Põrna, neeru ja pankrease vigastuste kuvamine

Anti Karask
Radioloogia V a resident
Aprill 2021

Parenhümatoossete organite tömptraumade sagedus

1) Põrn
2) Maks
3) Neerud
4) Pankreas

(1)

Kuidas uurida?

I/v kontrastainega KT on vastunäidustuste puudmisel valikmeetod kõhukoopa vigastuste diagnoosimiseks.

Hemodünaamiliselt ebastabiilsete patsientide kõhukoopa hindamiseks FAST.

Kontrasteerimine?

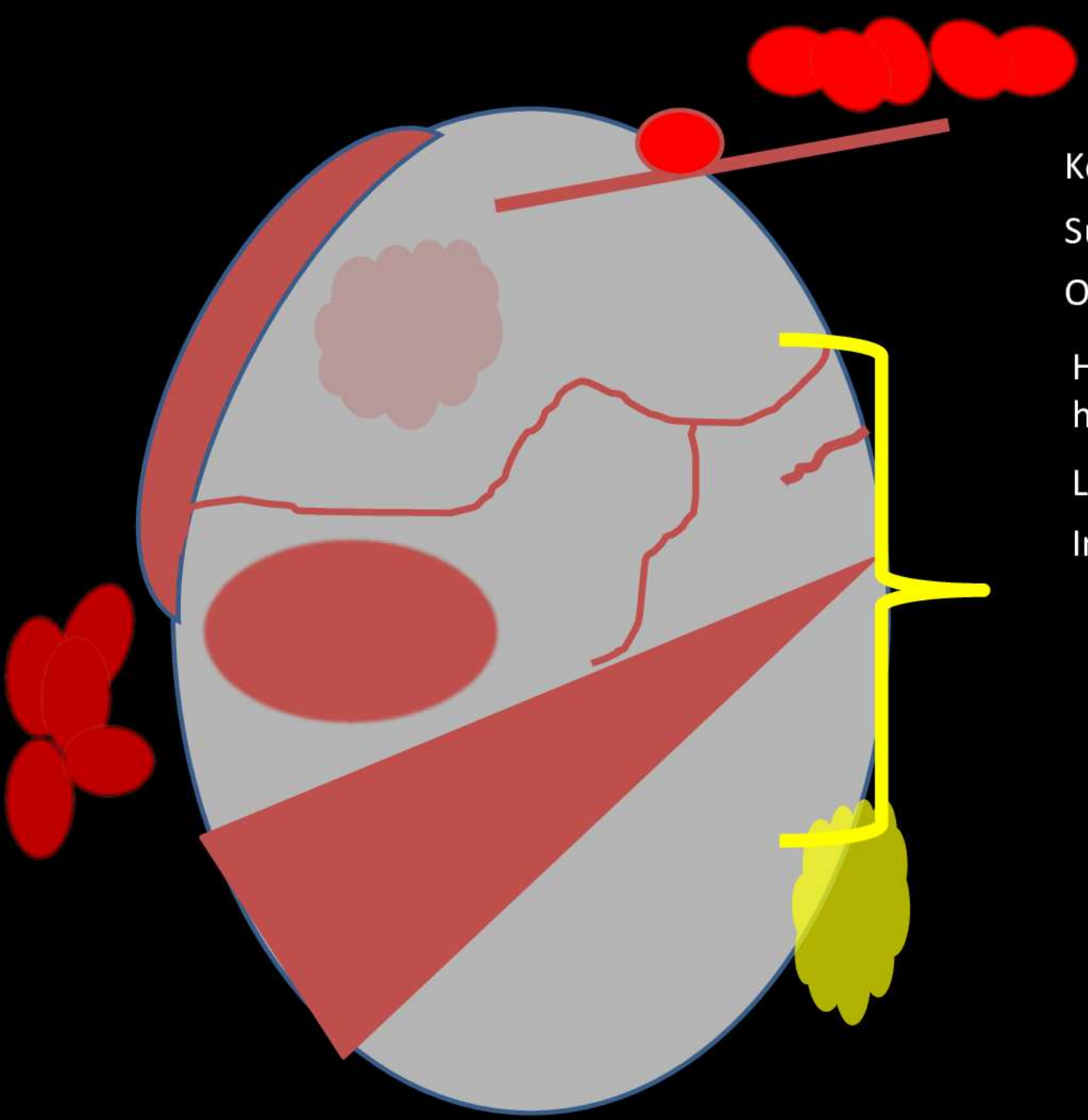
- Arteriaalne ja venoosne faas (AAST soovitus)
- Venoosne faas
- Topeltboolusege arteriovenoosne faas?
- Vajadusel eksretoorne faas

- Soolte kontrastaine tömptrama korral – ei. (3)
  Terava trauma korral +/-. (4)


R
L
5 cm
2 A 77.8 mm² Average 147.3 SD 23.4 Max 213 Min 94
1 A 62.2 mm² Average 84.0 SD 23.7 Max 141 Min 2

(5)

Põrna, neeru ja pankrease **OIS-AAST 2018** *(Organ injury scale of the American Association for Surgery of Trauma)* vigastuste hindamise klassifikatsioon.



Kontusioon

Subkapsulaarne hematoom

Organi sisene hematoom

Hemoperitoneum,
hemoretroperitoneum

Latseratsioon

Infarkt

Vaskulaarsed vigastused
(psudoanerüsm-AV fistul)

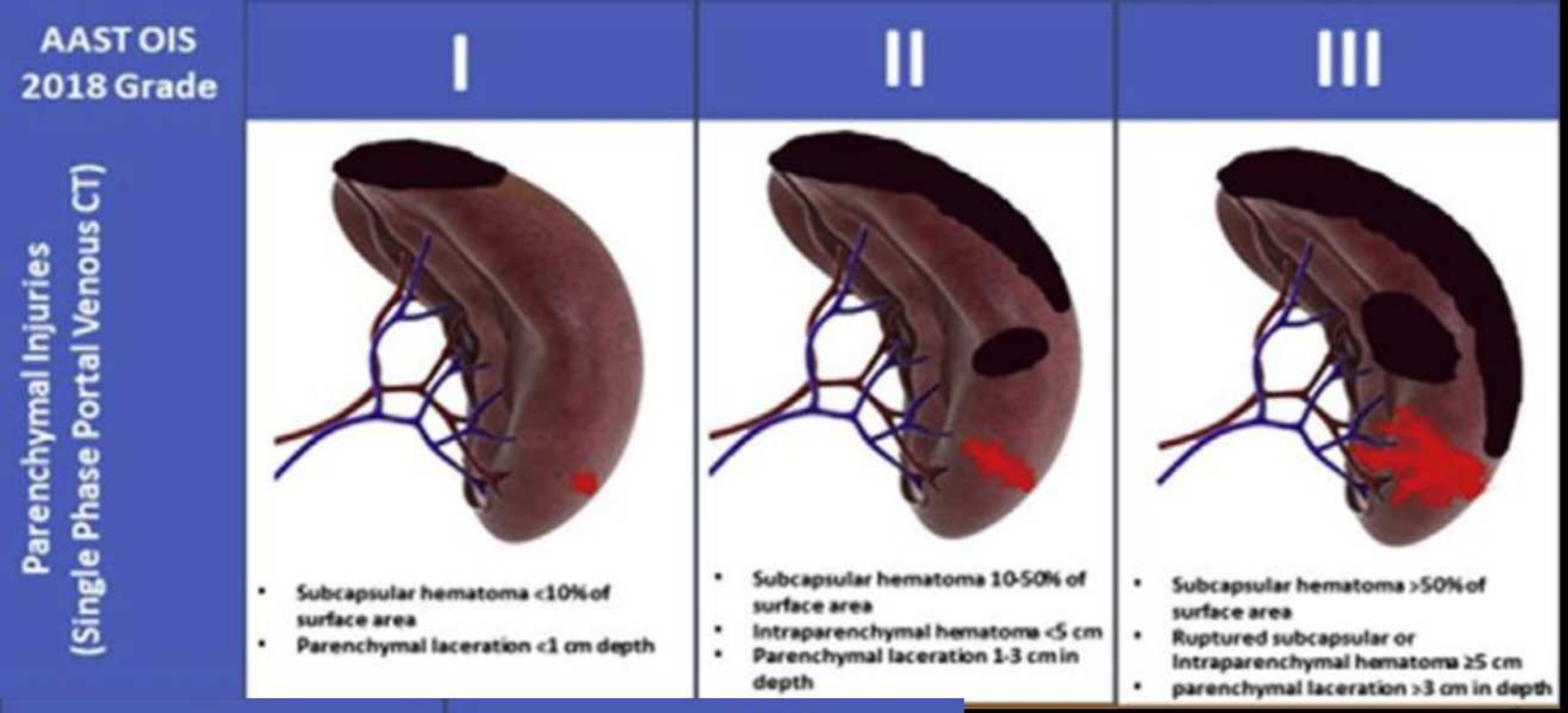
Aktiivne verejooks

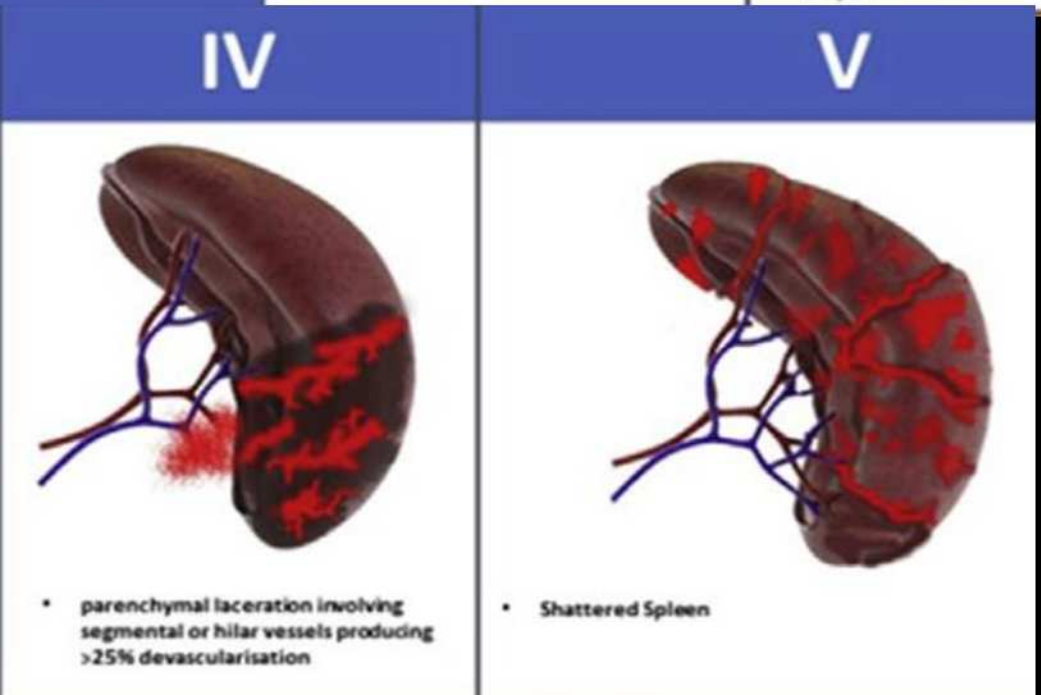
Uriinileke

Põrna vigastused

- Sage (kuni 50%) organvigastustest tömptrauma korral
- Madala astme vigastuste korral konservatiivne ravi, kõrge astme (gr IV-V) korral operatiivne või angiograafiline ravi
- Stabiilse hemodünaamika korral on eelistatud mitteoperatiivne ravi (toetav ravi, angiograafiline interventsioon)

(3)





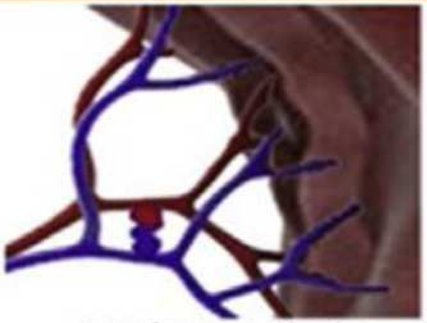
Mitme väiksema vigastuse korral suurenda astet +1 kuni gr III vigastuseni

(3)

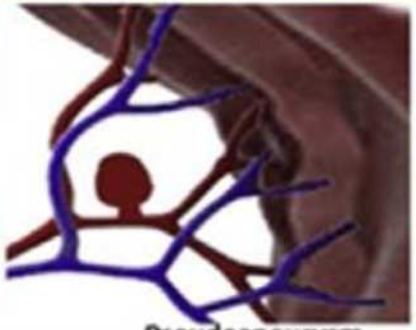
Vascular Injuries (Multiphasic CT)

IV

Any injury in the presence of a splenic vascular injury



Arteriovenous Fistula



Pseudoaneurysm

Active bleeding confined within splenic capsule

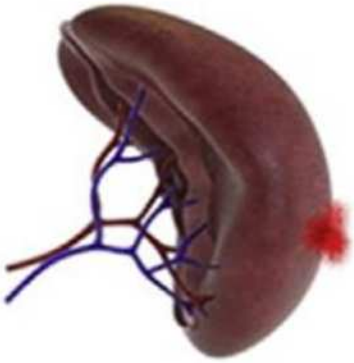
Arterial Phase

Venous Phase

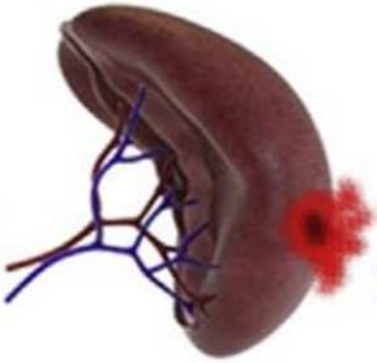
Delayed Phase

V

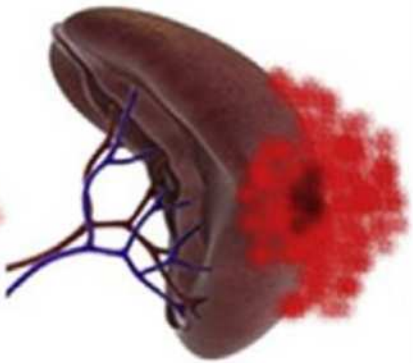
Extracapsular Active bleeding



Arterial Phase



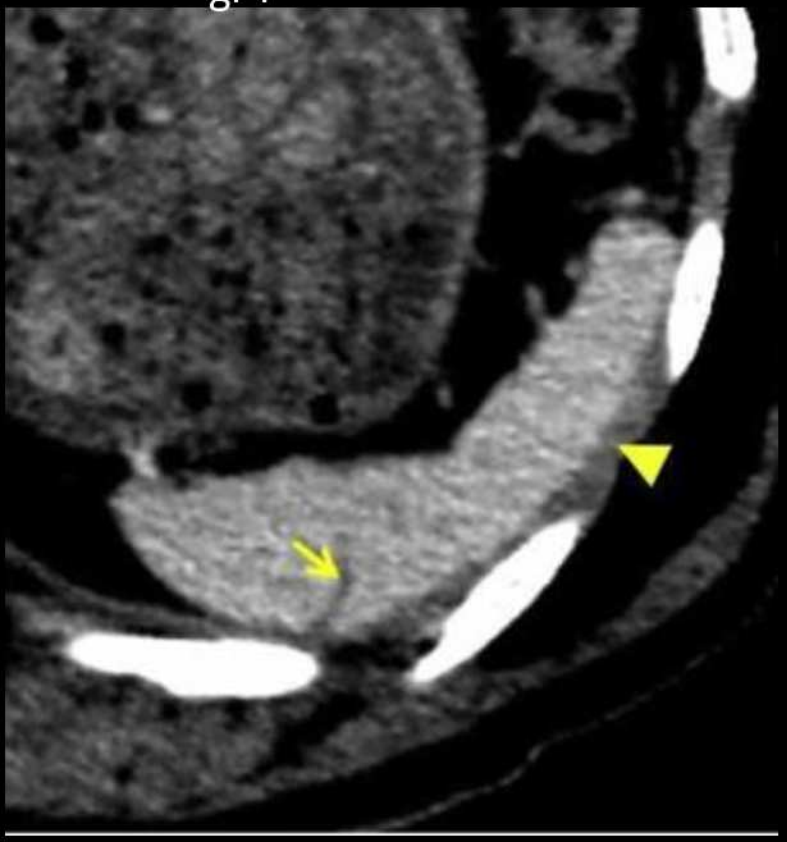
Venous Phase



Delayed Phase

(3)

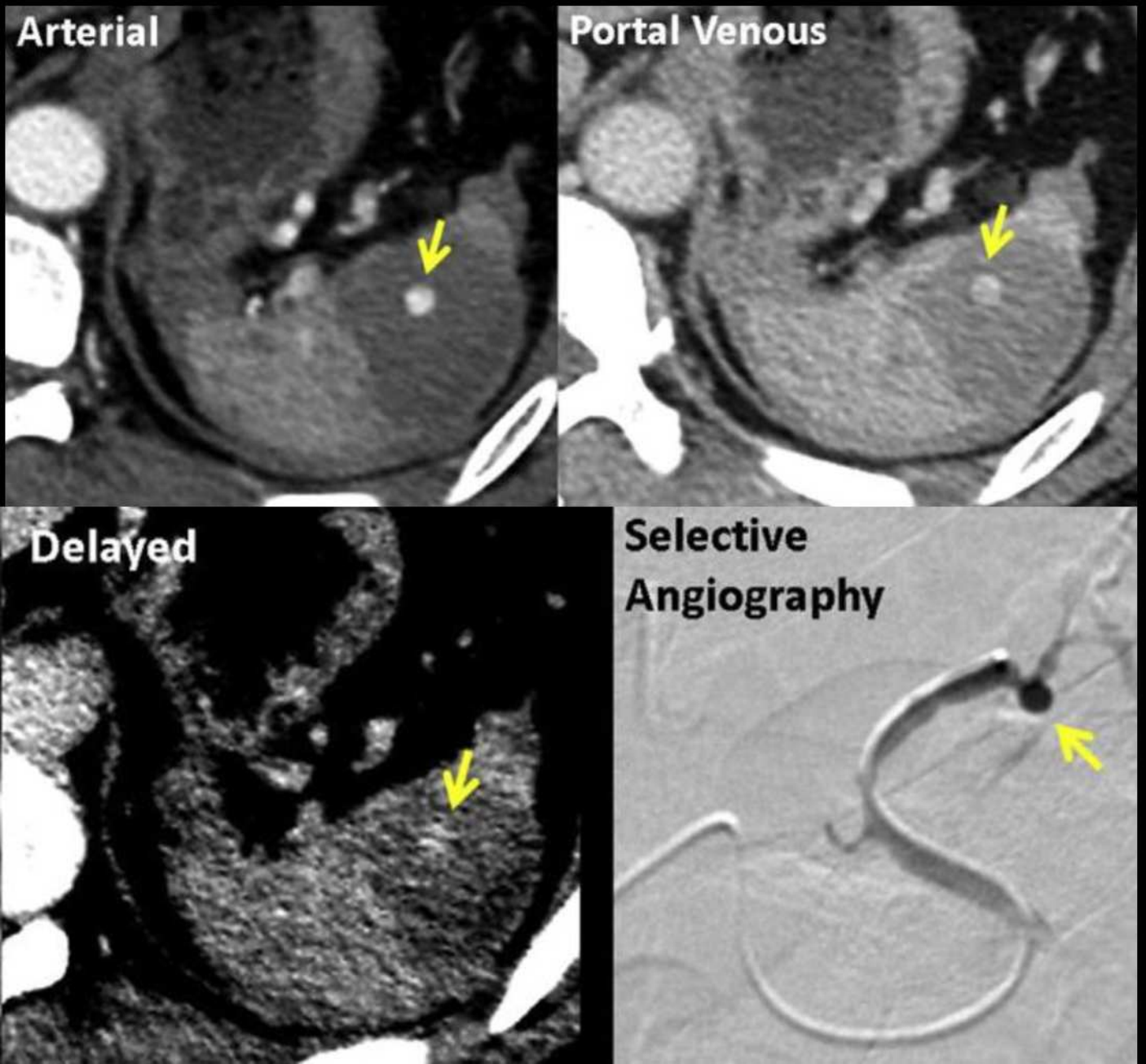
gr I



gr III, kapsli rebend hemoperitoneumiga

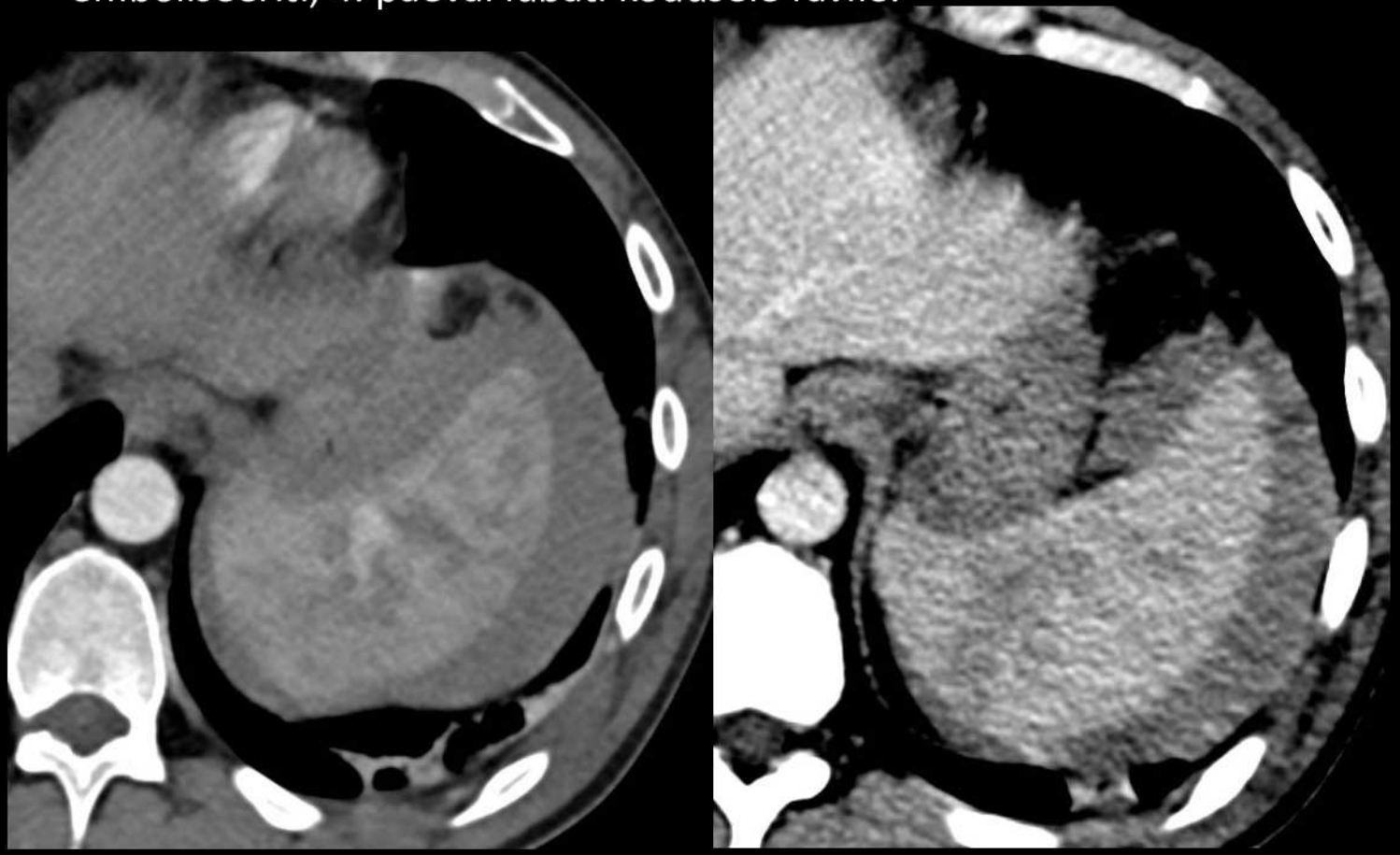
(3)

Pseudoaneurüsm – gr IV



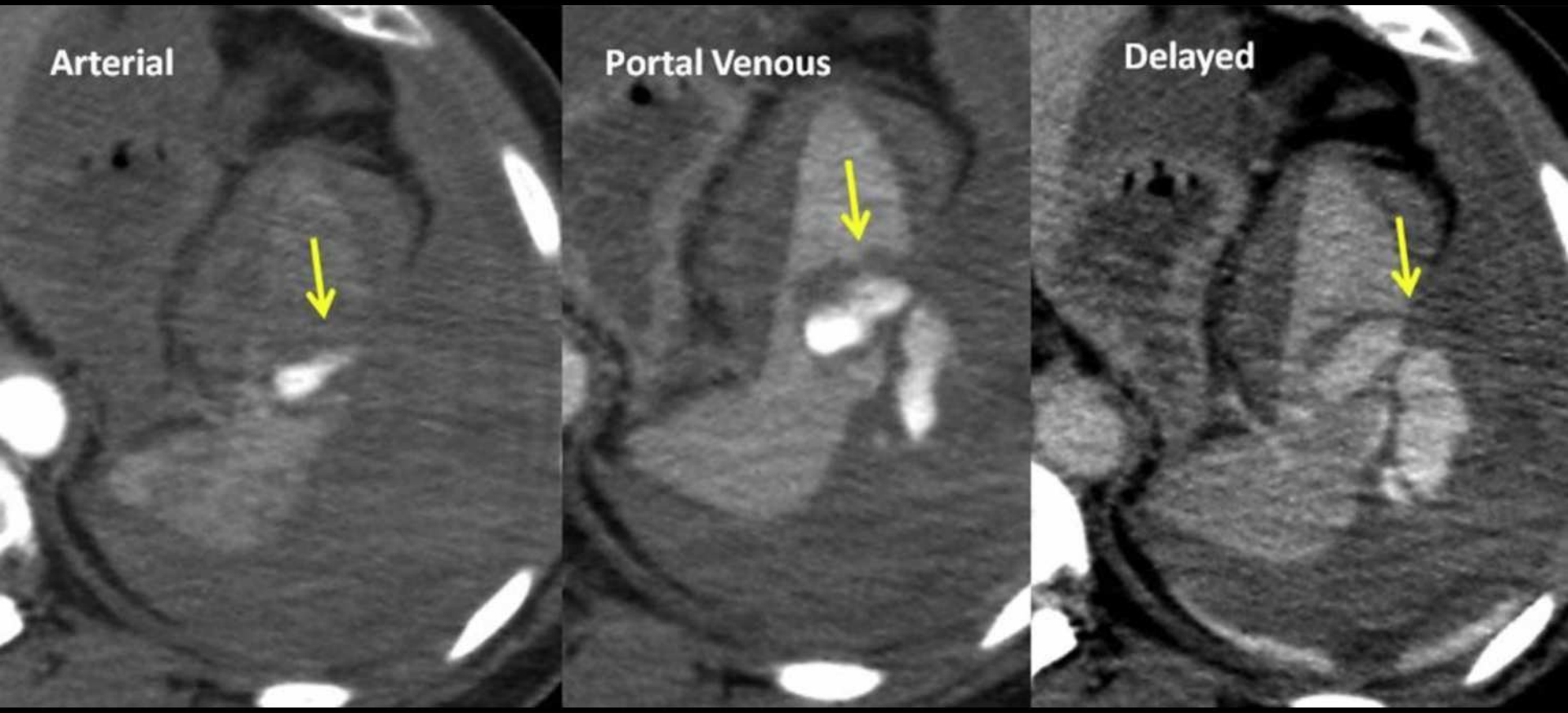
(3)

M 36, löök tooliga. Vaskulaarne gr IV vigastus. Põrnaarter emboliseeriti, 4. päeval lubati kodusele ravile.



TÜK

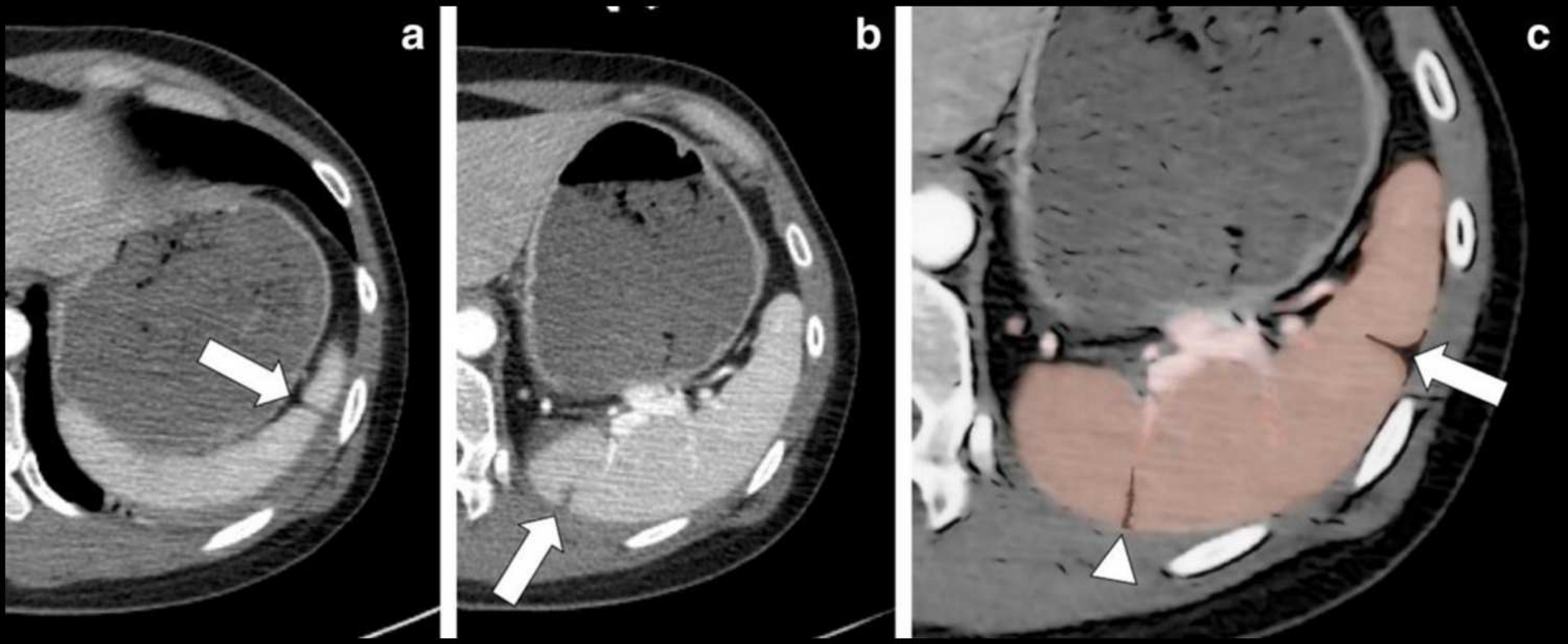
Kapslist välja ulatuv aktiivne verejooks – gr V



(3)

Komistuskivi

Kongenitaalne vagu (a) vs rebend (b)

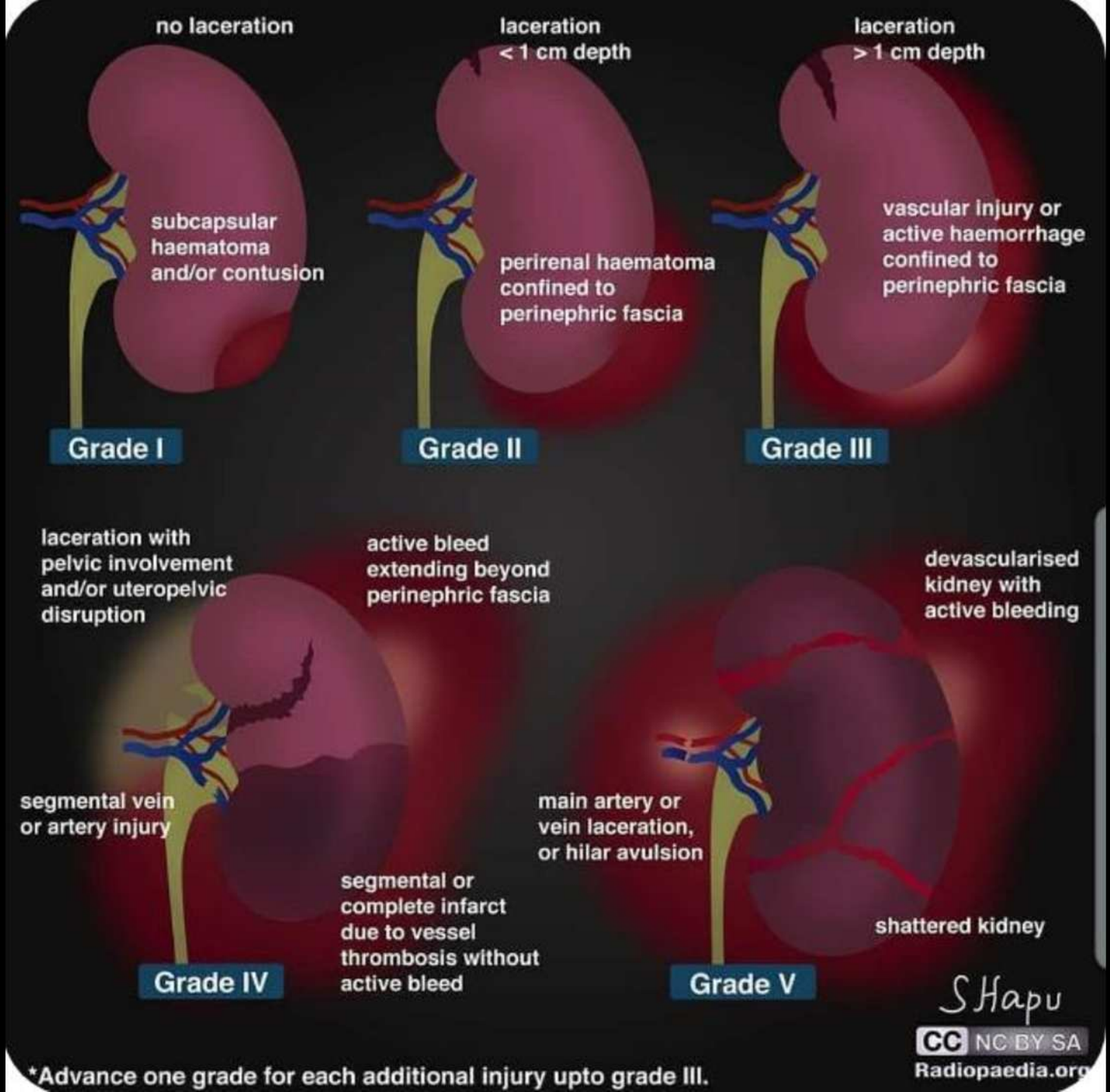


(6)

Neeru vigastused

- Kõhukoopa vigastustest u 10%
- Enamus on liiklusõnnetustega seotud tömptraumad
- Sagedamini madala astme vigastused (gr I-II 75-98%)

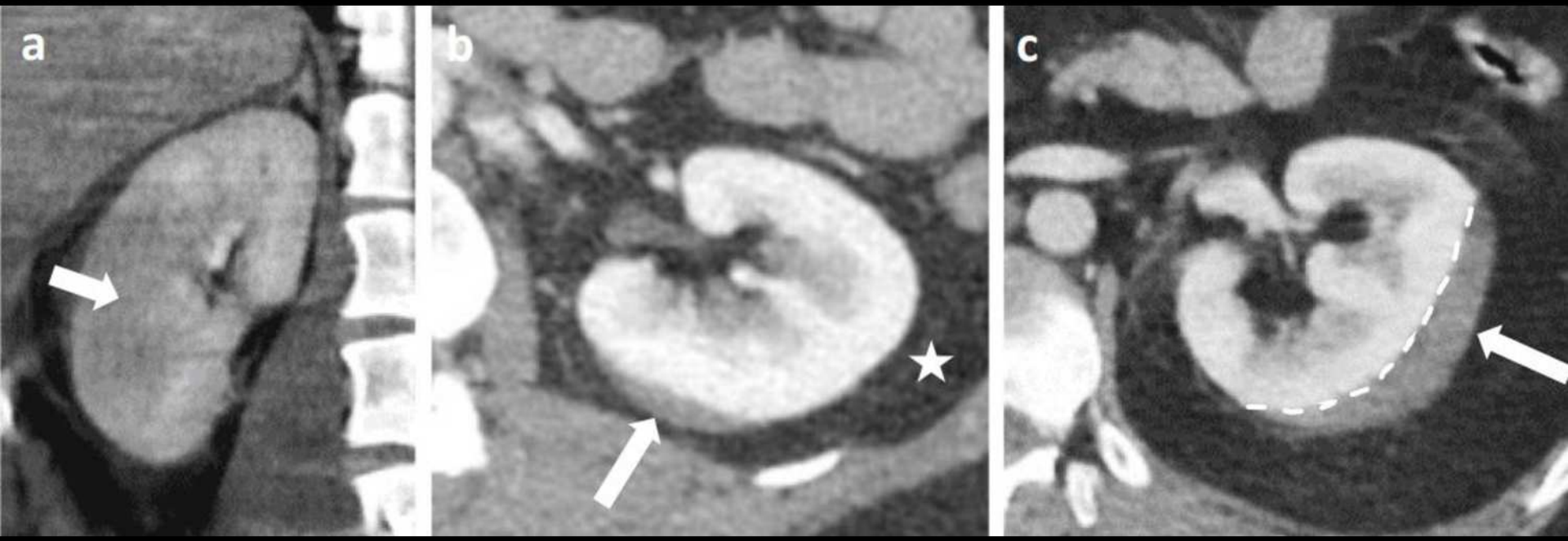
(7, 8)



Mõlemapoolsete vigastuste korral tõsta üks aste kuni III astmeni.

Kontusioon – gr I

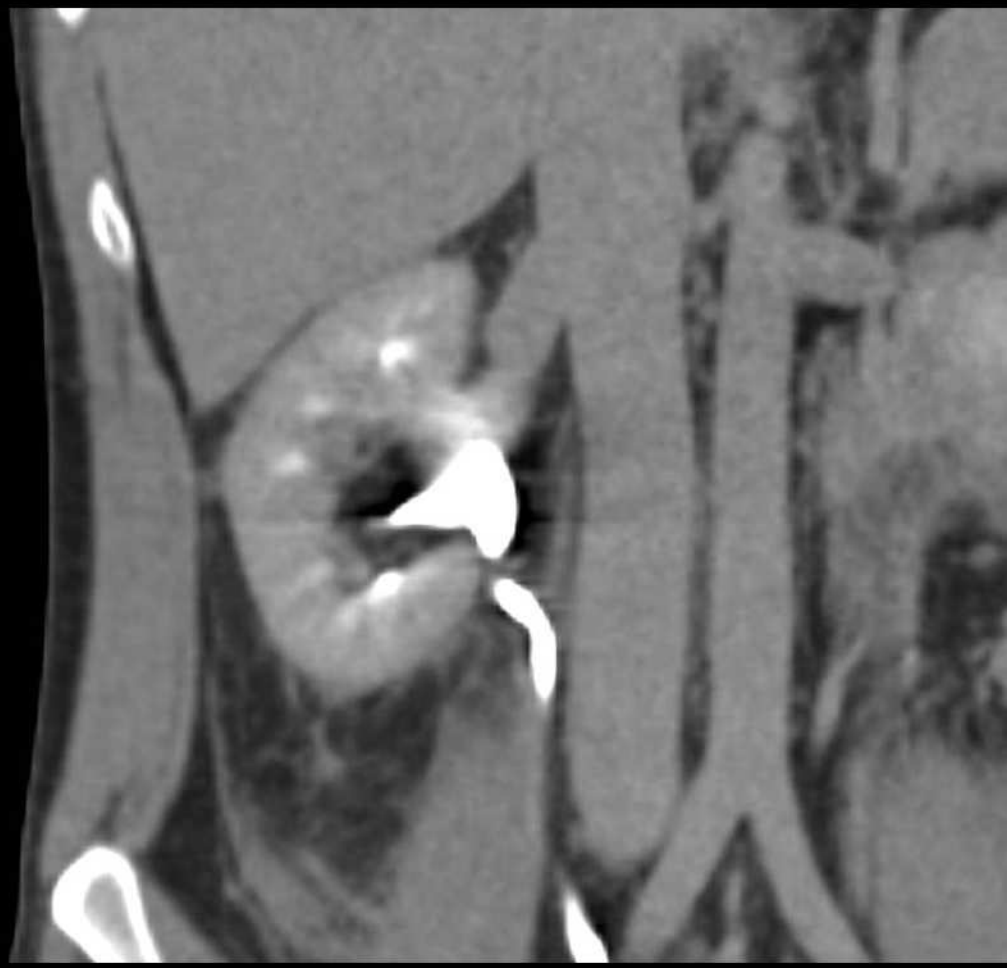
Subkapsulaarne hematoom – gr I



M 33 kukkus ATV-ga 2p enne uuringut, hematuuria – gr III (IV?) vigastus

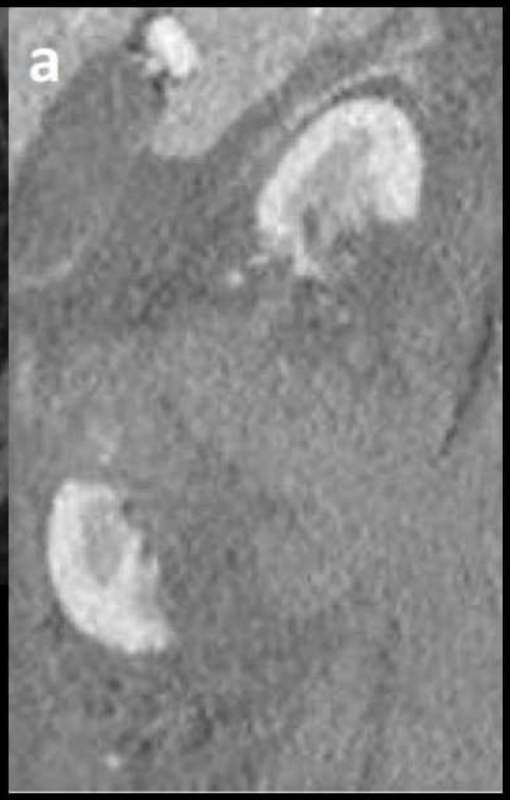
IVKH

Ekskretoorne faas 3p hiljem – gr III



Arteri vigastusest tingitud neeru infarkt (gr IV).
Kui kaasneks aktiivne verejooks -> gr V

gr V



gr V

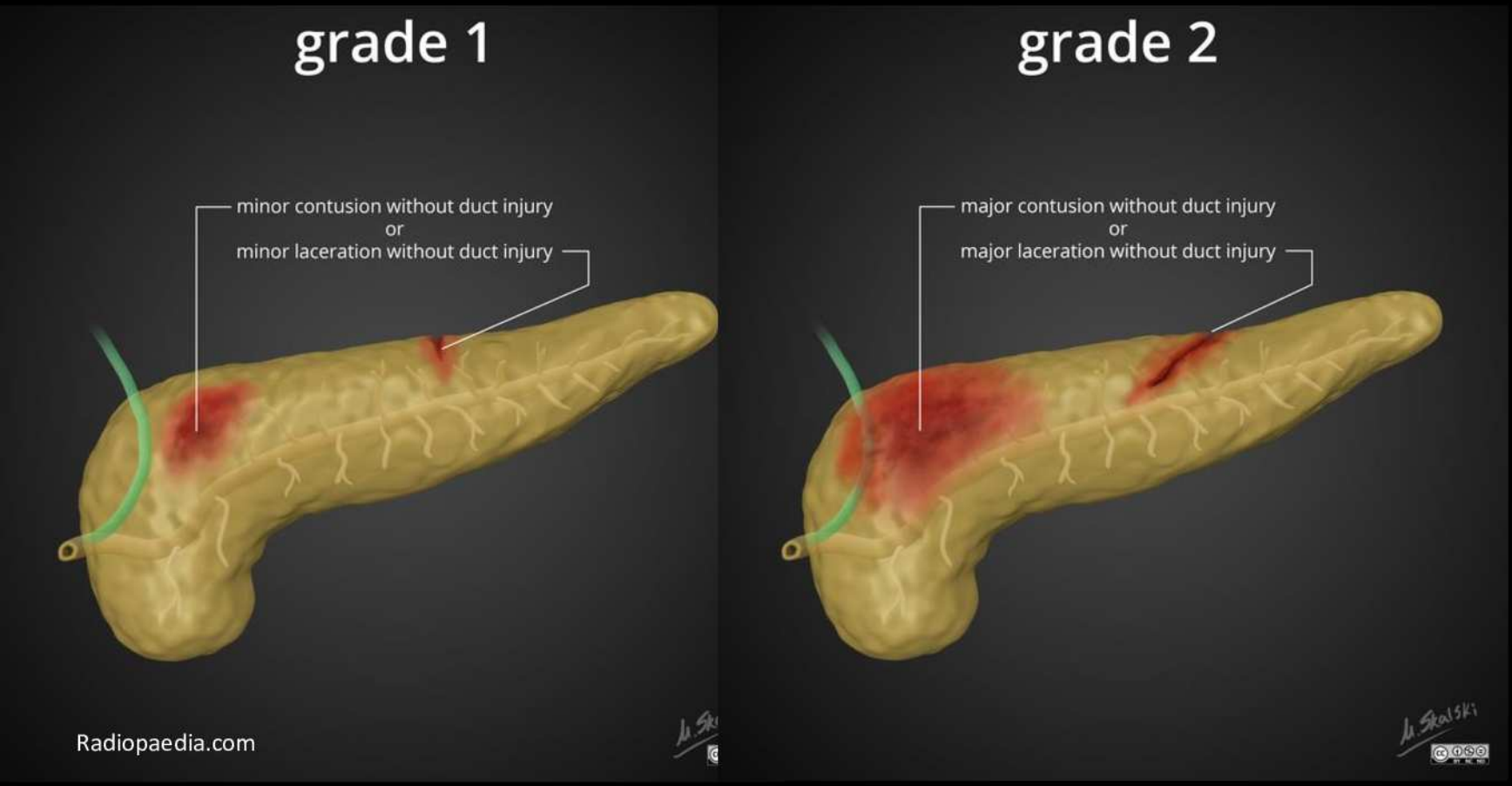
Neeru vigastuste käsitlus

- Gr I-II, sageli ka gr III konservatiivne toetav ravi
- Ebastabiilse hemodünaamika, kõrge astme vigastuste korral (gr IV-V) sageli operatiivne ravi
- Kollektorsüsteemi vigastused, mis ei haara neeruvaagnat või ureetrit paranevad spontaanselt suheliselt hästi (80 %), peristeeruva lekke korral stendid ja perkutaanne trenaaž
- Angiograafilised interventsioonid

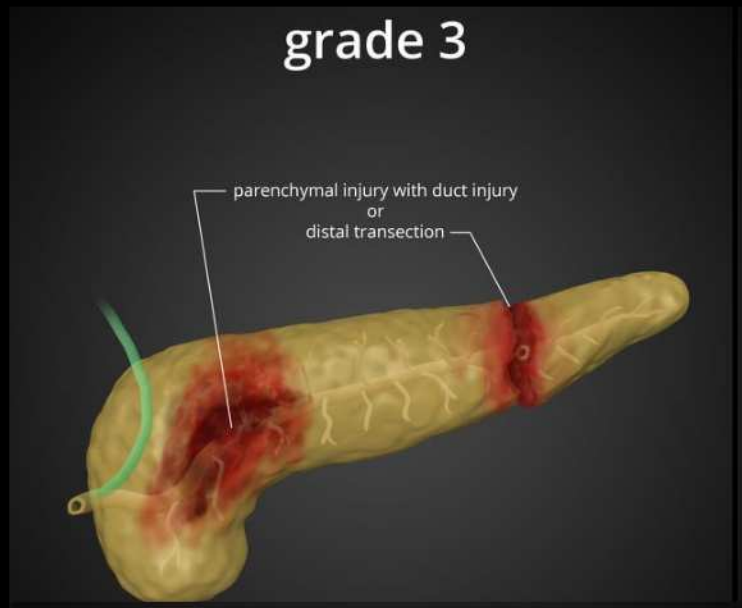
Pankrease vigastused

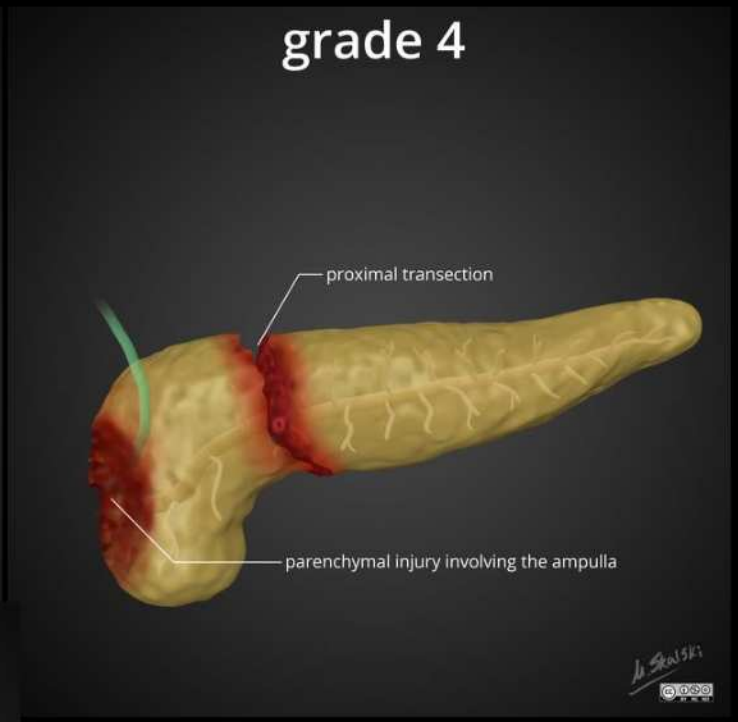
- Suhteliselt harvad (2% traumaatilistest vigastustest)
- Sageli koos teiste vigastustega (maks, põrn, suured veresooned, magu, duodeenum, neer)
- Prognostiliselt on oluline diagnoosimise kiirus ja peajuha vigastuse tuvastamine
- KT täpsus on piiratud, eriti peajuha vigastuste hindamisel
- Esmane KT võib alahinnata, kliin. kahtlusel peajuha vigastusele uus KT

Latseratsioon < 50%



Gr I-II pankreasejuha ei haara ja on madala astme vigastused





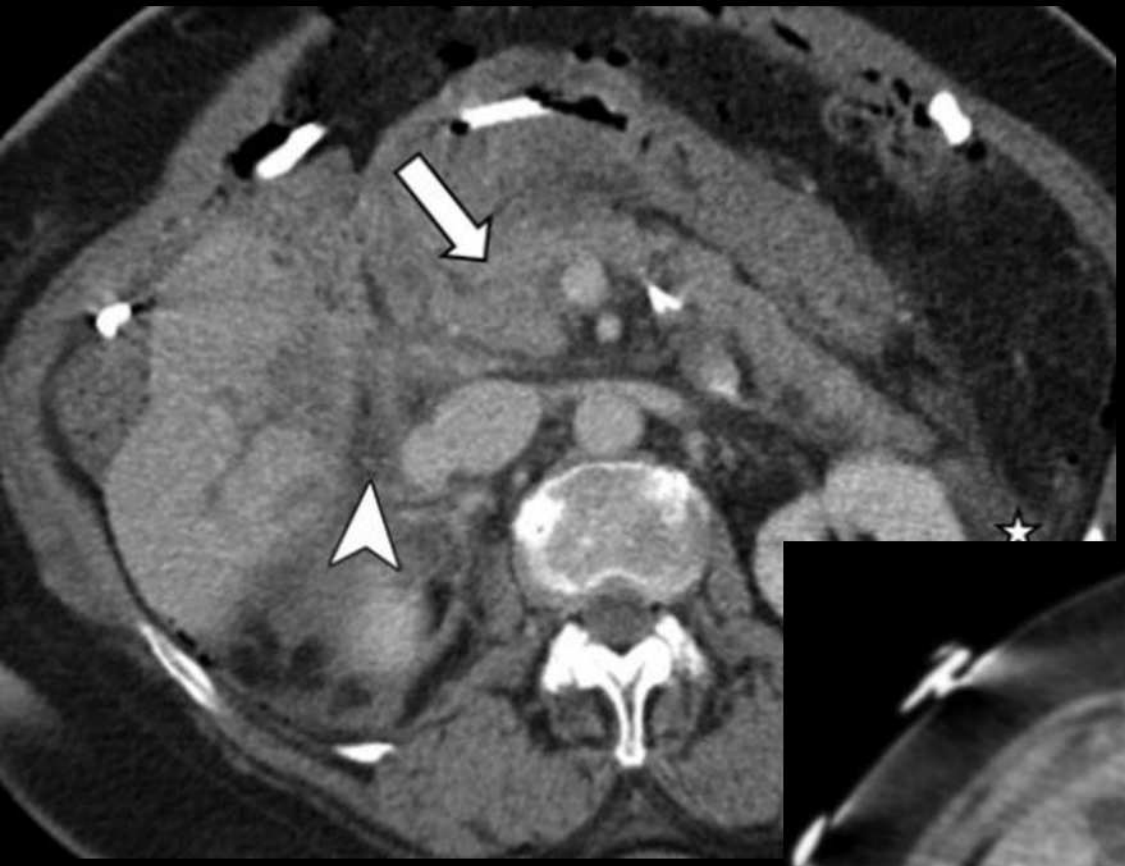
Gr III-V haaravad pankrease peajuha ja on kõrge astme vigastused

Mitu vigastust -> tõsta kuni gr III

Vaskulaarse vigastuse komponenti pankrease AAST klassifikatsioonis ei ole

gr II

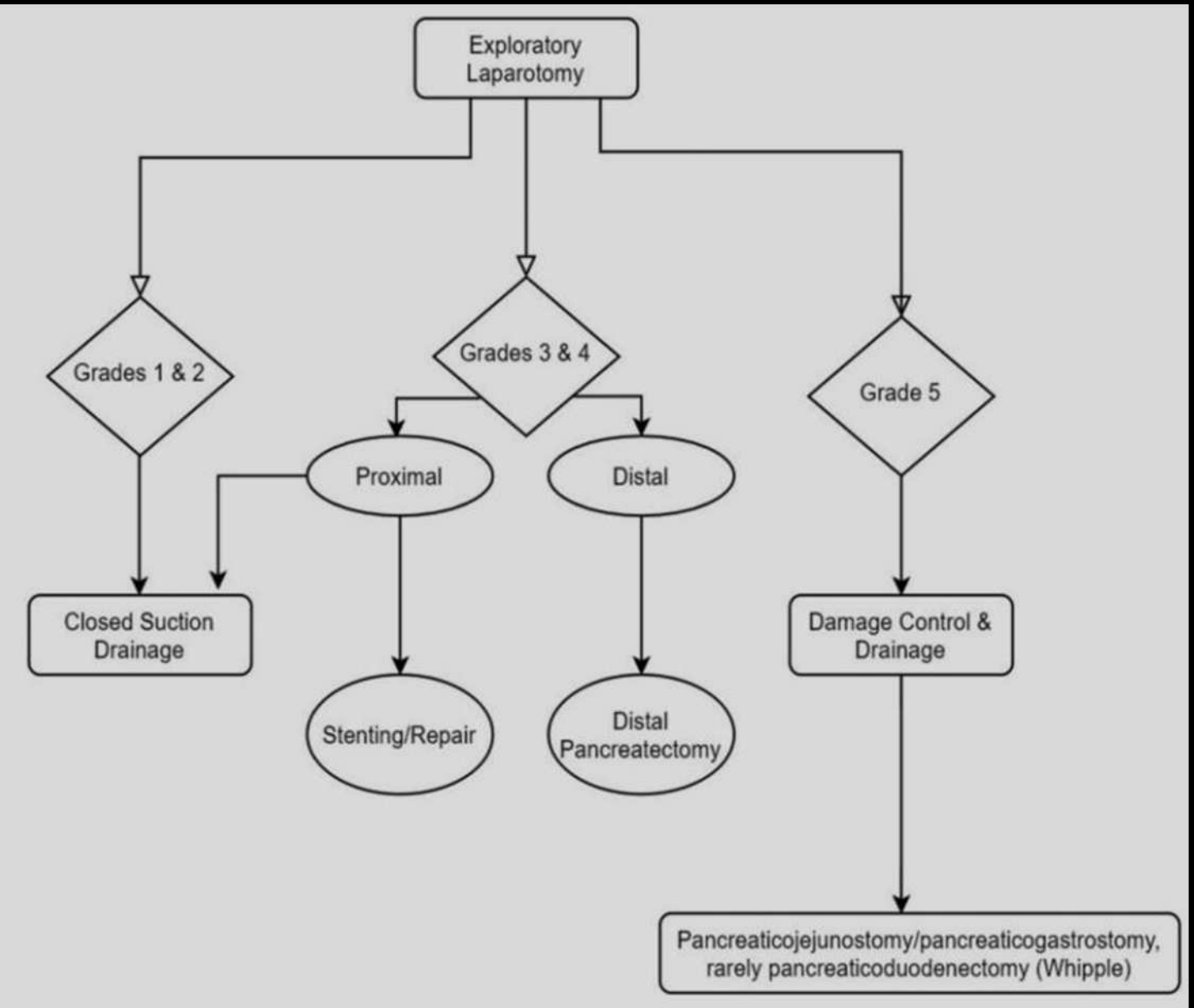
gr III



gr IV

gr V

Pankrease trauma käsitlus üldiselt



(9)

Vigastuste diagnoosimine ja raskusastme hindamine parandab patsiendi käsitlust.

Tänan kuulamast!

Kirjandus

1) Intra-abdominal Solid Organ Injuries: An Enhanced Management Algorithm, N Kokabi et al. Canadian Association of Radiologists Journal 2014

2) CT Imaging and Interventional Radiology in Solid Organ Injury. J. A. Friedman et al. Am Osteopath Coll Radiol 2019

3) CT of blunt splenic injuries: what the trauma team wants to know from the radiologist. H. Shi et al. Clinical Radiology 2019

4) Multidetector CT for Penetrating Torso Trauma: State of the Art. Radiology 2015 D. Dreizin, F. Munera

5) Trauma whole-body MDCT: an assessment of image quality in conventional dual-phase and modified biphasic injection. W. Hakim et al. Br J Radiol. 2016

6) Pearls and pitfalls of hepatobiliary and splenic trauma: what every trauma radiologist needs to know J. A. Graves et al. Emerg Radiol 2017

7) The American Association for the Surgery of Trauma Organ Injury Scale 2018 update for computed tomography-based grading of renal trauma: a primer for the emergency radiologist. L-C. Chien et al.

Emergency Radiology 2020.

8) Coming Together: A Review of the American Association for the Surgery of Trauma's Updated Kidney Injury Scale to Facilitate Multidisciplinary Management. M. Hosein et al. AJR 2019.

9) Pancreatic Trauma: Imaging Review and Management Update. A. R Ayoob et al. Radiographics 2020.