

How can we reduce the complications in neurosurgical mission? (Daily Fast Fresh Cadaver Practice Help Us)

Abstract

Background: The aim of this article is not to highlight the importance of the advantages of cadaver practice which is fundamental, but to emphasize 3 crucial points. The practice should be: Daily, fast (60-80 min), on fresh cadaver (died within 48 hours, continuous venous bleeding present, life like plasticity). Because of development of medical diagnostic procedures in the past half century, unfortunately autopsy disappeared, it has become unnecessary. Fresh (died within 48 hours) cadaver dissection relatively rare in daily practice. Our original aim was to reduce the complication rate in very difficult neurosurgical cases. During our work we recognized the extreme advantages of fast daily fresh cadaver practice; we participated on neurosurgical mission, because of poor medical circumstances where we ought to operate on the same level like in developed world.

Method: In the past 5 years we have introduced; daily fast fresh cadaver dissections for practicing.

Results: Considering the whole time interval operative complications for practicing intern and specialist neurosurgeons have radically decreased as we could successfully perform difficult microsurgery in neurosurgical mission as well.

Conclusion: Implementing daily fresh cadaver sessions in a profession where the helpfulness of assisting surgeons is limited would be crucial. Practice on patients is being done currently, is not optimal. "Learning curve" is a "politically correct" expression, but at what cost? A lot of complications behind it. During neurosurgical missions it is impossible to solve neurosurgical difficulties without the highest level of surgical skills.

Keywords: fresh cadaver dissection, neurosurgical mission, practical education

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Introduction

"Hic locus est ubi mors gaudet, succurere vitae" "This is the place where death comes joyfully to aid life" (Gerlei F. pathologist)

Because of solidarity a lot of neurosurgeons organize or participate in neurosurgical missions in underdeveloped countries. The situations always are unimaginably difficult (Figure 1). None of them are mid-qualified microsurgeon with relatively low number of difficult case experience. They are in the course of learning curve where the complications not rare. During missions we often faced with difficult cases (Figure 1), lacking the equipment used regularly in developed country in Europe or US, Canada etc. How can we improve our skills radically?

High level of microsurgery or endoscopic surgery requires virtuosity, which could not be learnt perfectly by assisting because it is mostly an operation requiring one doctor, where the pupils are observing the masters. Practicing on fresh cadavers dates back to hundreds of years. Hundreds of professional articles demonstrate the importance of cadaver practice,¹⁻¹⁴ cadaver courses are available all over the world, clinics always are equipped practical anatomic labs, where weekly, monthly practice can be organized. From our experience, in the thousands of regional centers, where the anatomical education is not accessible nor pathology neither forensic study are available.

Considering that, in the developed world, autopsy practically disappeared, the number of cadaver dissections reduced, these type of daily training cannot be performed. As daily practice is indispensable for example in sport.

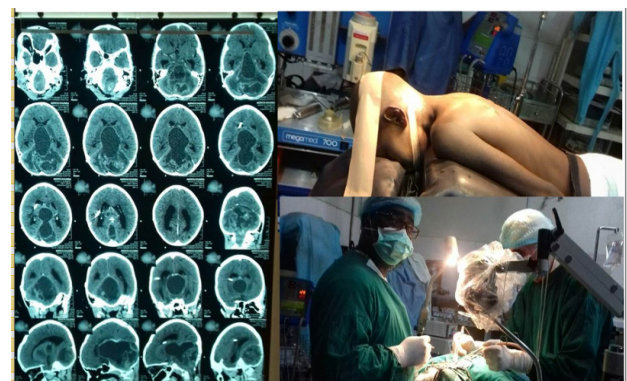


Figure 1 Illustrative case

Successful removal of cerebellar tumor. (GOS 5) No financial background for post op. ct, only if the patient has life threatening complications. The operative microscope is very simple as the lighting conditions as well.

Methods

To order a standard autopsy for educational purposes, it is possible in a lot of developed countries, without the consent of relatives, like in case of organ donations in case of brain death. There is a possibility, which could bring a great development to microsurgical sciences, instead of practicing on living patients, which is covered by 'politically correct' expression 'learning curve'. In reality, behind this statements there are a lot of human tragedies, severe complications.

We have to highlight that complications are not the results of malpractice, but possible complications are acknowledged by the patients and doctors prior treatment. Obviously, daily training is necessary as it is for sport champions or virtuoso pianists, violinists. It seems to be straightforward, but why has not it become part of daily practice routine? Why are not we capable of performing autopsy on a daily basis. Performers do not practice at competitions or performances, they do not test their new creative ideas on the spot when competing.

Results

We gained meaningful results in the field of practical education and sciences. Most importantly, the quality of daily neurosurgical care increased dramatically. Benefits were experienced in neurosurgical missions in Africa (3 times 2 weeks long mission) where the circumstances were very poor. Under poor working condition our practice should be automatic even if the pathology is challenging. Our mental and physical capacity is needed for defeating the poor conditions many creative options should be used during the operations.

Conclusion

We have been doing this project for 15 years, (first author) firstly 2-3 times / week and 5 years ago I switched to practicing on a daily basis. We modelize the most demanding intraoperative situations every day, creating artificial complications on vessels and repairing by microvascular sutures, in the deep on the skull base. Daily fresh cadaver practice during the neurosurgical missions also beneficial where the professional circumstances are very limited. Neurosurgeons from developed country need to help for underdeveloped world. We need a change in practical education by every day practicing.

Acknowledgments

We apply the contemplative Jesus prayers in the course of fresh cadaver practicing and living operations as the one of the sources of neurosurgical innovations in mission. It is personal experience of first author.



Image Contemplative Jesus prayer important during the mission in OR.

Conflicts of interest

The authors declare no conflicts of interest.

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