



Indicações para exames radiológicos

Neurorradiologia,
o que o médico precisa saber.

Parte 1

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Parte 1

Introdução

Diferença entre TC e RM

Indicações Exames de Neuroimagem na Emergência

Imagem no AVC Agudo

Casos interessantes

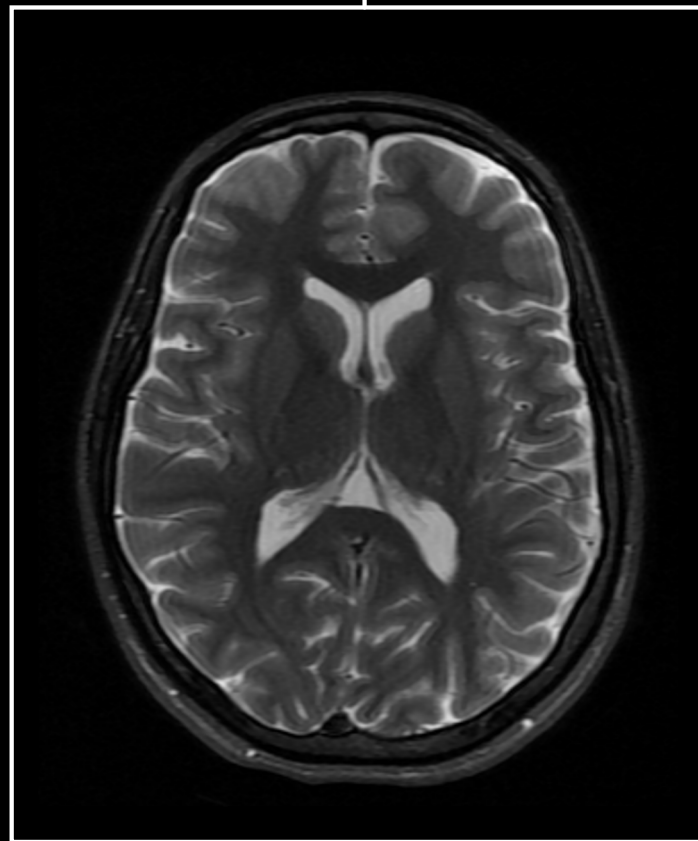


Como Diferenciar TC (Tomografia Computadorizada) **e RM** (Ressonância Magnética)

TC

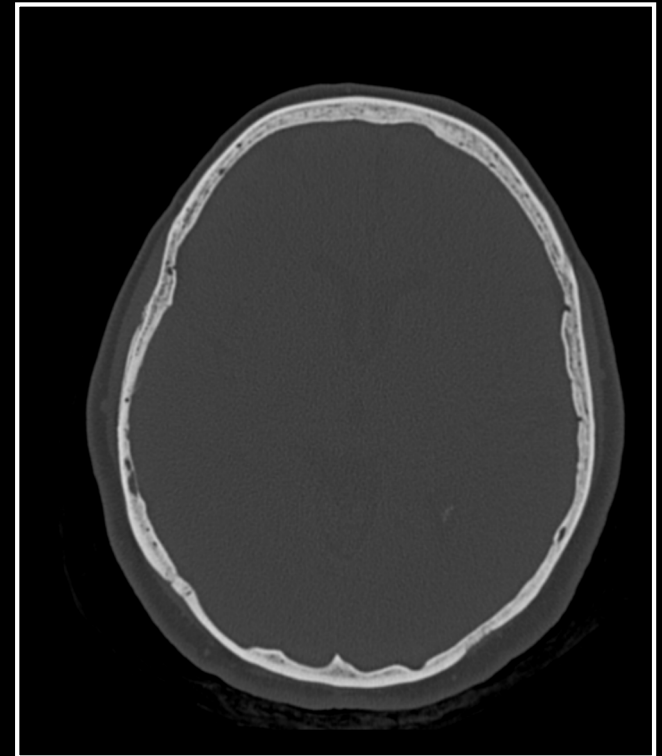


RM

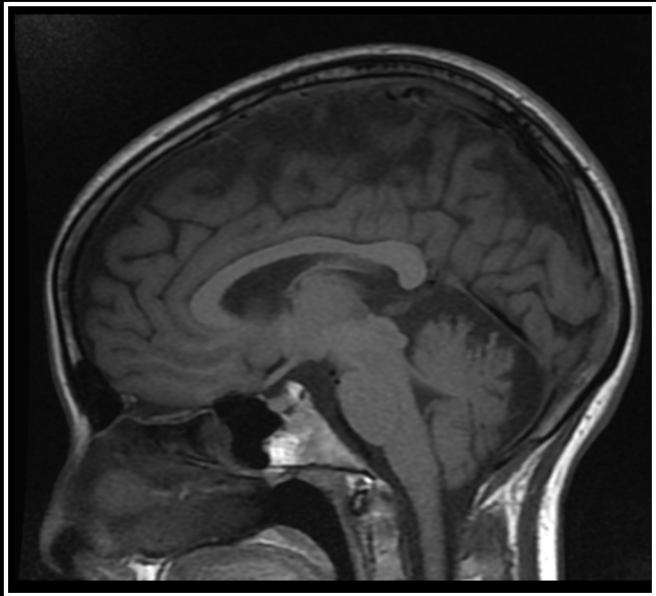


Tomografia Computadorizada

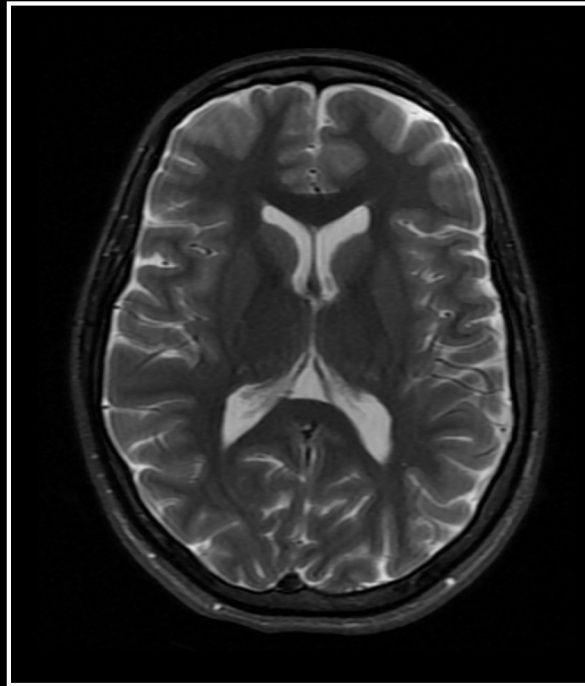
- Escala de Cinzas
- Sangue
- Osso
- Calcificação
- Ar



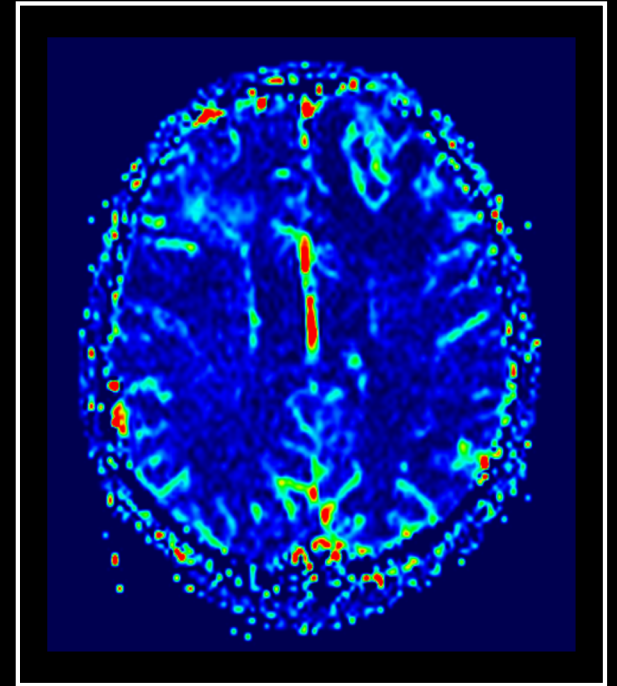
Ressonância Magnética



- Parênquima



- Líquor



- "Cores"

Mensagem

TRIAGEM



Tomografia Computadorizada

- Trauma
- AVC
- Cefaleia Aguda (PS)
- Hipertensão Intracraniana/Hidrocefalia agudas (PS)

DIAGNÓSTICO



Ressonância magnética

- Avaliar parênquima
- "Tudo"



Indicações de Exames de Neuroimagem na Emergência

- Trauma
- Cefaleia Aguda (PS)
- AVC
- Hipertensão Intracraniana/Hidrocefalia agudas (PS)



Trauma crânio-encefálico (TCE)

- Trauma crânio-encefálico (TCE)
- Classificação: Leve / Moderado / Grave
(Escala de Coma de Glasgow)
- Imagem: TC

Escala da Glasgow

TCE Leve: ECG 13-15

TCE Moderado: ECG 9-12

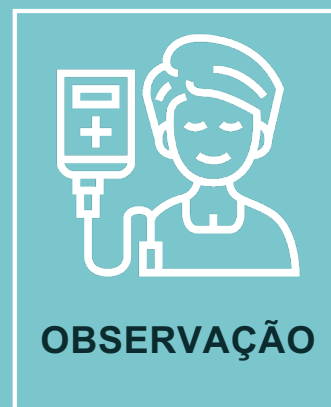
TCE Grave: ECG 8 ou menos

Escala de Coma de Glasgow		
Parâmetro	Resposta obtida	Pontuação
Abertura ocular	Espontânea	4
	Ao estímulo sonoro	3
	Ao estímulo de pressão	2
	Nenhuma	1
Resposta verbal	Orientada	5
	Confusa	4
	Verbaliza palavras soltas	3
	Verbaliza sons	2
	Nenhuma	1
Resposta motora	Obedece comandos	6
	Localiza estímulo	5
	Flexão normal	4
	Flexão anormal	3
	Extensão anormal	2
	Nenhuma	1
Trauma leve	Trauma moderado	Trauma grave
13-15	9-12	3-8
Reatividade pupilar		
Inexistente	Unilateral	Bilateral
-2	-1	0



Trauma crânio-encefálico (TCE)

- Imagem: TC
- Objetivo: orientar/definir conduta clínica





Quando solicitar RM

- TCE com déficit neurológico e TC normal
- Classe I de evidência



TCE LEVE: POLÊMICO!!!

- Não existe consenso na definição
- Manejo clínico incerto
- Classe I de evidência



**COMO
PROCEDER?**



TCE LEVE

- Definição: qualquer evento traumático que leve à confusão mental, perda de consciência ou memória, desorientação por um curto espaço de tempo
- Maioria: recuperação completa
- 6-10%: tem achados na imagem (TCE leve complicado)



**TCE LEVE COMPLICADO: PIOR
DIAGNÓSTICO**



TCE LEVE

- TC: se normal valor preditivo negativo de 99,7%
- TC normal = alta hospitalar



TC EM TCE LEVE: MANEJO CONDUTA CLÍNICA



QUANDO SOLICITAR TC EM TCE LEVE?

> 60 anos

Perda de consciência

Cefaleia

Vômitos

Intoxicação

Convulsão pós-traumática

Fratura de base de crânio

Déficit neurológico

Amnésia > 30 min

Coagulopatia

Table 3. Three major predictive rules used to determine which patients with mild TBI are at high risk for having intracranial injury and should undergo NCCT

	New Orleans Criteria	Canadian CT Head Rule	National Emergency X-Ray Utilization Study	NICE
Inclusion criteria	Only GCS score 15 blunt trauma LOC Headache Vomiting Age > 60 y Alcohol or drug intoxication Amnesia Visible trauma above clavicle Posttraumatic Seizure*	GCS score 13–15 blunt trauma GCS score < 15 at 2 h after trauma Open or depressed skull fracture Sign of skull base fracture Age ≥ 65 y Amnesia for ≥30 min ≥2 episodes of vomiting Dangerous mechanism†	GCS score 15 resulting from blunt head trauma	GCS score 14 Signs of basal skull fracture Neurologic deficit Vomiting Amnesia before impact >30 min Posttraumatic seizures Coagulopathy Dangerous mechanism Age > 64 y
References	Haydel et al [79]	Stiell et al [78]	Mower et al [90]	NICE [91]

Note: GCS = Glasgow Coma Scale; NCCT = noncontrast CT; LOC = loss of consciousness; NICE = National Institute for Health and Care Excellence; TBI = traumatic brain injury.

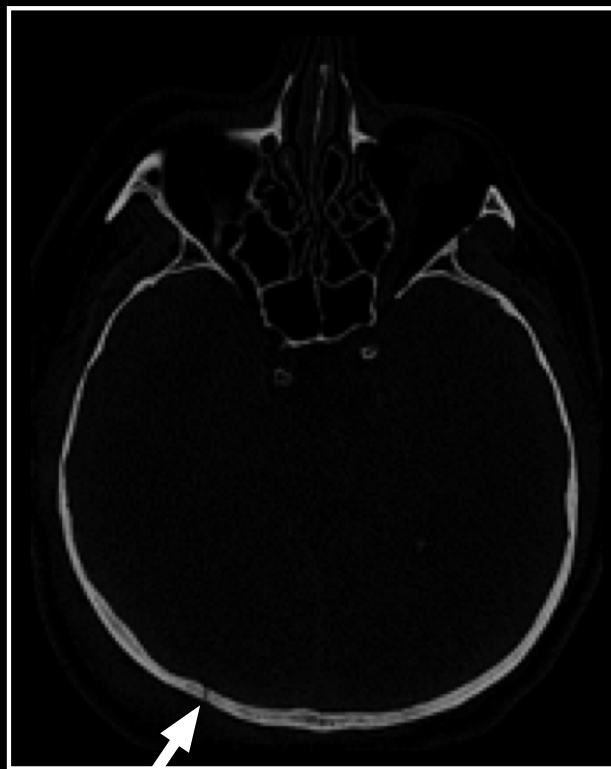
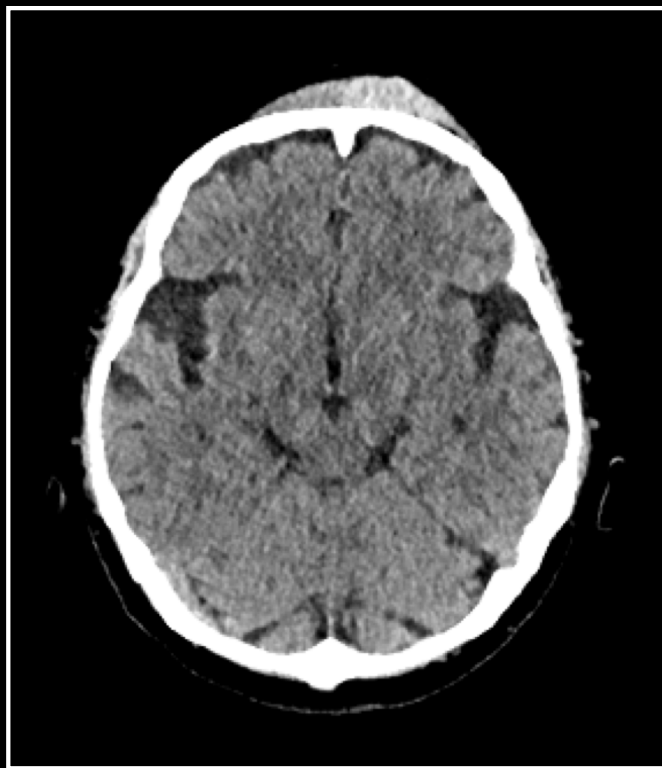
*If none present, safely avoid NCCT (sensitivity, 97%–100%).

†If none present, avoid NCCT (sensitivity, 98.4%).

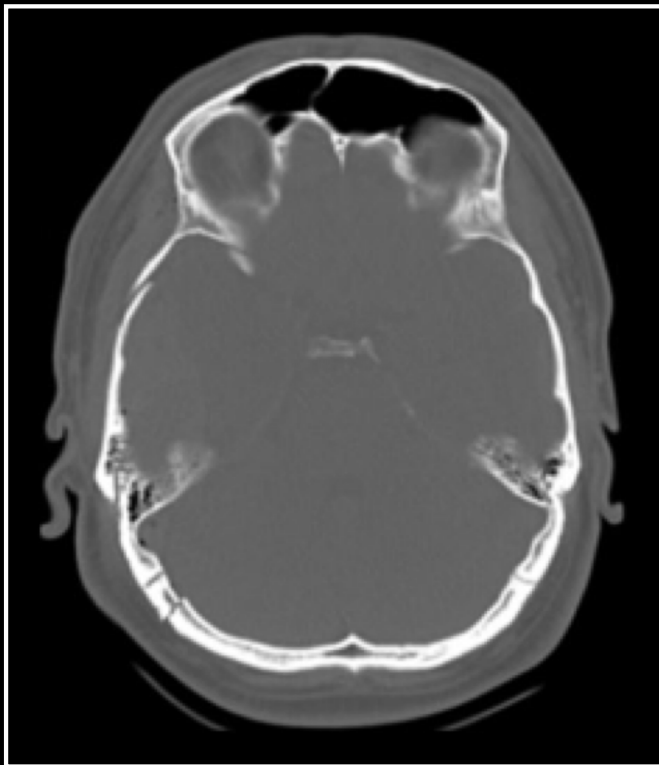


TCE (ACHADOS DE IMAGEM)

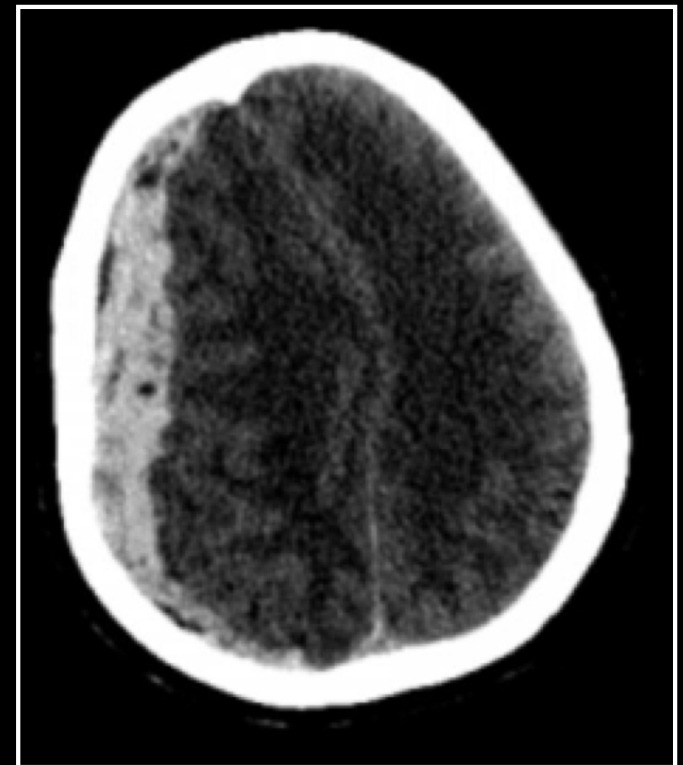
- Fraturas
- Hemorragia Intra ou Extraparenquimatosa
- Complicações: Herniações Encefálicas, Isquemia



Hematoma Epidural (*Art meningea Média*)

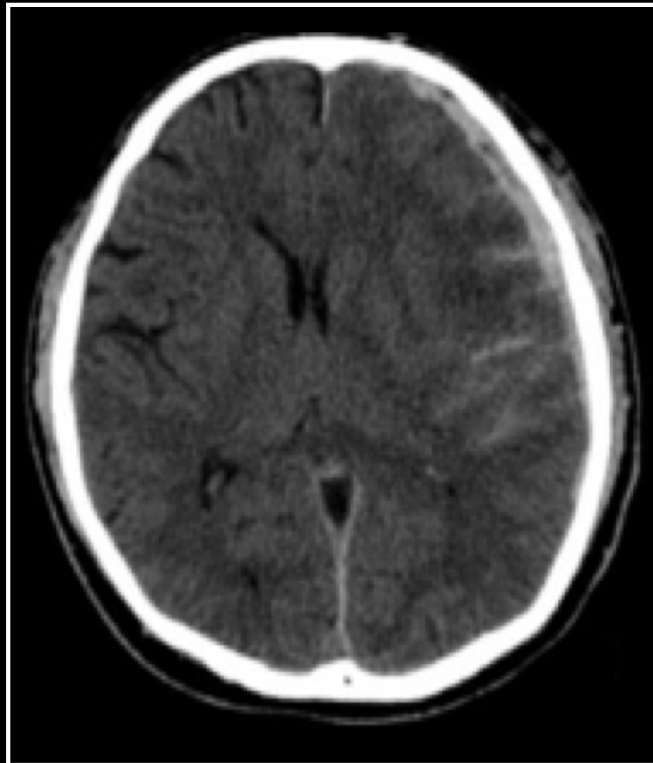


Hematoma Subdural (*Sangramento Venoso*)

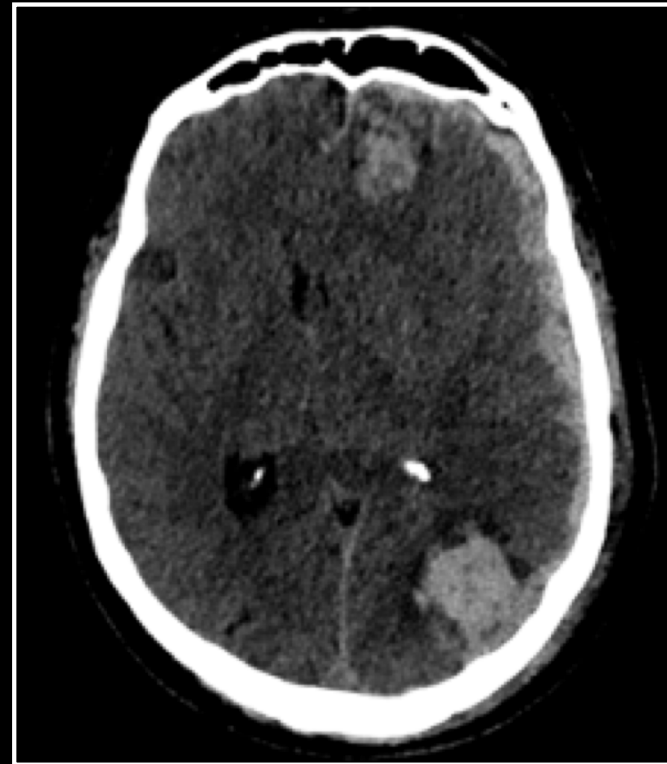


HSA

(hemorragia subaracnoidea)



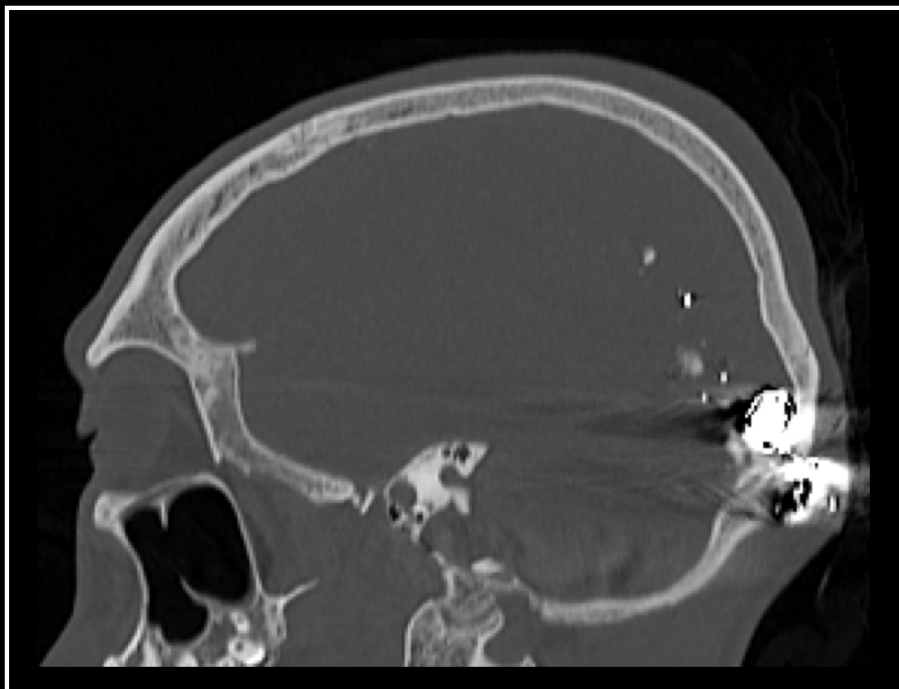
Contusão
Parênquima



Herniação



FAF





Lembrando...

[TC]

TCE moderado ou grave

[TC]

Em casos selecionados
TCE Leve

[RM]

TCE com déficit
neurológico e TC
normal

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Summary

For patients presenting with acute moderate to severe TBI:

1. NCCT is the first line of imaging in the acute phase and can predict mortality and unfavorable outcomes in these patients (class I recommendation).
2. MRI may be indicated in acute TBI when results on NCCT are normal and there are persistent unexplained neurologic findings (class I recommendation).
3. MRI, more specifically T2* GRE and SWI, is very sensitive to microhemorrhages within the brain. Whether the number and volume of these microhemorrhages, ...

Summary

For patients presenting with acute mild TBI:

1. NCCT remains the imaging of choice in the acute phase. NCCT has a high negative predictive value for excluding the need for neurosurgical intervention in patients with mild TBI (class I recommendation).
2. The NOC, CCHR, and NEXUS-II are 3 major prediction rules that identify patients with mild TBI who can safely avoid NCCT (class I recommendation).
3. Despite the higher sensitivity of MRI for detecting axonal injury among patients with mild TBI, the routine use of MRI is not recommended (class IIb recommendation). However, MRI may be indicated in particular instances when there are persistent neurologic, cognitive, and behavioral symptoms, such as new-onset, progressive, or worsening symptoms (class I recommendation).
4. No studies to date have demonstrated a significant impact of early MRI for acute mild TBI on the emergent disposition of patients with mild TBI.



Obrigado!

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