MASSIVE TRANSCATHETER ARTERIAL EMBOLIZATION OF HIGH GRADE SPLENIC INJURY

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Disclosure

I do not have any potential conflict of interest
Clinical presentation

54 years old man

Gastric non Hodgkin lymphoma (stage IV A) diagnosed in the 2011 treated with chemotherapy until April 2012

Alcoholism

**Trauma** (accidental falling down stairs) January 2015

**Emergency Room - Vital signs**

GCS: 15/15

Blood pressure: 120-80 mmHg

Heart rate: 118 bpm

O2 Saturation: 98%

HbA: 11,7 g/dl
Multiple rib fractures

Complete splenic rupture

Arterial bleeding

Hemoperitoneum
Imaging
## Scaling system for organ specific injuries

**Ernest E. Moore, MD, Thomas H. Cogbill, MD, Mark Malangoni, MD, Gregory J. Jurkovich, MD, and Howard R. Champion, MD**

**Spleen injury scale (1994 revision)**

<table>
<thead>
<tr>
<th>Grade*</th>
<th>Injury type</th>
<th>Description of injury</th>
<th>ICD-9</th>
<th>AIS-90</th>
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<tbody>
<tr>
<td>I</td>
<td>Hematoma</td>
<td>Subcapsular, &lt;10% surface area</td>
<td>865.01, 865.11</td>
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<tr>
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<td>Capsular tear, &lt;1cm</td>
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<td>Completely shattered spleen</td>
<td>865.04, 865.14</td>
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The American Association for the Surgery of Trauma (AAST)
Endovascular procedure

Percutaneous access in right common femoral artery

5 Fr introducer sheath

Selective arteriography of the splenic artery and its branches

Transcatheter embolization with Spongostan® particles at the spleen hilum
Endovascular procedure

First angiogram
Endovascular procedure

Splenic artery

Capsular branch
Endovascular procedure

Embolization
Endovascular procedure

Final angiogram
Endovascular procedure

Final angiogram
Endovascular procedure

Final angiogram
Endovascular procedure

Final angiogram
Endovascular procedure

Final angiogram
Vascular anatomy

CT SCAN TWO WEEKS LATER
CT SCAN ONE MONTH LATER
CT SCAN EIGHT MONTHS LATER
CT SCAN EIGHT MONTHS LATER
Post-embolization clinical course

During hospitalization

- Good clinical conditions
  (no fever or infection signs, treatable abdomen)
- Hemodynamically stable
- Hemoglobin: 10 – 12.8 g/dl
- Neutrophilic leukocytosis: 20.000 - 17.000 – 20.000
- Thrombocytosis: 360.000 - 1.200.000 - 600.000
Discussion

Transcatheter arterial embolization of splenic lesions

Indications

- Hemodynamic stability / Borderline after resuscitation
- No indications for surgery

Sclafani SJ et al.
Nonoperative salvage of computed tomography-diagnosed splenic injuries: utilization of angiography for triage and embolization for hemostasis.

Haan JM et al.
Splenic embolization revisited: a multicenter review.
Discussion

Post procedural management and follow up

Serial CT examinations

- Pseudoaneurysm
- Recurrent bleeding
- Delayed rupture
- Infarction
- Pseudocyst
- Abscess

Discussion

Indications and Controversies

**Proximal embolization** vs **Distal embolization**

- multiple / large lesions
- faster
- easier
- larger ischaemia
- focal lesions
- precision
- time

no evidence-based consensus

Conclusion

Transcatheter splenic artery embolization is:

- Safe
- Simple
- Useful for preserving the spleen and its function

Conservative management of splenic injuries necessitates close observation and repeated imaging.
Thank you for your attention