FAILURE OF NON-OPERATIVE MANAGEMENT AFTER IR EMBOLIZATION IN A PATIENT WITH GRADE V+ LIVER TRAUMA: A CASE REPORT

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INTRODUCTION

- Trauma is a major cause of injury and death in young people, particularly when related to blunt objects with high impact or velocity.
- In pediatrics, the liver and spleen are most commonly injured solid organs following this type of trauma.
- Often, patients can be managed non-operatively if they remain hemodynamically stable.
- In severe solid organ injuries intervention radiology (IR) can be utilized to circumvent surgery.
- Embolization of splenic vascular injury is most common in pediatric cases.
- Few cases of hepatic procedures have been documented; likely because contrast blush is rare.
- Injuries to liver or spleen > grade IV are known to require embolization and are at higher risk for failure of NOM.
- Using the ATOMAC guideline, the main criteria for failure of NOM in children:
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    - This patient continued to exhibit high IAPs, and decreased urine output, making abdominal compartment syndrome the main indication to go to the operating room.
    - Potential complications of IR procedures can include: vascular assess site problems (such as clot formation as with this patient), contrast induced nephropathy, groin or retroperitoneal hematomas, pseudoaneurysm, arterial dissection, or distal embolization.
    - Clinical judgement remains best determinant for need for surgery.
    - More research is needed to establish a comprehensive evidence-based guideline for when to operate.

OBJECTIVES

- Identify the type of injuries that commonly fail non-operative management (NOM) in trauma patients.
- Describe potential complications of IR embolization procedures.
- Discuss possible criteria to determine failure of non-operative management following abdominal trauma.

DISCUSSION

- Injuries to liver or spleen > grade IV are known to require embolization and are at higher risk for failure of NOM.
- Using interventional radiology procedures as a bridge to avoid major surgery can increase the rate of success of NOM.
- In adults presence of contrast blush is considered predictive of need for surgical intervention.

REFERENCES


HOSPITAL COURSE CONT.

3-year-old male run over by a truck at 4-5 mph

In the OR:
- Visible bloody clot on the surface of liver along the lateral aspect on the right side, as well as along the gastro-hepatic ligament extending onto the left diaphragm and near the porta hepatis and falciform ligament.
- Abdominal washout of 1700 mL blood with JP drain placement.
- Post-operative course was uncomplicated and he was discharged on post-op day 25 with close follow-up by:

DISCUSSION CONT.

HOSPITAL COURSE CONT.

- IR imaging of contrast blush

3. Using the ATOMAC guideline, the main criteria for failure of NOM in children:

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- Clinical judgement remains best determinant for need for surgery.

- More research is needed to establish a comprehensive evidence-based guideline for when to operate.

REFERENCES


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