manoeuvre

**Origin:**