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# Surgical Outcome of Spontaneous Intracerebral Hemorrhage in Coagulopathic Patients: Endoscopic-assisted Surgery Versus Traditional Craniotomy

Abel Po-Hao Huang MD; Lu-Ting Kuo MD PhD

## Introduction

There is a significantly increased number of intracerebral hemorrhage (ICH) patients that coagulopathic. However, there is no literature in comparing the different ways of surgical treatments in these patients.

## Methods

We retrospectively reviewed the ICH database at our hospital and identified patients who received surgical treatment. Patients with end-stage renal disease, liver cirrhosis, elevated PT/PTT, and patients that are on anti-platelet or anticoagulants were included. We compared the rebleeding rate, morbidity, mortality, and functional outcome between the endoscopic group and the craniotomy group.

## Results

There are totally 58 coagulopathic patients that are surgically treated; 30 received traditional craniotomy and 28 received endoscopic assisted evacuation. The mortality rate was 20.0% (6/30) and the rebleeding rate was 13.3% (4/30) in the craniotomy group. The mortality rate was 10.7% (3/28) and the rebleeding rate was 7.1% (2/28) in the endoscopic assisted group.

## Conclusions

Endoscopic assisted surgery for ICH might result in less rebleeding and decreased mortality compared to open craniotomy.

## Learning Objectives

By the conclusion of this session, participants should be able to:
1) Describe the importance of management of ICH patients with coagulopathy
2) Discuss, in the different surgical treatment modalitys and their pros and cons for these patients
3) Identify an effective treatment that may reduce surgical mortality and rebleeding rate.

## References

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2: Kuo LT, Chen CM, Li CH, Tsai JC, Chiu HC, Liu LC, Tu YK, Huang AP. Early

endoscope-assisted hematoma evacuation in patients with supratentorial intracerebral hemorrhage: case selection, surgical technique, and long-term results. Neurosurg Focus. 2011 Apr;30(4):E9. doi: 10.3171/2011.2.FOCUS10313.

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