

DA-FIX: An Innovative non- contact Chronic Subdural Hematoma Drainage System

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Disclaimer

This talk is about a new device
which I have invented

Is available for commercial use

I & my family members have no
financial/ related interest in the
device commercialisation

Background

Recurrent CSDH is a major global problem with high morbidity and mortality

Some studies have reported a recurrence rate of CSDH after operation of approximately 5 to 33%.



National Institutes of Health (.gov)

<https://pubmed.ncbi.nlm.nih.gov> › ...



Chronic subdural hematomas--causes of morbidity and ...

by R Ramachandran · 2007 · Cited by 306 — The aim of this study was to determine the factors responsible for the morbidity, mortality, and **recurrence** in patients with **chronic subdural...**

Retrospective study published in 2007

647 cases of Chronic SDH treated at NIMHANS

Mortality 5%

Recurrence 21%

Drains were seen to significantly reduce recurrence

'Drains' for preventing recurrence

Subgaleal drain

- Safest, although prone to blocking and suboptimal

Subdural drain

- Not used in most centres due to risk of cortical injury and bleed

What if

We could drain the subdural fluid efficiently

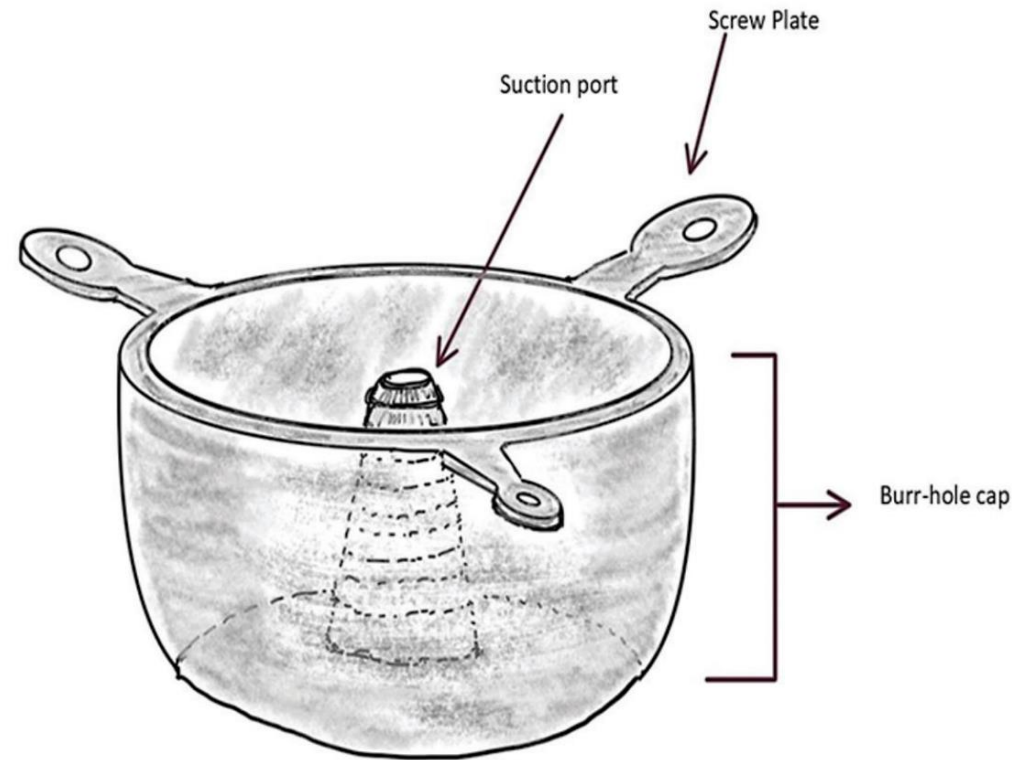
This drainage could be done without risk of damage to underlying cortex and vessels

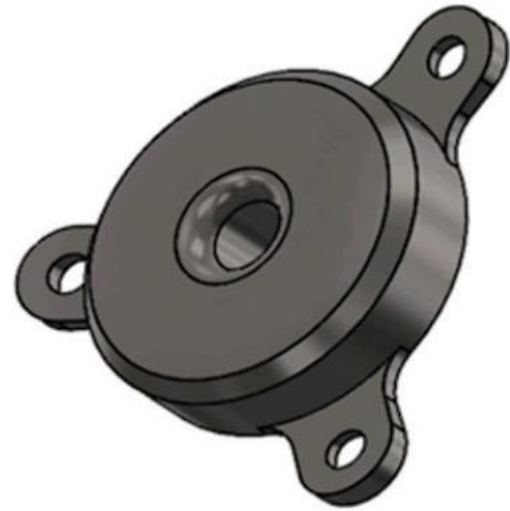
Drainage could be regulated as per ones needs

This all could be done cost-effectively

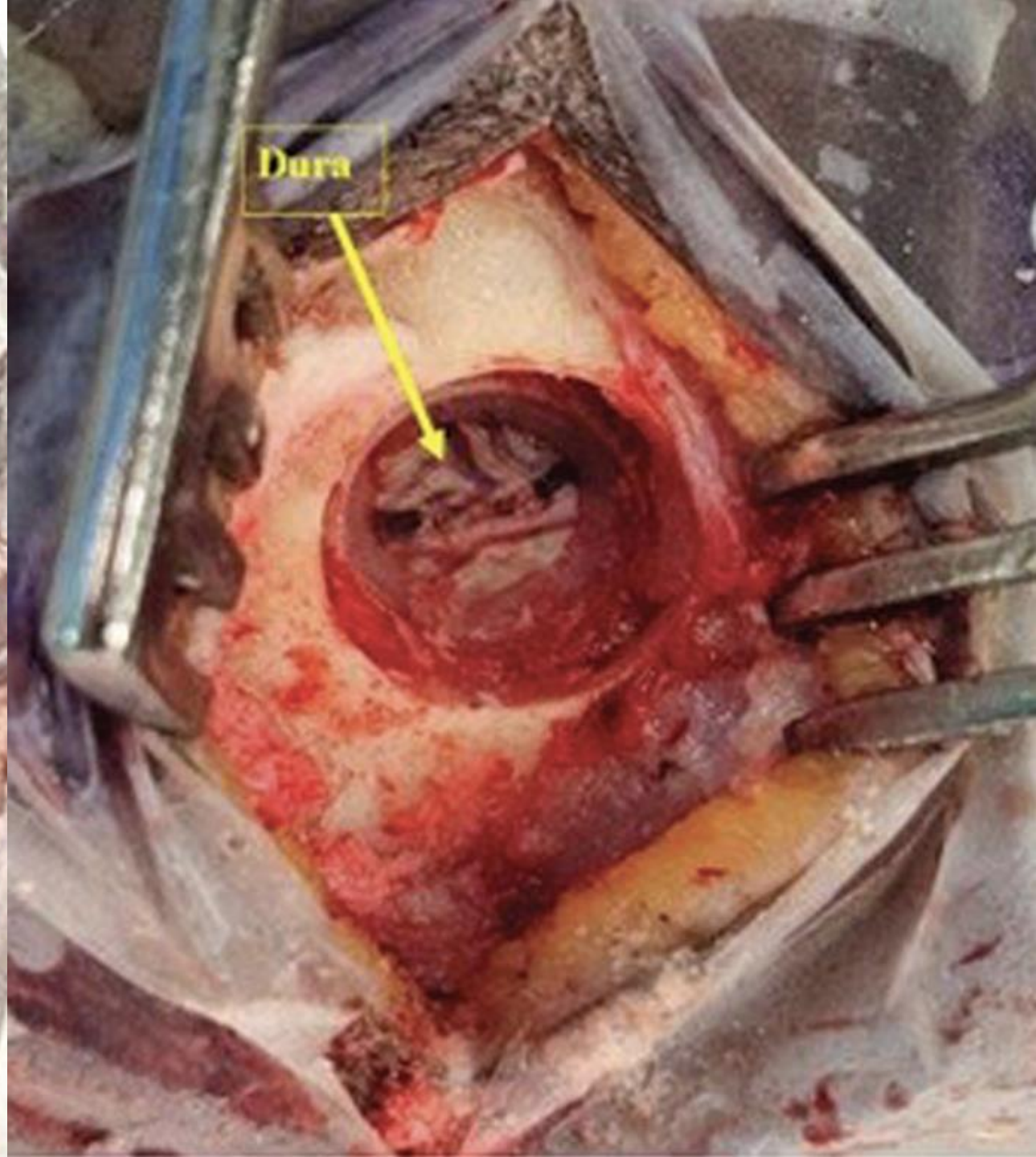
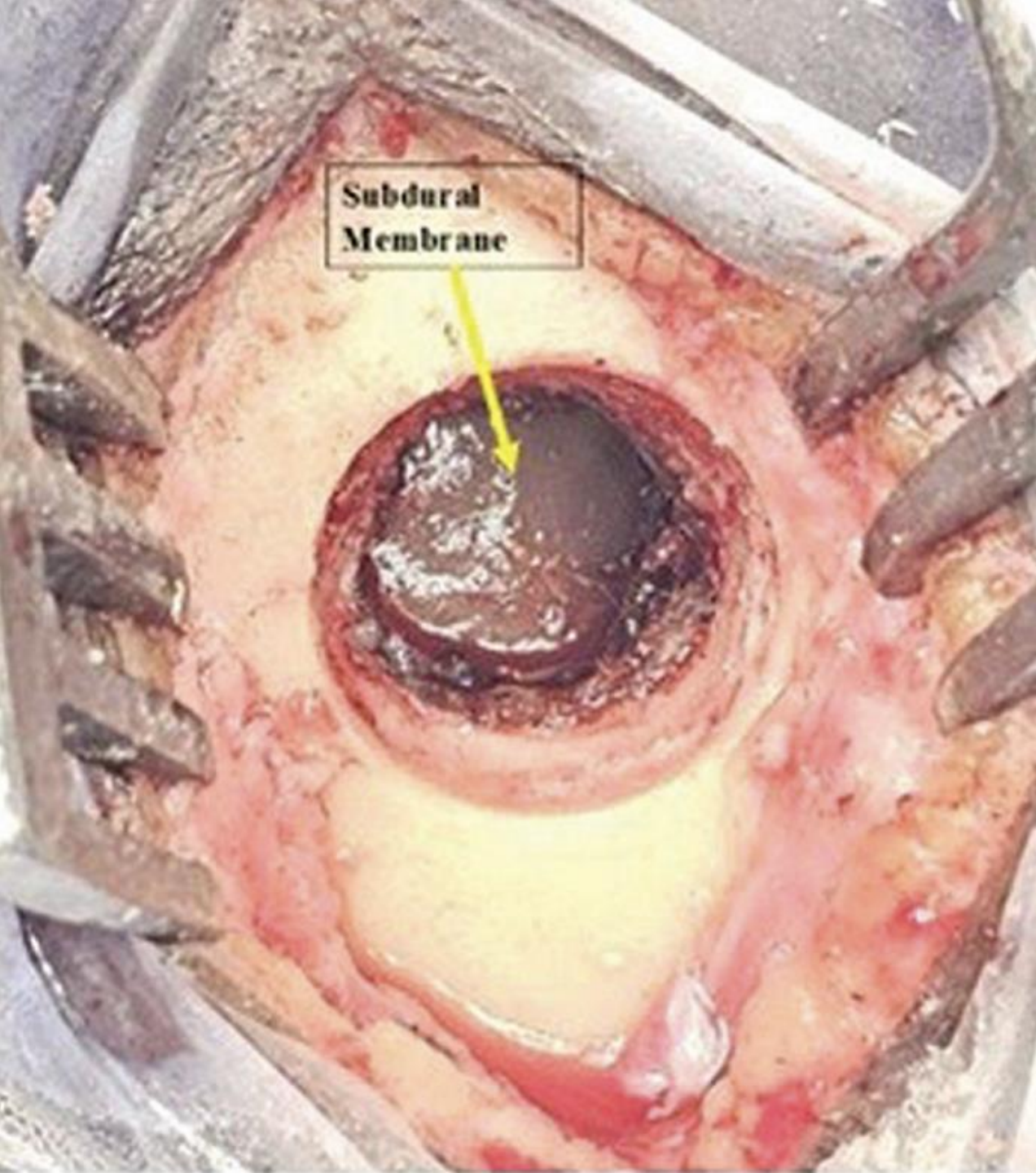
DA-fix

- Novel noncontact, controlled suction
- Integrated into a burr hole cap

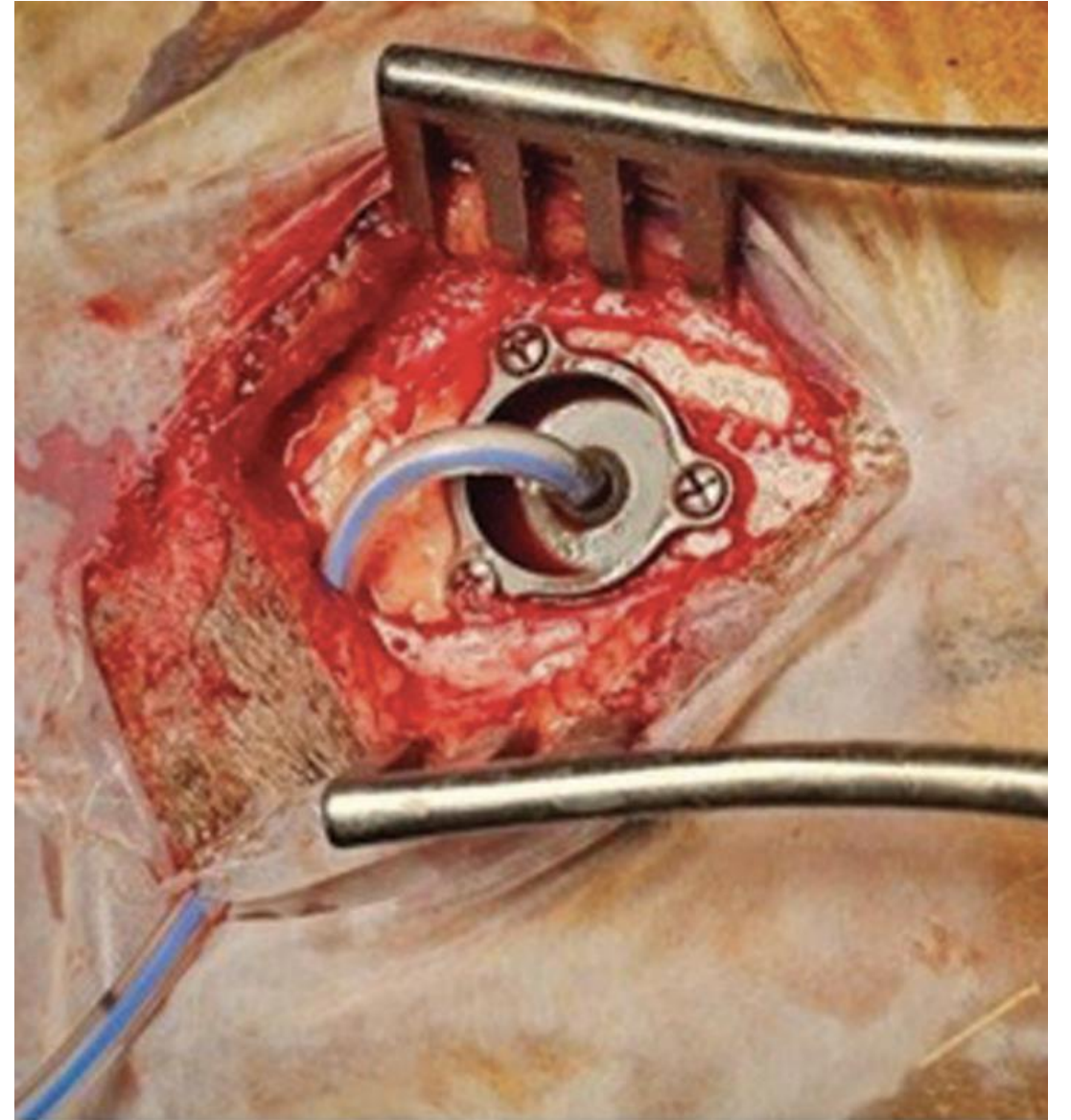
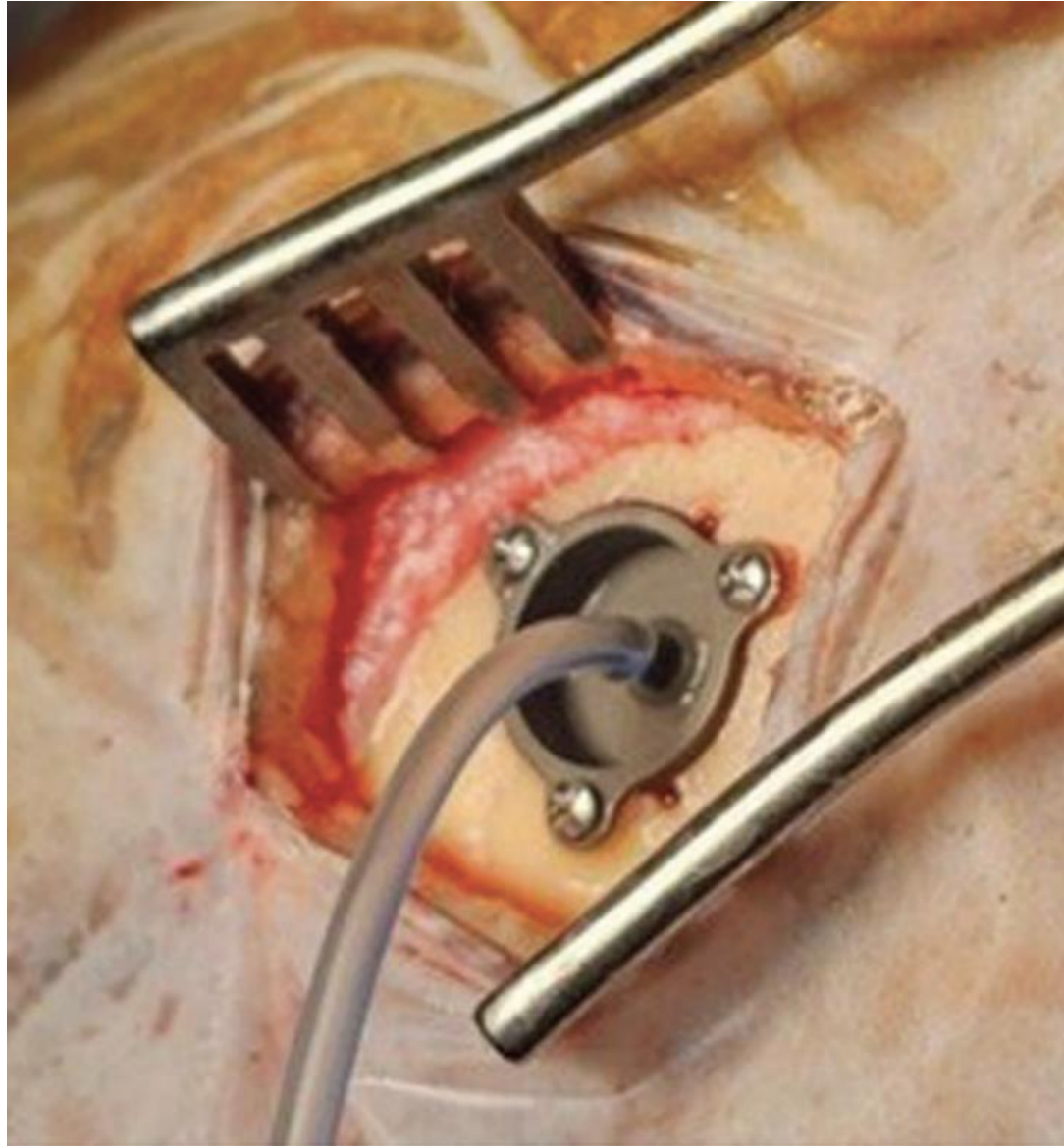








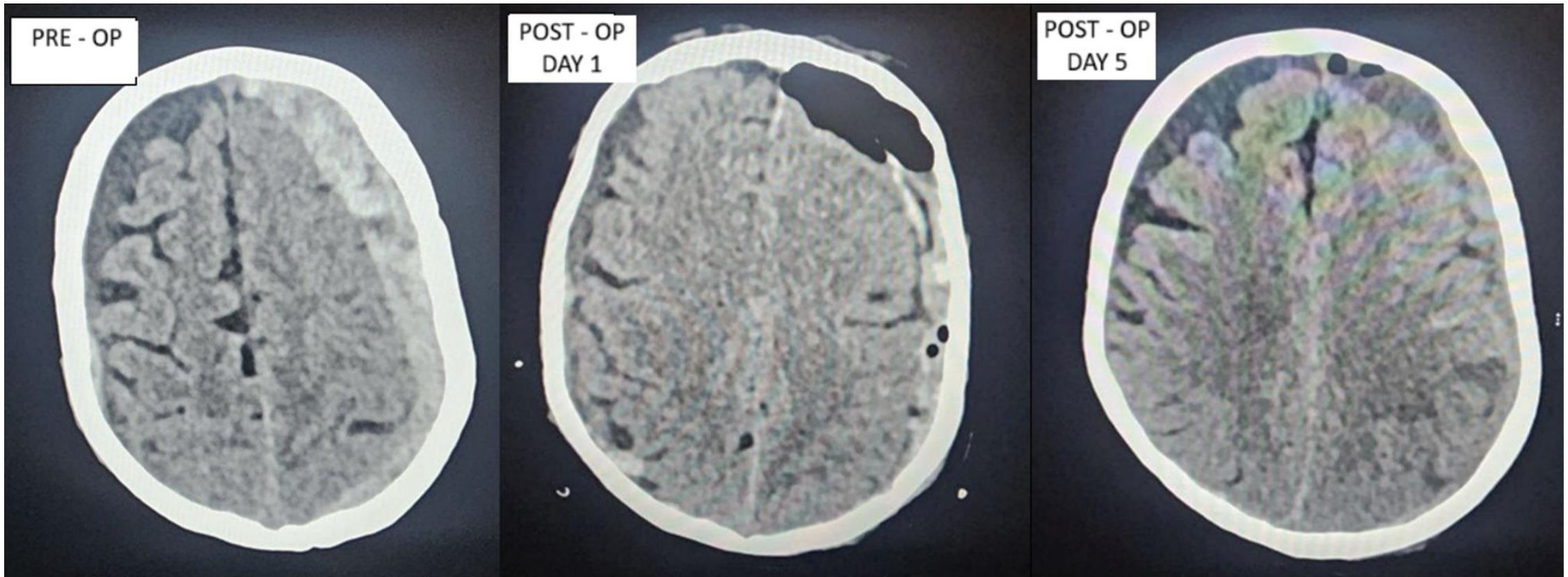






Case 1

- 80-year-old
- KCO CAD with recurrent angina
- On Anticoagulation
- Fall 12 days back
- E2VetM5



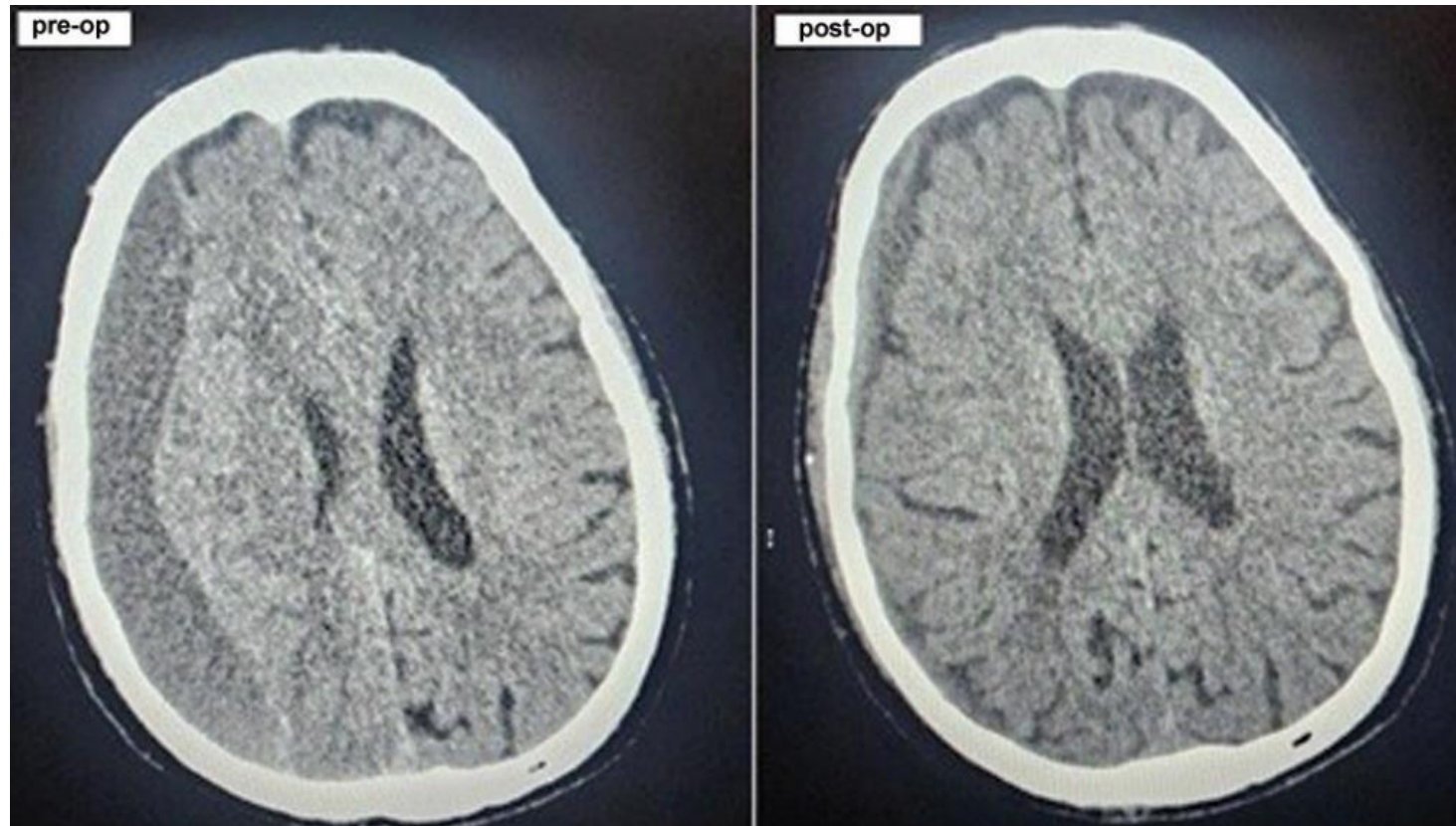
Case 2

- 70-year-old man
- presented with gait disturbance
- Left-side hemiparesis for 1 month.



Case 3

- 80-year-old man
- presented with headache, loss of memory, insomnia,
- Increased frequency of micturition.



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Original Article

“DA-Fix” Drain: An Innovative Noncontact Chronic Subdural Hematoma Drainage System

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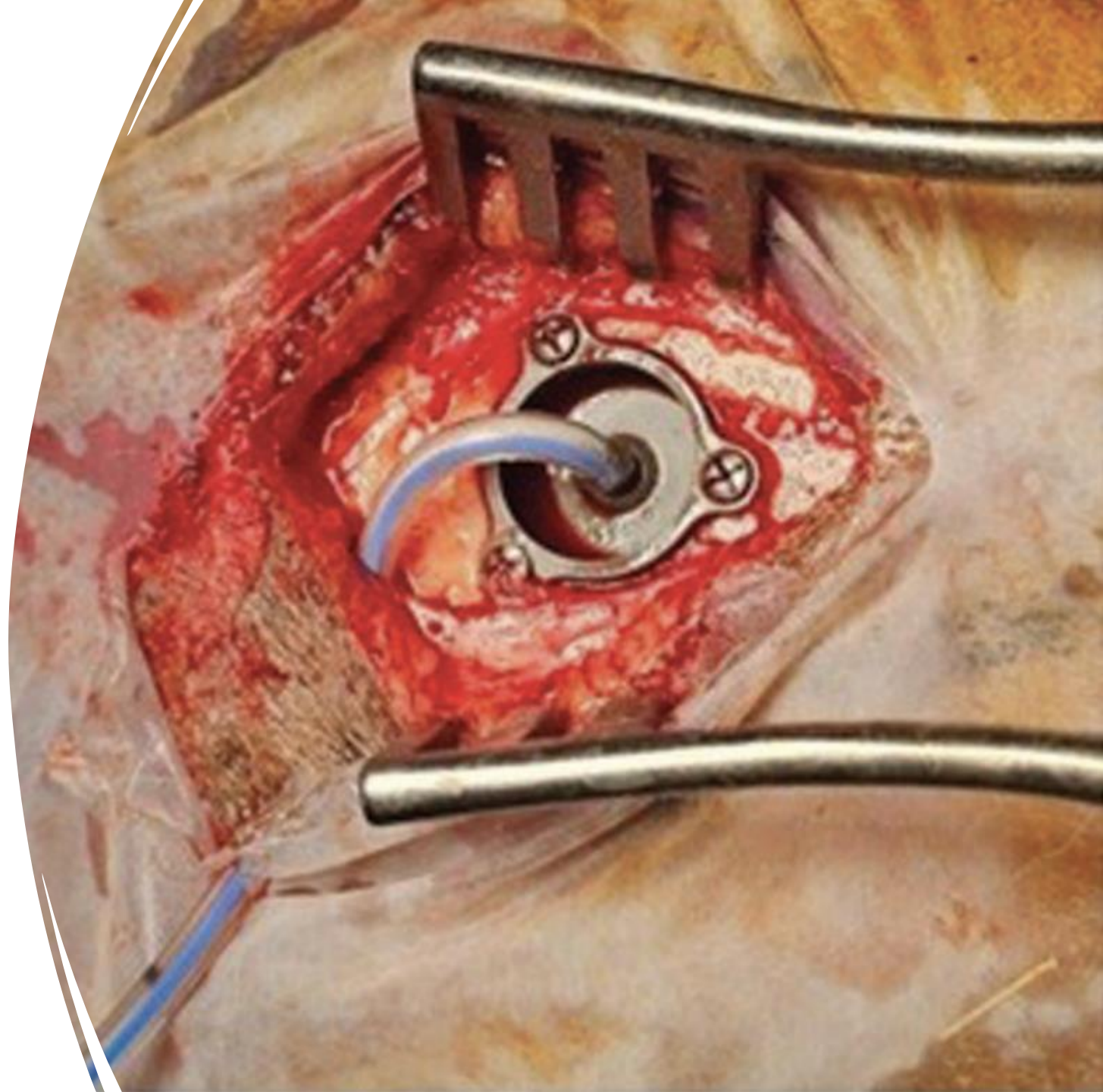
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Indian J Neurotrauma

Limitations

- There is potential for the drain tube to get kinked as it exits form the DA-Fix burr hole cap



Limitations

- No literature on how much negative pressure to apply



Future work

Find out the
'optimal'
negative
pressure

Design
refinements

Conclusions

We describe a novel noncontact, controlled suction integrated into a burr hole cap that has not been tried/designed before.

Our invention provides a safe and efficient way of draining the CDSH with a novel detachable suction attachment.

This invention has the potential to dramatically reduce the recurrence and complication rates of CSDH.



Thank you

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