PVHMC Stroke Symposium

Malignant MCA Infarction and Hemicraniectomy

Clinical Case Presentation and Overview

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Malignant MCA Infarction and Hemicraniectomy Clinical Case Presentation

- **A 58 year old right handed male with a history of hypertension, s/p c-spine surgery six years prior to admission, presented to the ER with complaints of RUE weakness. Per the primary care physician, the patient presented with frequent episodes of RUE pain and/or weakness. The patient was brought in by paramedics. He was last seen the day prior to admission. Per history the patient was in his usual state of health until the morning of admission when he awoke aphasic and right hemiparetic with a noted left gaze preference.**

Hospital Course

On initial exam, the patient's vital signs were stable; BP 138/78, HR 44. The patient's deficits included a left gaze preference, the right pupil was greater than left, bilaterally brisk, a right homonomous hemianopsia, a right UMN, right hemiparesis, bilateral Babinskis. The patient was admitted to the Stroke Unit and a CT and MRI was obtained.

Hospital Course

On hospital day #2, the patient's course was significant for progressive neurologic deterioration. A repeat MRI was obtained. At that time Neurosurgery was consulted.

TREATMENT SO FAR

Medical Options:

1. Blood pressure management.
2. Fluid status
3. Diuretic therapy (Mannitol)
4. Optimization of oxygen and respiratory status.

Signs and Symptoms of Neurological Decline

1. Describe how you measure level of alertness
2. Describe how breathing can change.
3. Describe pupillary changes.
4. Describe Motor changes
5. What other signs would indicate this patient is NOT doing well:


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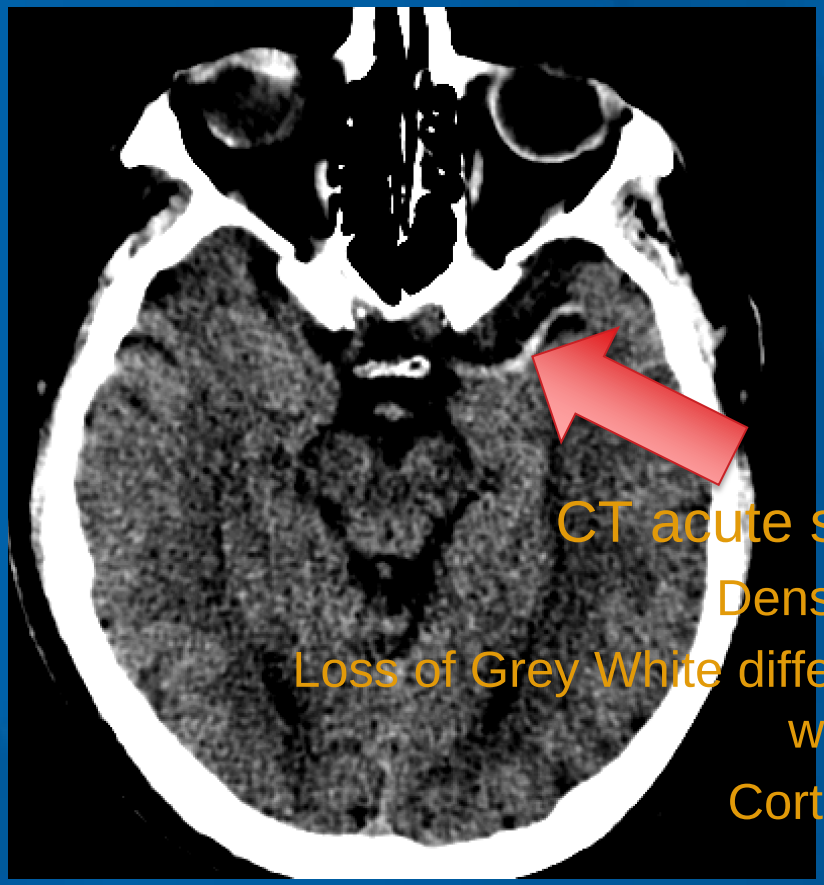
Radiographic Findings

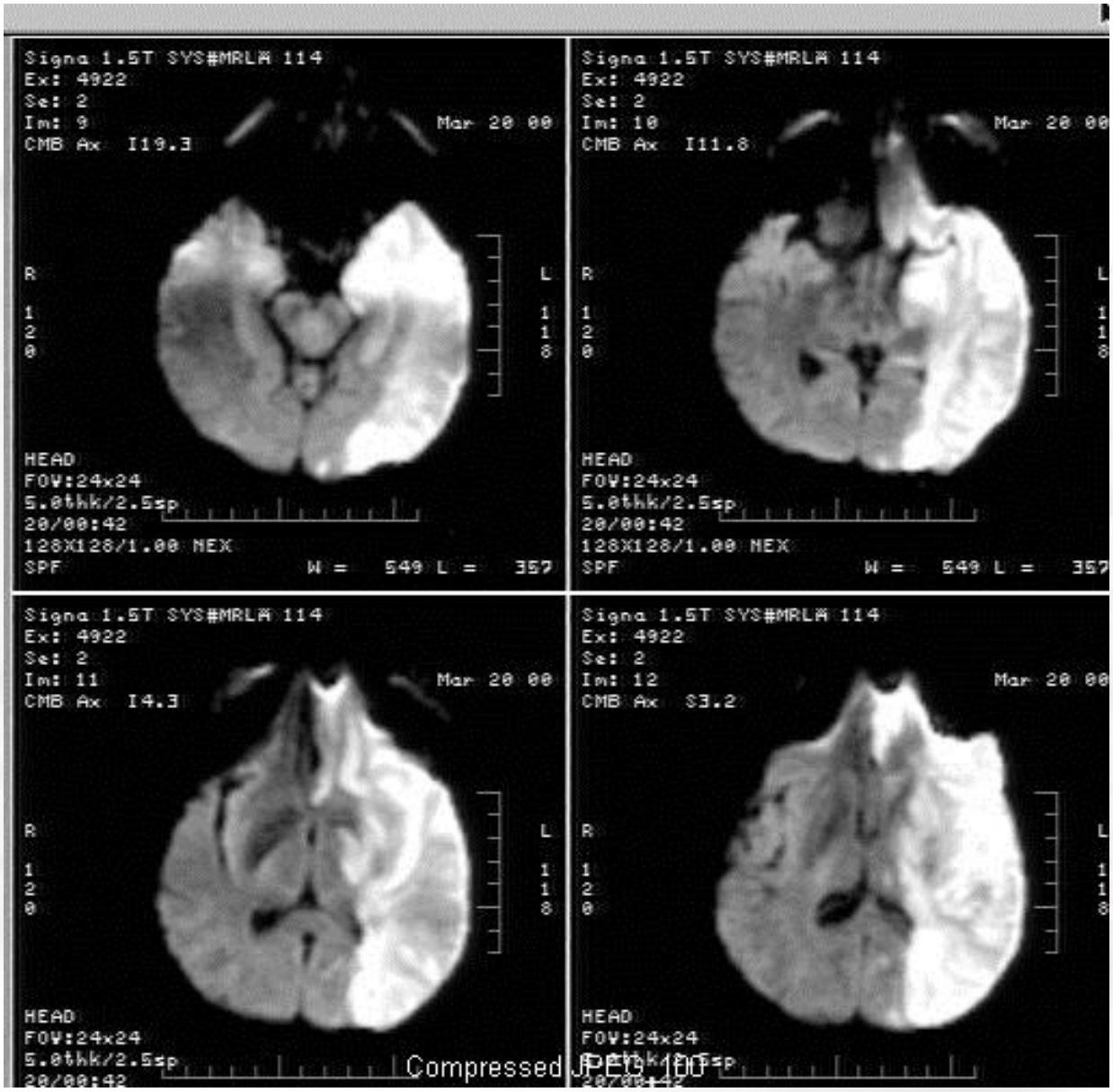


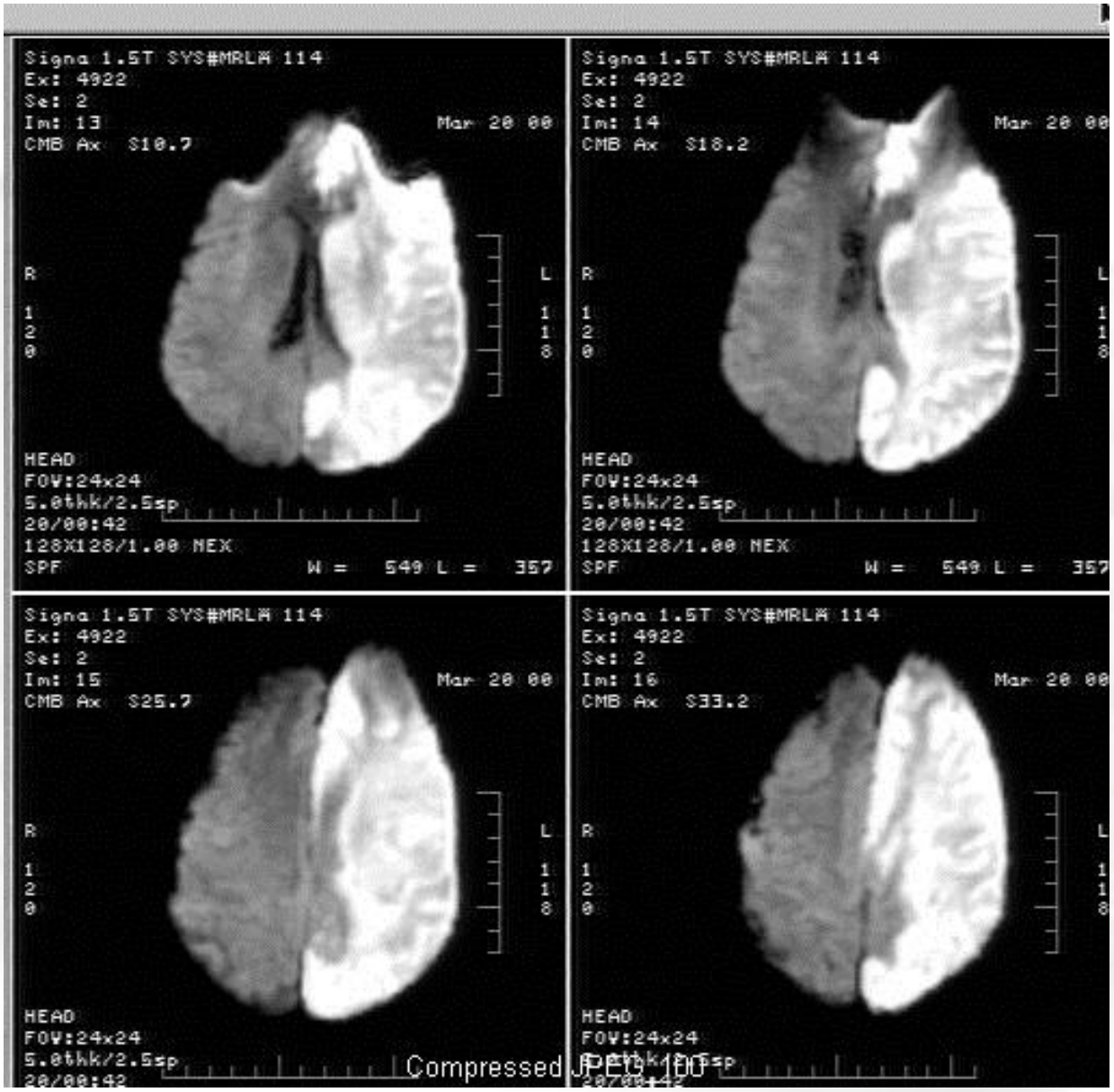
CT acute signs of stroke

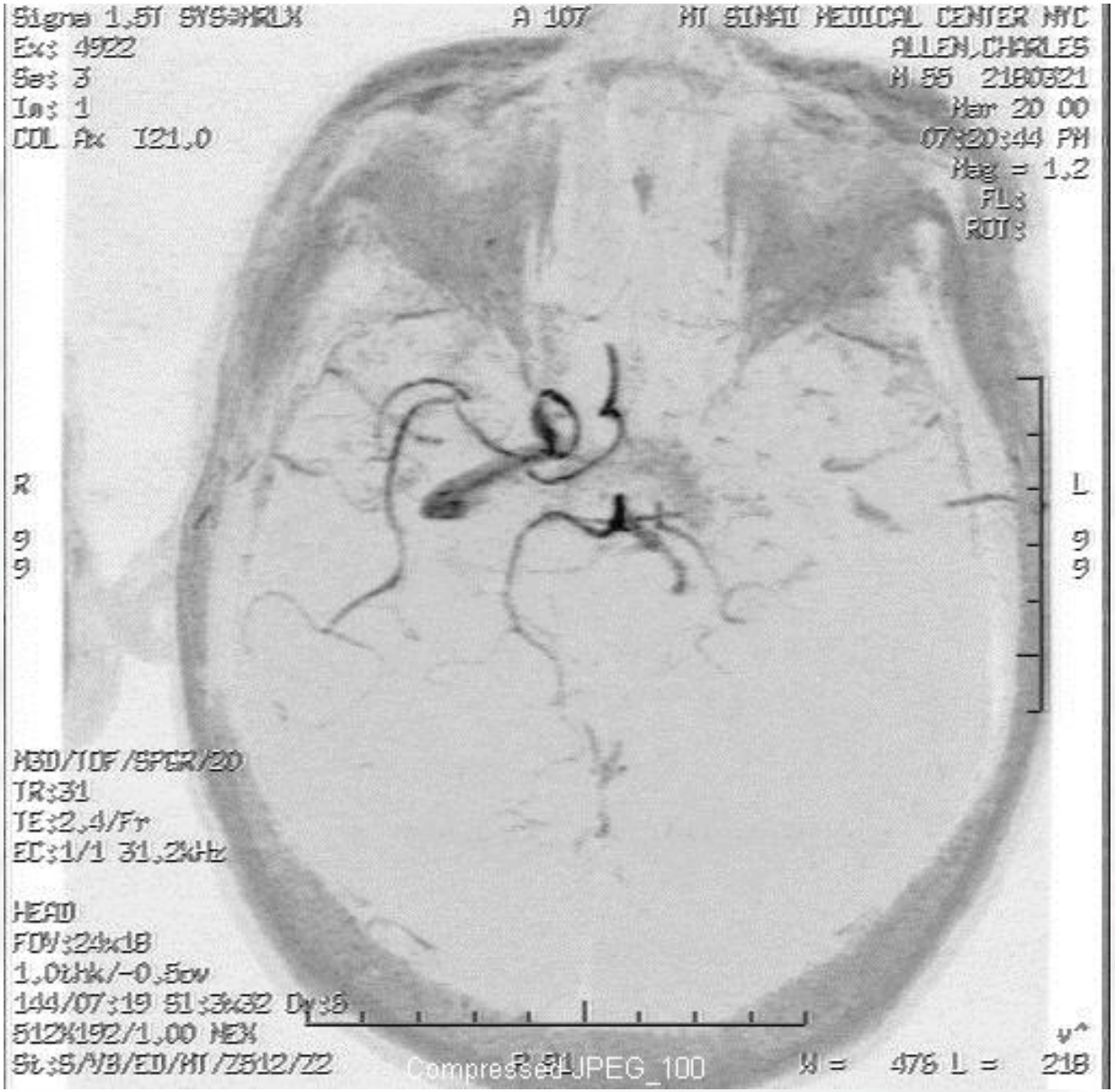
Dense MCA Sign

Loss of Grey White differentiation, particularly on 40/40 window

Cortical swelling



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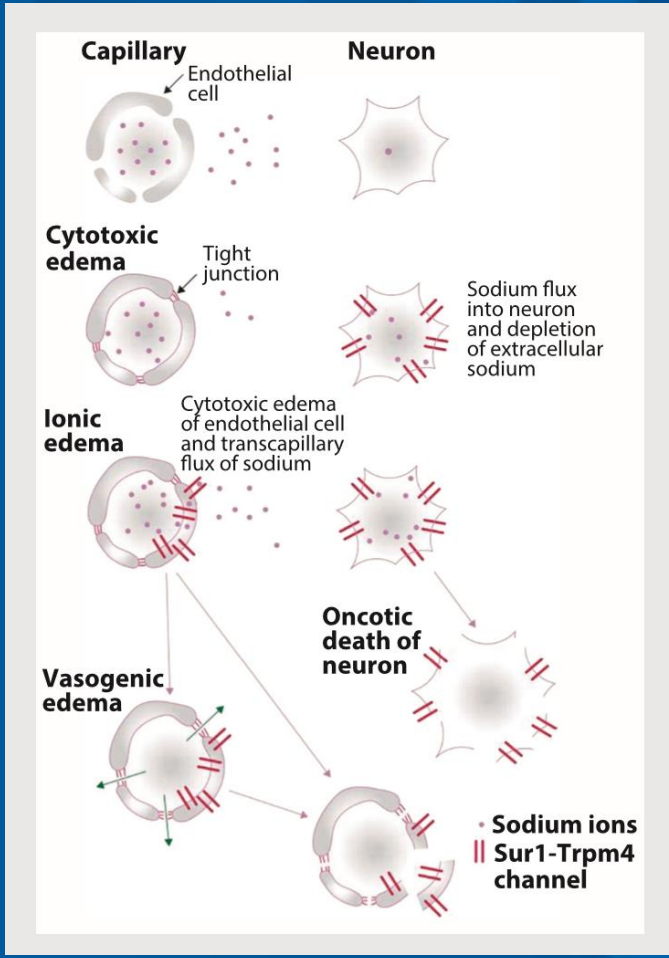
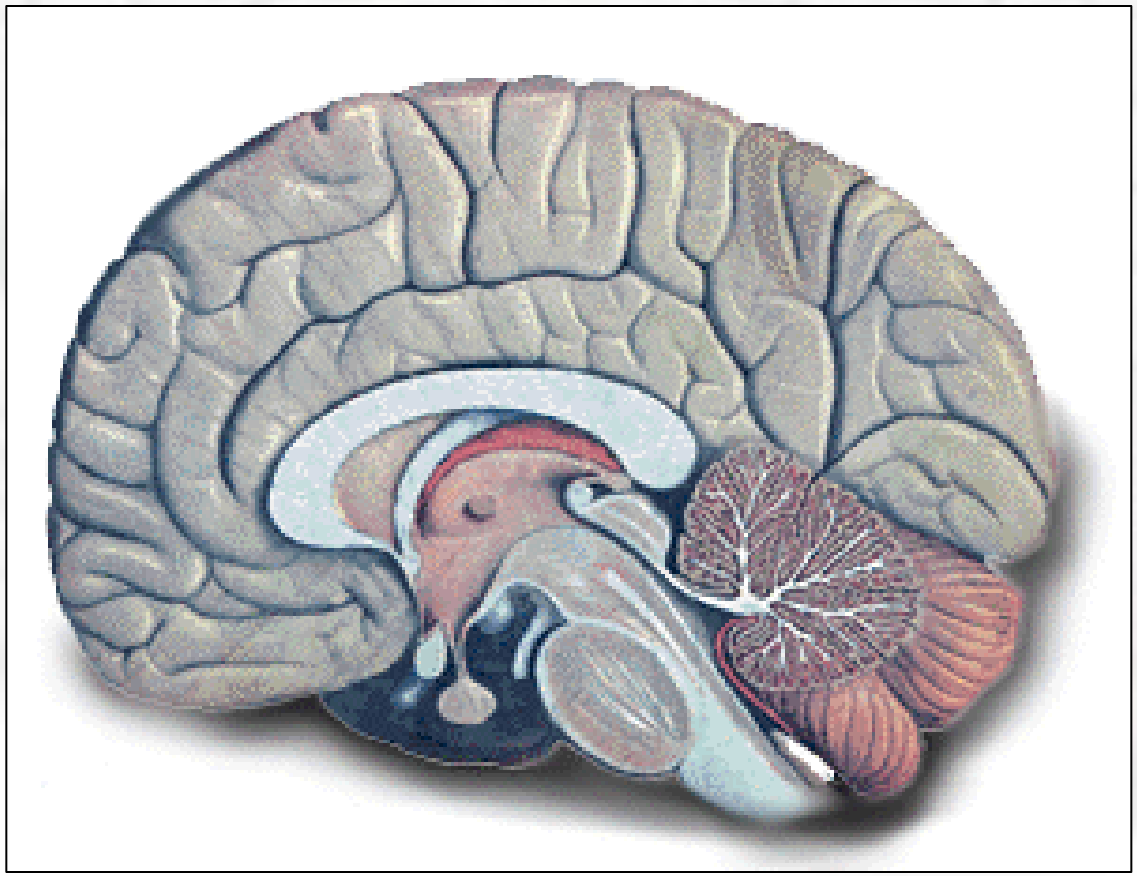
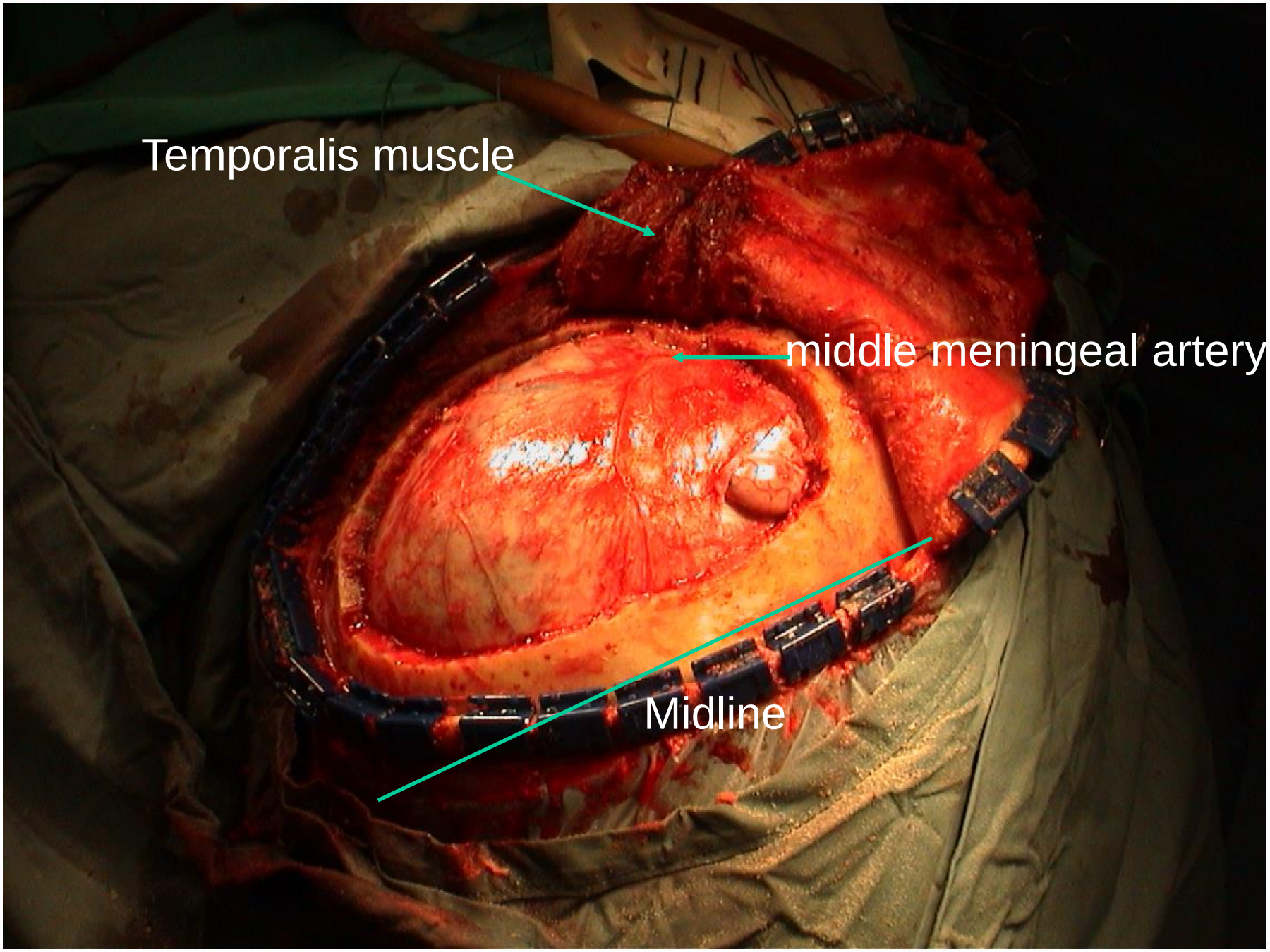
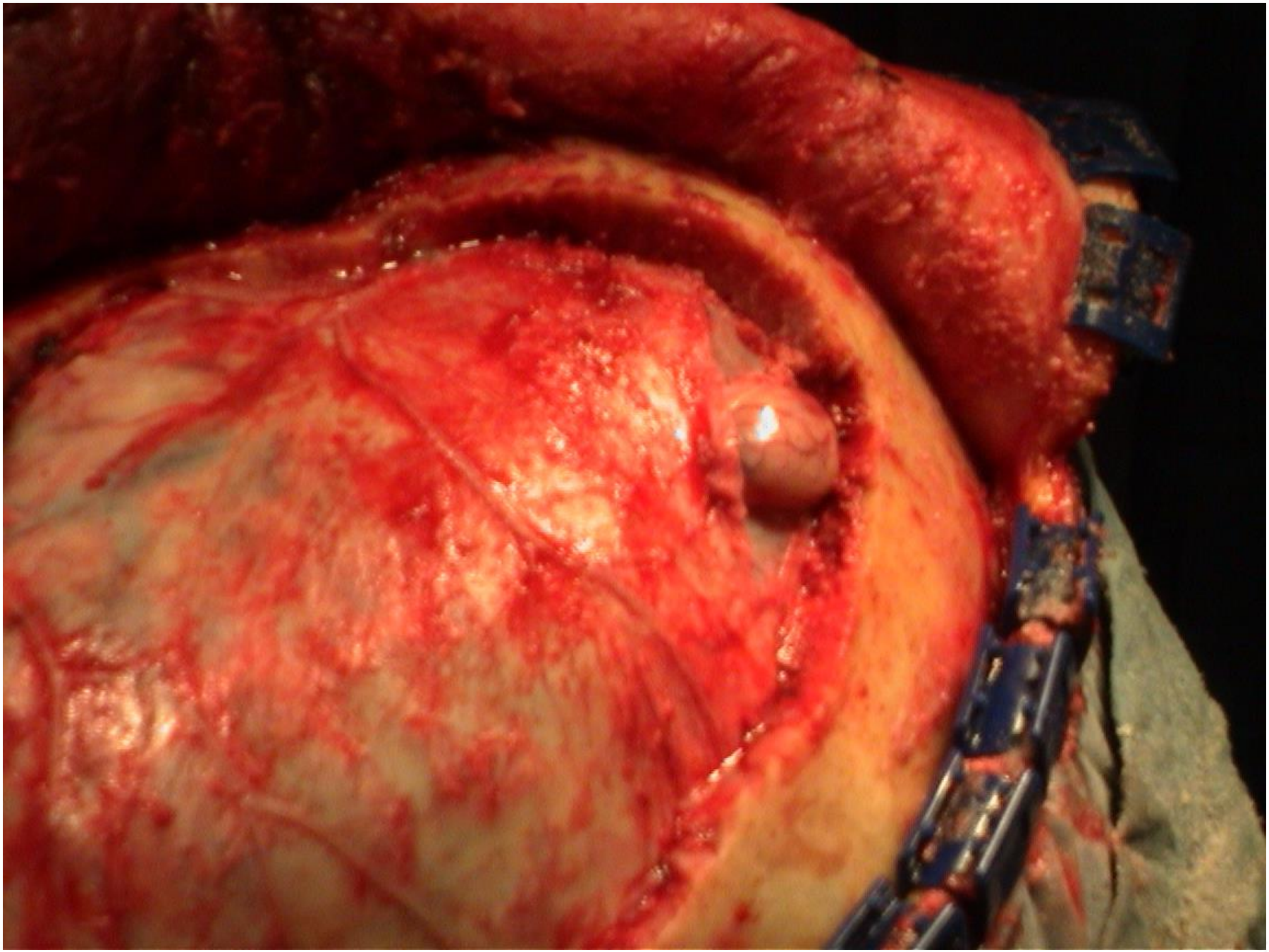
Pathophysiology of Swelling

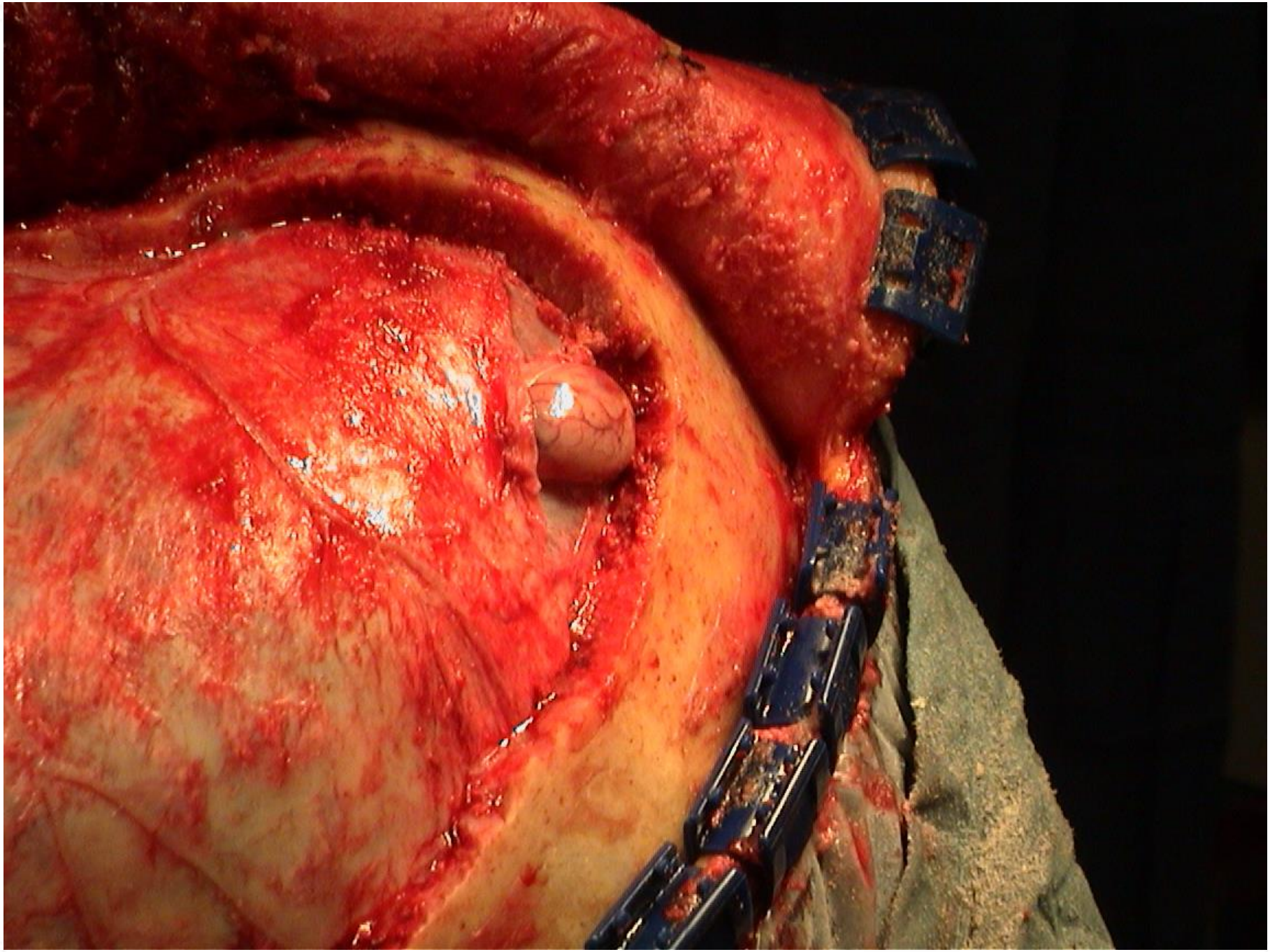


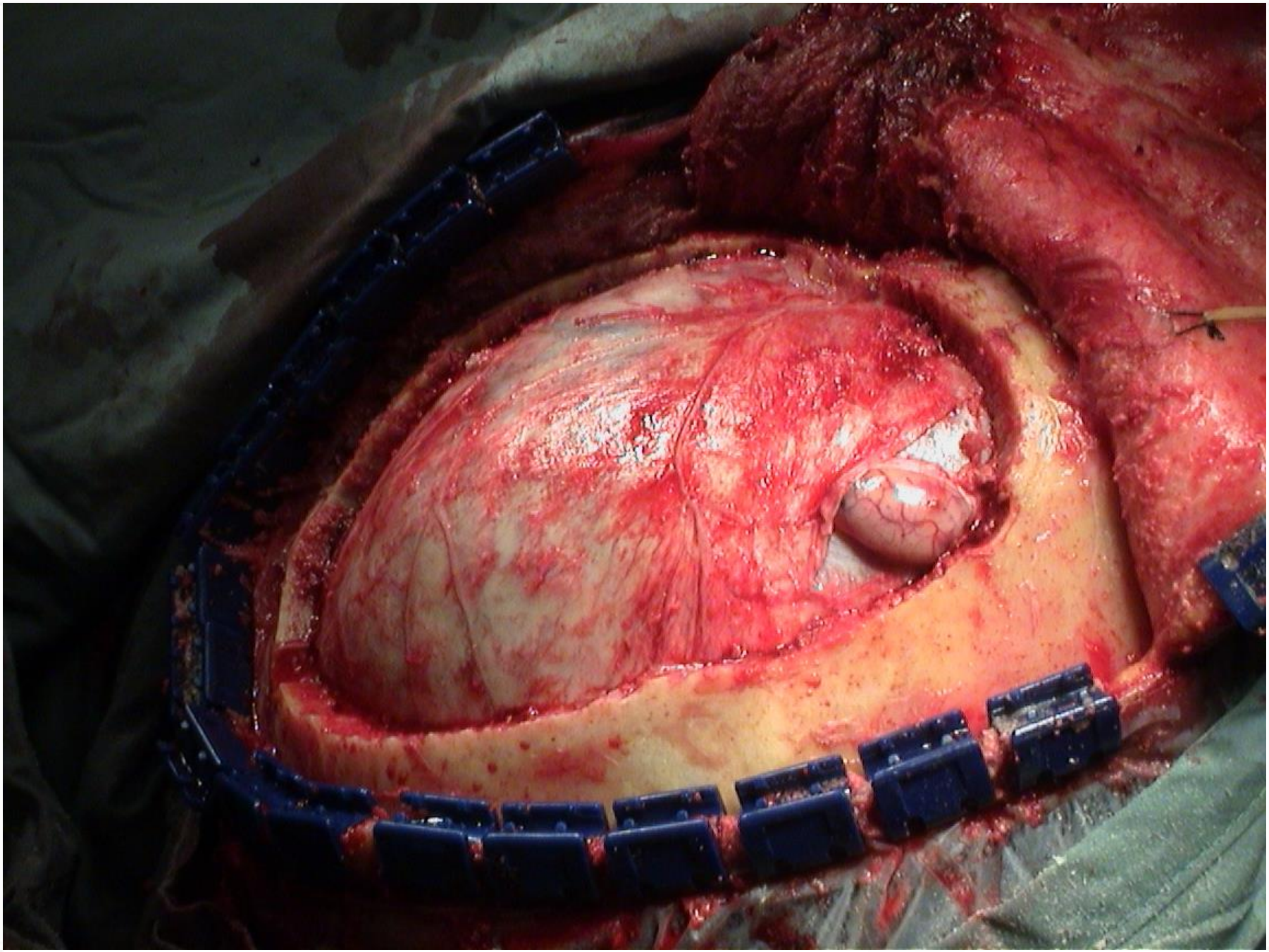
Surgical Treatment of Malignant Infarction

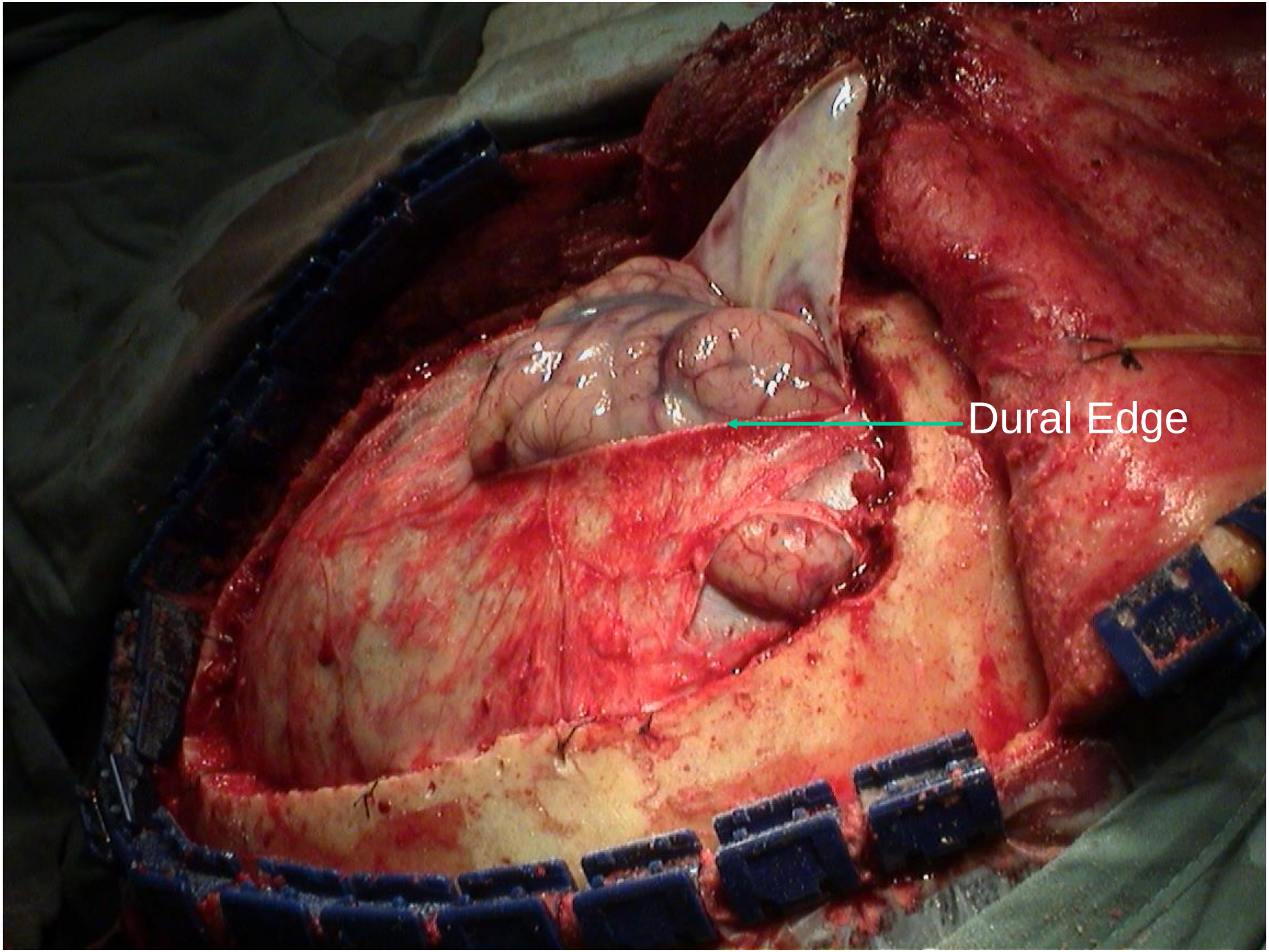


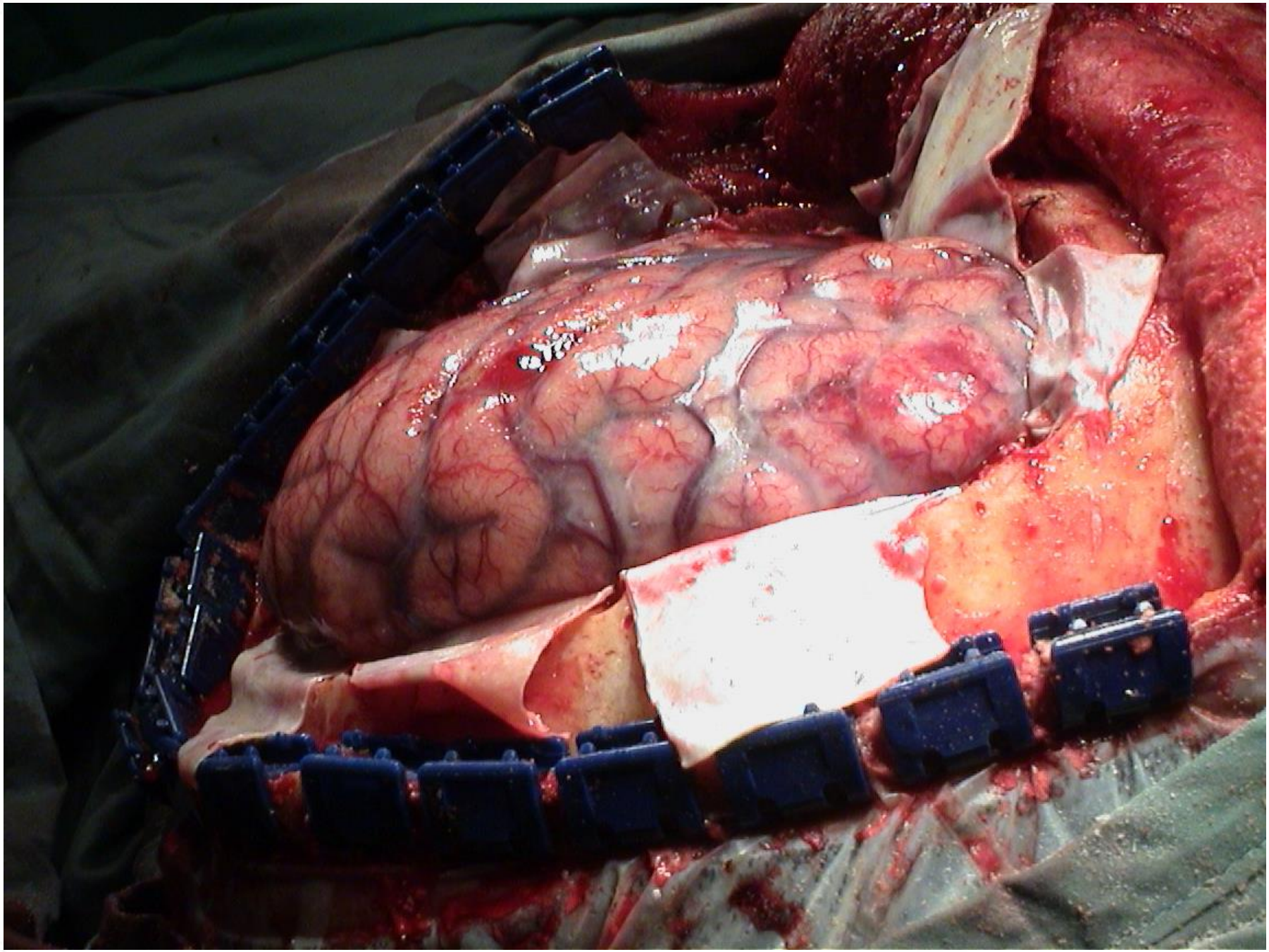

Temporalis muscle
middle meningeal artery
Midline

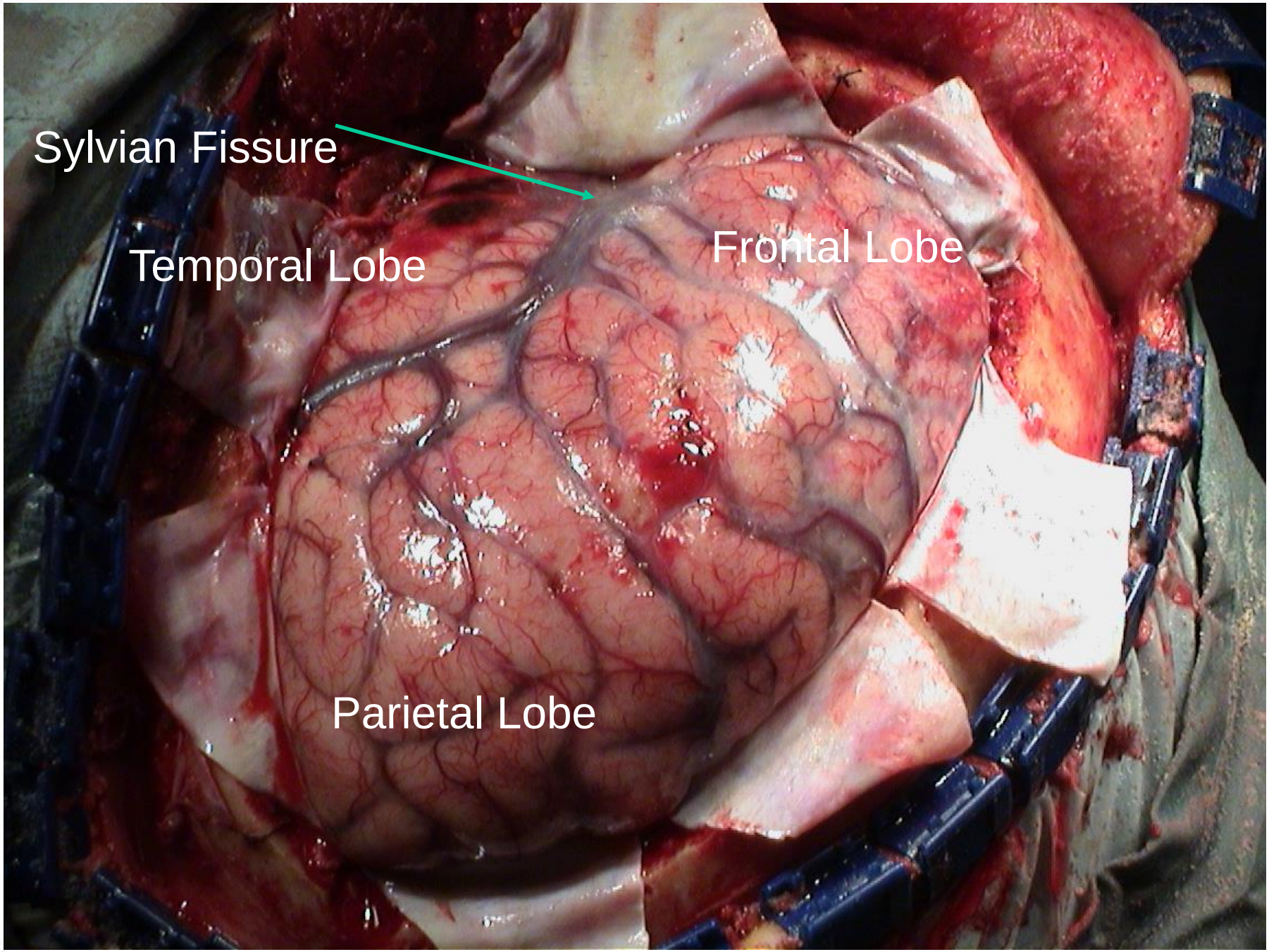


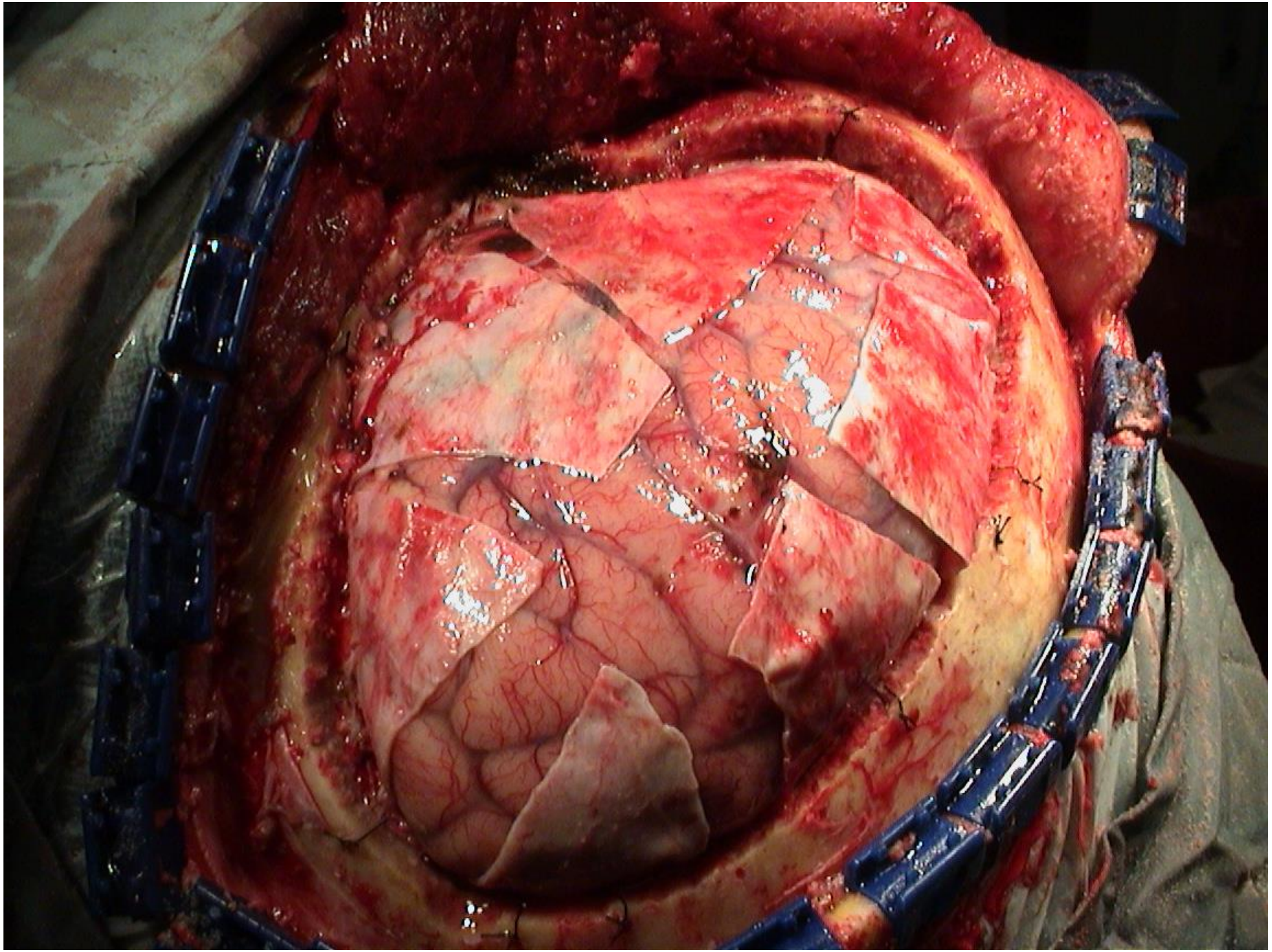





Dural Edge




Sylvian Fissure
Temporal Lobe
Frontal Lobe
Parietal Lobe



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DuraGen™

DURAL GRAFT MATRIX

3 in x 3 in
7.5 cm x 7.5 cm

CAUTION: Federal (U.S.A.) law restricts this device to sale by or on the order of a physician.

ITALIANO
Contenuto: matrice per innesto durale—1 unità
Apirogena
Non risterilizzare

日本語
内容物：硬膜グラフト マトリックス (1ユニット) 非発熱性 再滅菌禁止

NORSK
Innhold: Dural transplantatmatriks—1 stk.
Ikke-pyrogen
Må ikke resteriliseres

PORTUGUÊS
Conteúdo: Matriz de enxerto dural—1 unidade
Não Pirogénica
Não reesterilizar

ESPAÑOL
Contenido: matriz para injerto de dura—1 unidad
No pirógena
No reesterilizar

SVENSKA
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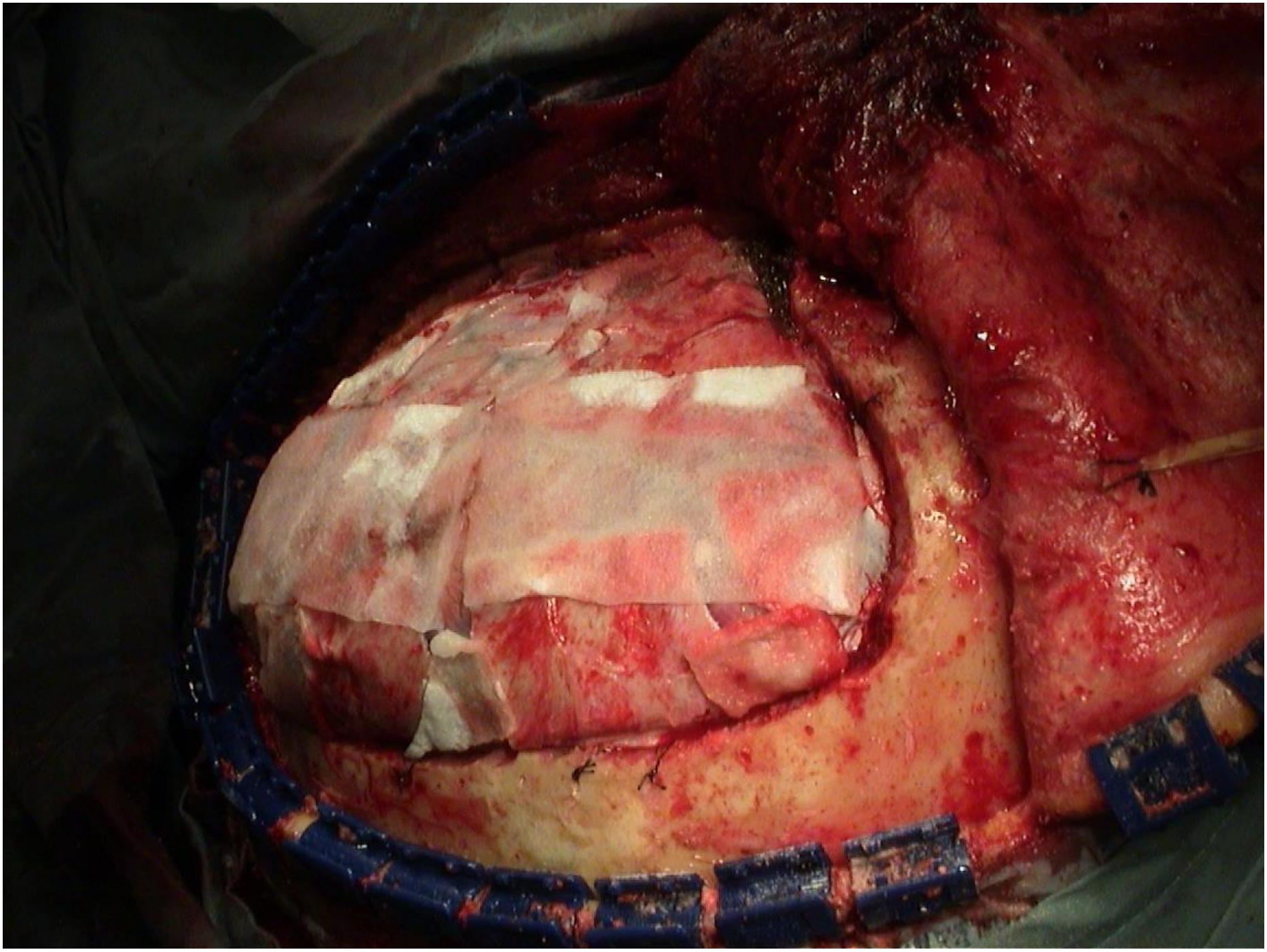
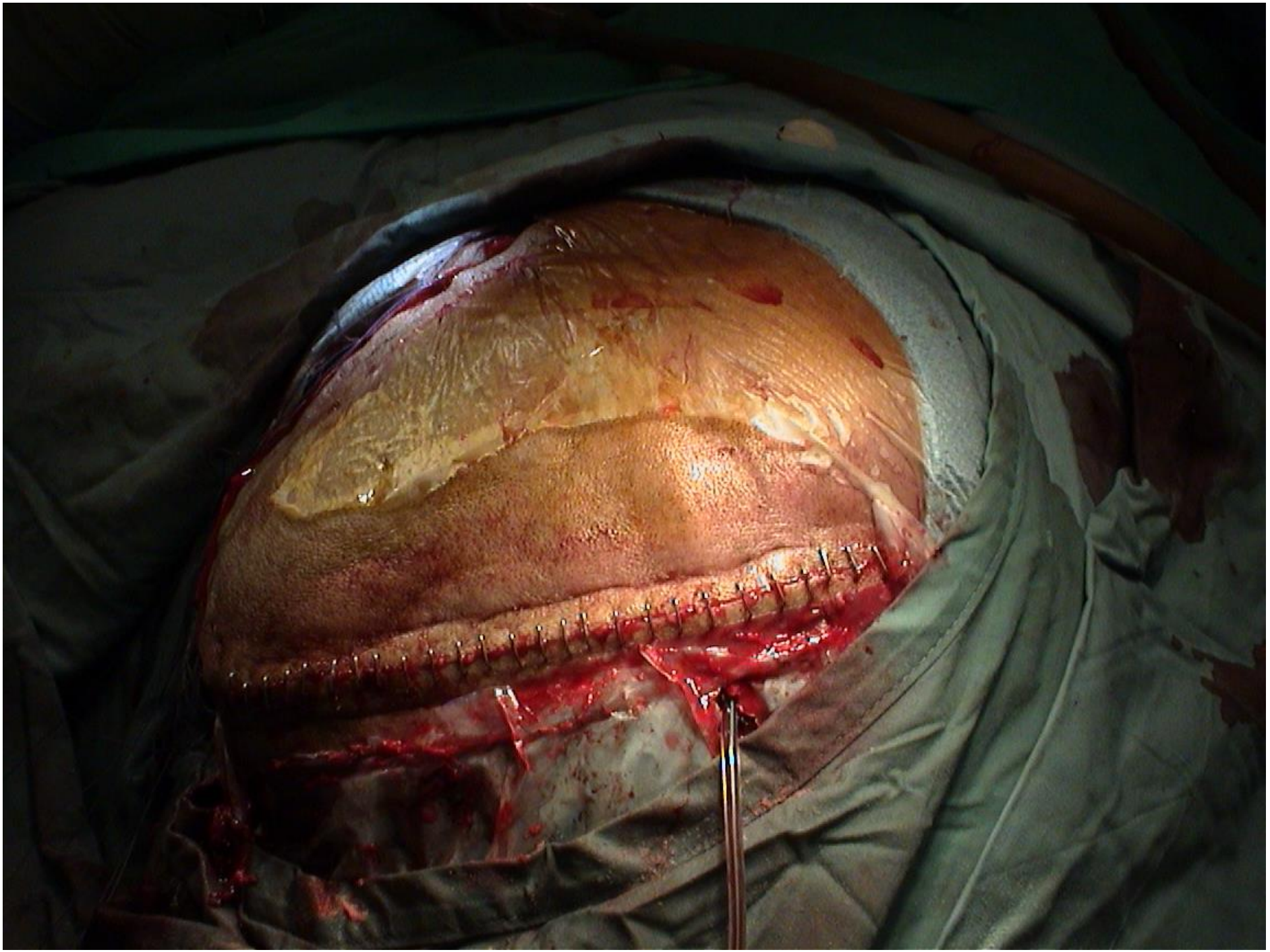
Icke-Pyrogen
Får ej omsteriliseras



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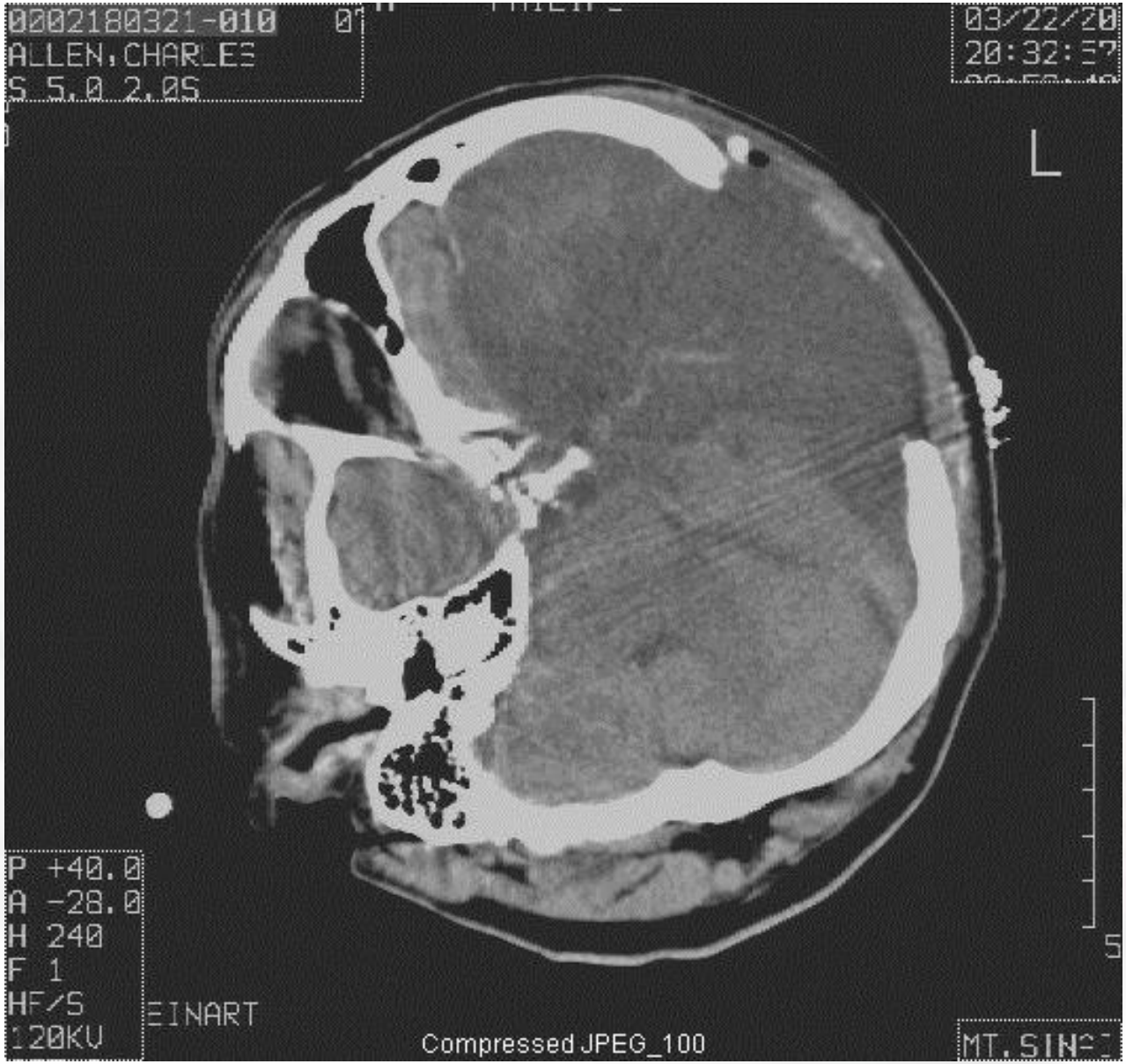
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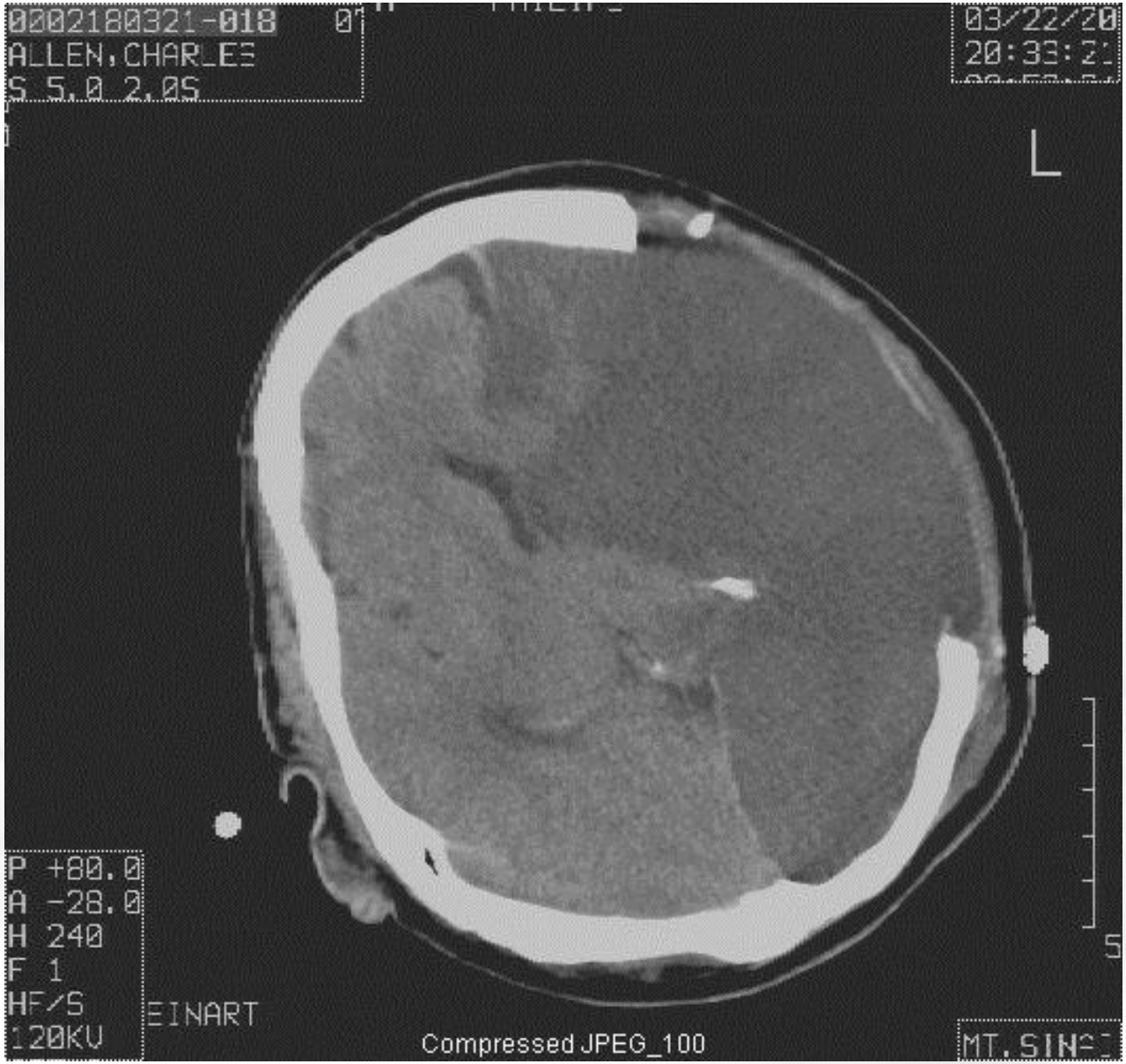
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Lancet Summary

Early decompressive surgery in malignant infarction of the middle cerebral artery: a pooled
Vahedi K[1], Hofmeijer J, Juettler E, Vicaut E, George B, Algra A, Amelink GJ, Schmiedeck
Author information

Abstract
BACKGROUND:
Malignant infarction of the middle cerebral artery (MCA) is associated with an 80% mortalit

Lancet Summary

FINDINGS:
93 patients were included in the pooled analysis. More patients in the decompressive-surg
INTERPRETATION:
In patients with malignant MCA infarction, decompressive surgery undertaken within 48 h

Summary

- DECIMAL: – Surgery improves survival in young MMI patients – Increased number of pat
- • DESTINY: – Early decompressive surgery for MMI reduces mortality – Increased favora
- • HAMLET: – Reduction in fatality – No improvement in functional outcomes
- HeaDDFIRST: – No difference in mortality at 180 days
- DESTINY II: – Increased survival without severe disability in patients >60

Summary

1. Malignant stroke is uncommon up to 10% of all strokes 30% of all MCA strokes

2. Patients do the best with recanalization.
3. Best chance of recanalization with combination of IV tPA and endovascular therapy.

4. Hemicraniectomy may be effective in selected patients
   a. Age is important
   b. Pre Morbid functional life quality is important.
   c. Other medical problems is determinate.
   d. Dominant or non-dominant hemisphere is not important.