

**Splenic Injury Management –
Karolinska University Hospital Huddinge Protocol**

NORDICFORUM www.nordictraumarad.com
TRAUMA & EMERGENCY RADIOLOGY

Splenic injury management

- Karolinska Huddinge Trauma Manual 2004
- Diagnosis
 - » Unstable patient – US positive for abd free fluid > expl laparotomy = splenic injury
 - » Stable patient – trauma CT = splenic injury
- Splenic bleeds are lifethreatening > active surgery if circulatory unstable after initial resuscitation.

Management options

- Splenic injuries are handled in the total patient context
 - » Patients general condition
 - » Injury extent, ongoing bleeding, other injuries
 - » Surgeon's experience
 - » Availability of angiographic intervention
- Options
 - » Conservative – observation
 - » Angio-embolization
 - » Surgery

Conservative management

Isolated splenic injury post trauma CT

- Circulatory stable patient – observation in surgery ward 24 h bed rest
 - » Pulse + blood pressure 1/h
 - » Hb every 6th hour
 - » 2nd day > daily control Hb, Lpk, CRP
 - » Stable Hb > free mobilization in ward + free fluid intake
- No scientific proof for optimal time for immobilization; discharge @ 3 days + if
 - » Stable Hb, Lpk/CRP
 - » No pain, working GI tract
 - » Full mobilization
- Avoid contact sports etc for 3 months

Conservative management

Isolated splenic injury post trauma CT

- If continued transfusion is necessary & stable patient > ongoing slow bleed
 - » If trauma CT reliably excluded other injuries than splenic >> embolization or surgery
- Clinical observation more important than control radiology
- CT and/or US with contrast control within 3-5 days.
 - » Progress? Pseudoaneurysm?

Angio-embolization: Indication

- Acute
 - » Splenic injury diagnosed with trauma CT with evidence of ongoing bleed in a patient that is circulatory stable/stabilized & intervention is available
- Subacute
 - » Pt with verified splenic injury with a slow but continuing need for transfusions ≥ 24 h.
- Embolization is an alternative in pseudoaneurysm, especially when > 1.5 cm.
- Choice of method for embo i.e. central vs peripheral is made by the interventional radiologist after discussion with trauma surgeon.

Angio-embolization

- ADDENDUM /radiology comment/:
- If control CT/US with contrast (day 3-5) shows
 - » new splenic lesions
 - » new or progressing pseudoaneurysm
 - » >> embolization is indicated

Acute splenectomy

- Ongoing splenic bleed with non-responder to resuscitation especially with grade IV – V injury
- Multiple injured patient where splenic preservation surgery is too time consuming

Organ Injury Scaling: Spleen

I	Haematoma	Subcapsular, <10% surface area
	a	
	Laceration	Capsular tear, <1cm parenchymal depth
II	Haematoma	Subcapsular, 10-50% surface area
	a	Intraparenchymal, <5cm diameter
	Laceration	1-3cm parenchymal depth not involving a parenchymal vessel
		Advance one grade for multiple injuries to same organ up to Grade III.

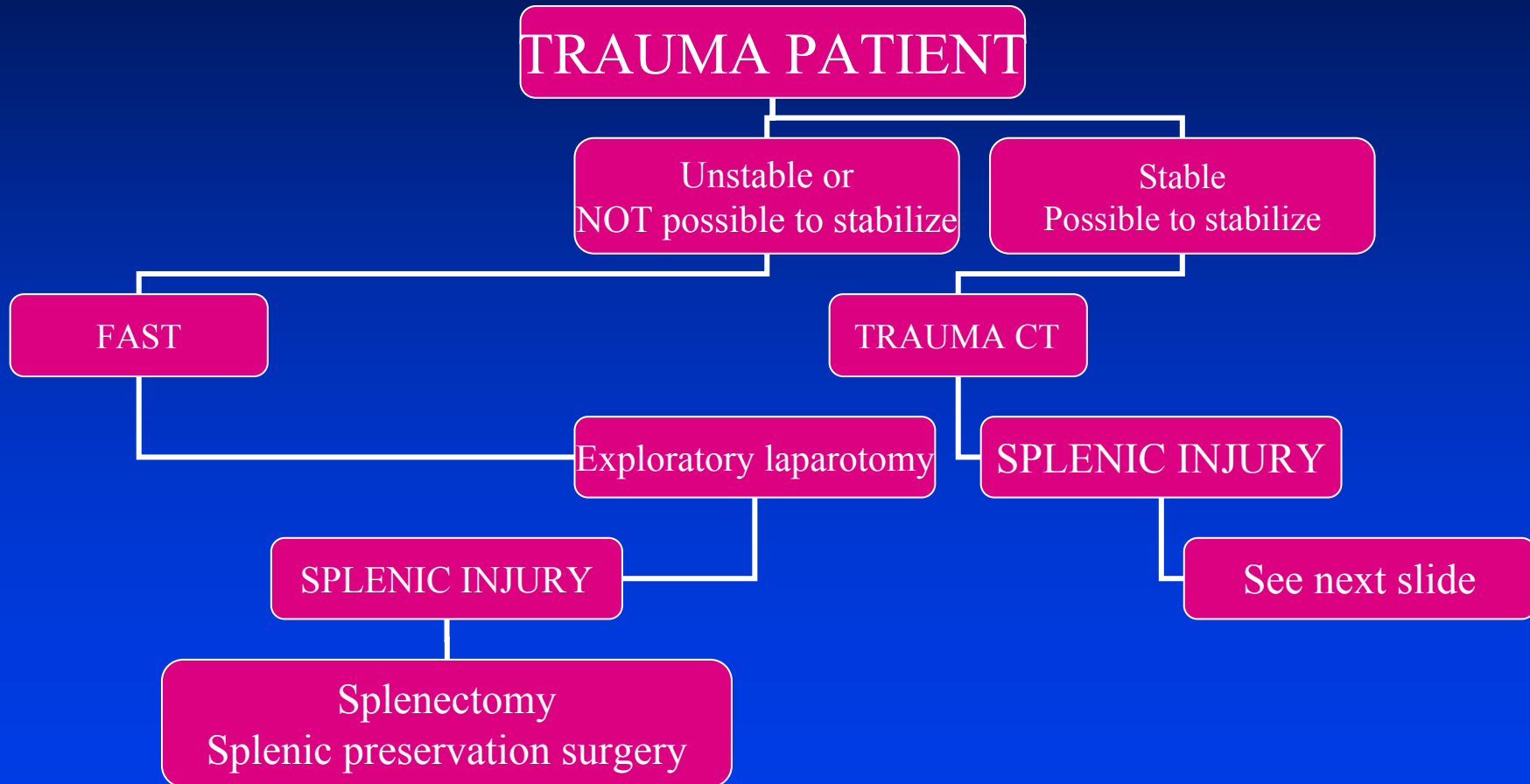
Organ Injury Scaling: Spleen

III	Haematoma	Subcapsular, >50% surface area or expanding. Ruptured subcapsular or parenchymal haematoma. Intraparenchymal haematoma >5cm
	Laceration	>3cm parenchymal depth or involving trabecular vessels
IV	Laceration	Laceration of segmental or hilar vessels producing major devascularization (>25% of spleen)
V	Laceration	Completely shattered spleen
	Vascular	Hilar vascular injury which devascularized spleen

Splenic preservation surgery

- Factors
 - » Patient age
 - » General condition
 - » Immunocompetence
 - » Surgeon's experience
- In patient > 70 year
 - » Priority of assured hemostasis
 - » Less important to save splenic parenchyma
(= reduction of risk for late sepsis (OPSI)

Algorithm



Algorithm

