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Reduced Surgical Invasiveness To The Paraspinal Muscle In Minimal Invasive Spine Surgery

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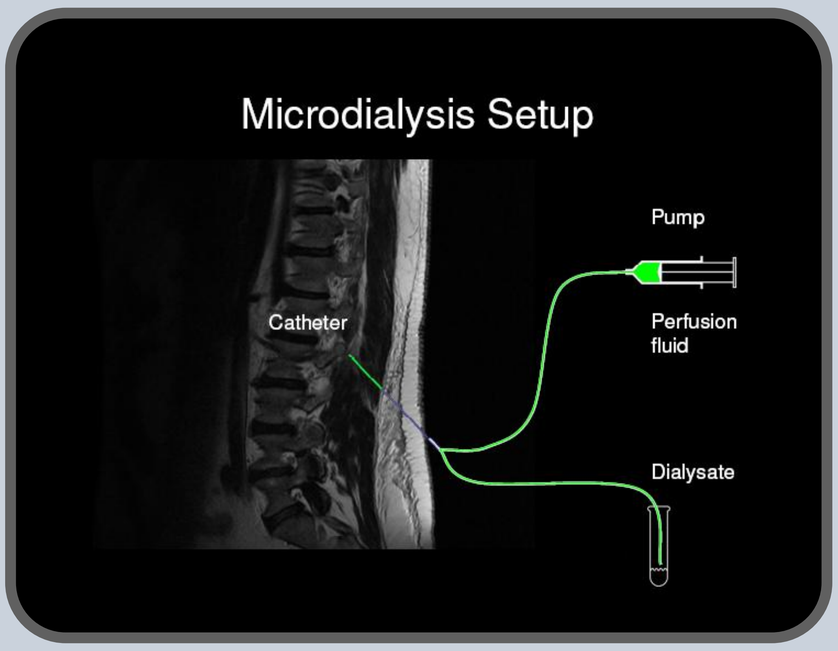
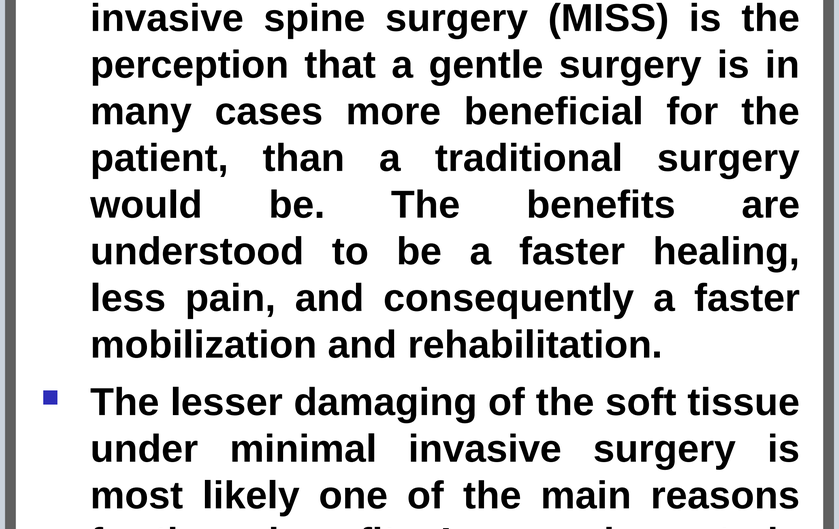
INTRODUCTION

- **The reasoning for performing minimal invasive spine surgery (MISS) is the perception that a gentle surgery is in many cases more beneficial for the patient, than a traditional surgery would be. The benefits are understood to be a faster healing, less pain, and consequently a faster mobilization and rehabilitation.**
- **The lesser damaging of the soft tissue under minimal invasive surgery is most likely one of the main reasons for these benefits. In a previous study we have proven glycerol concentration changes in the paraspinal muscle to be related to the extension of exposure.**



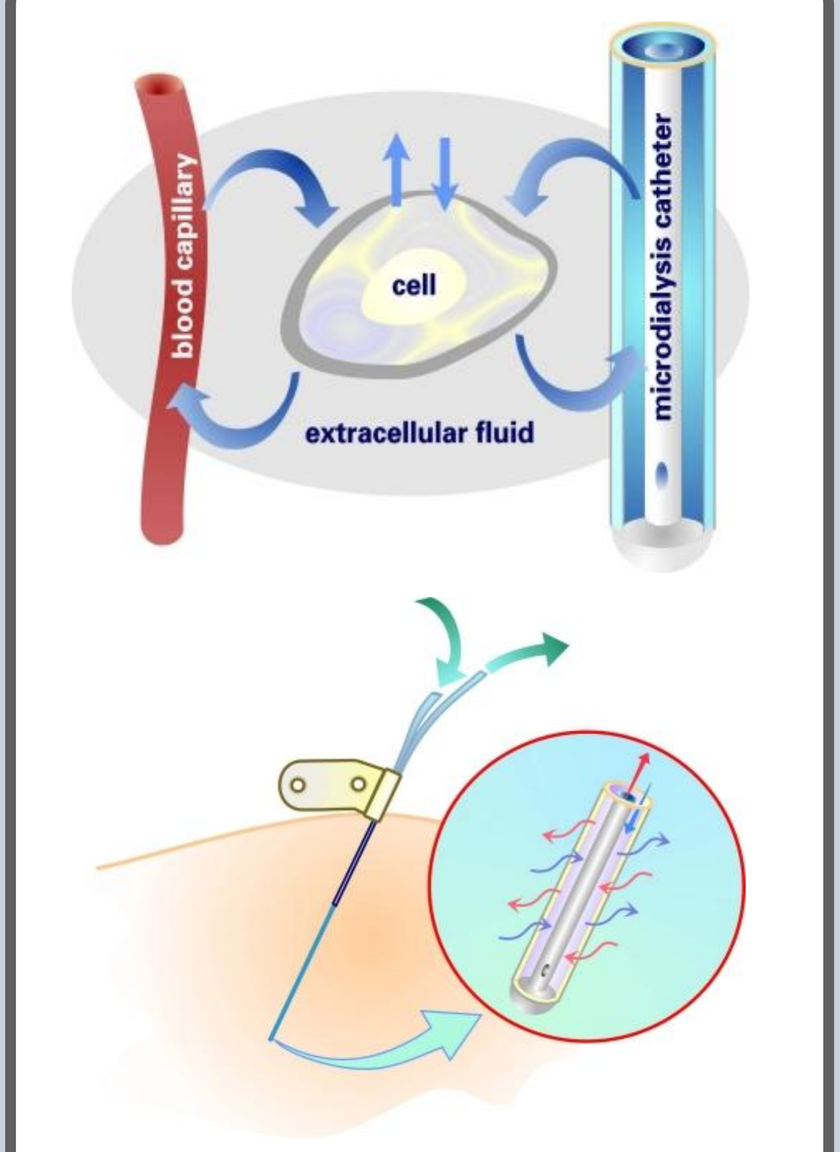


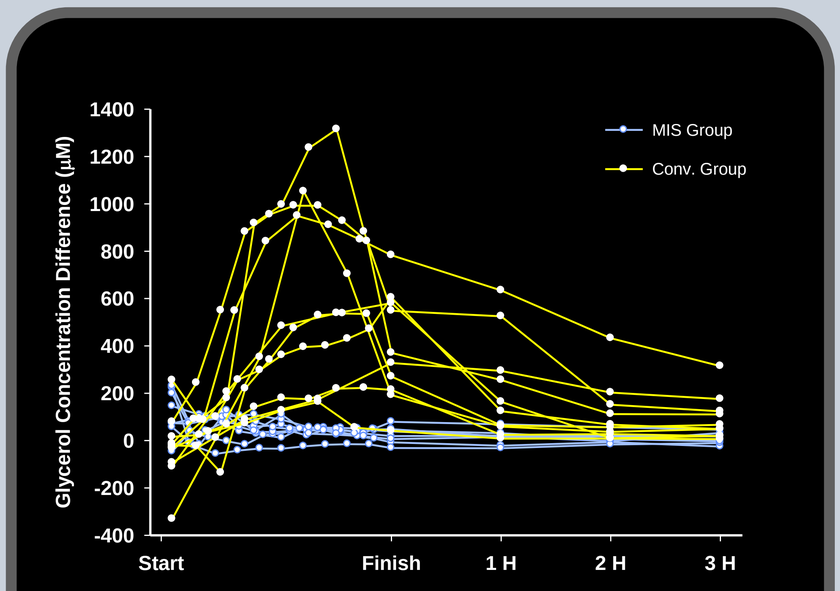
OBJECTIVES

The aim of this study was to quantify glycerol concentrations changes in the paraspinal muscle during traditional open spine surgery (TOSS) and MISS.

METHODS

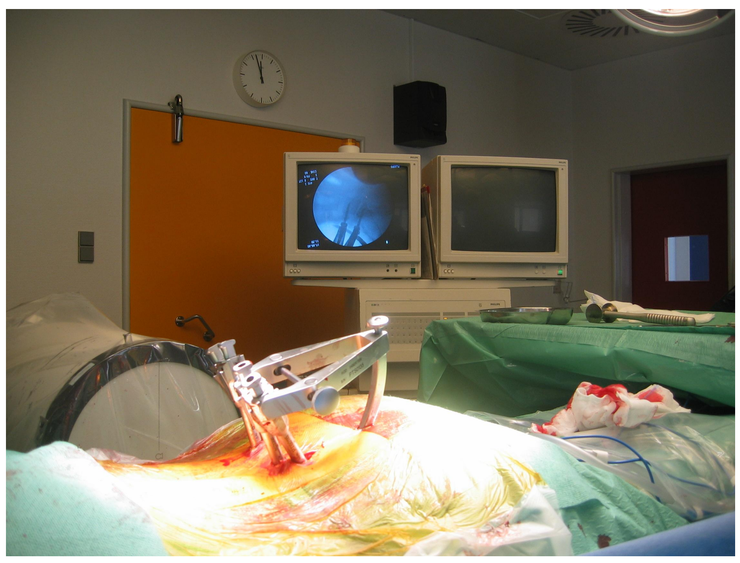
- **Eighteen patients scheduled to undergo lumbar surgery were enrolled in this study.**
- **Glycerol concentrations of the paraspinal muscle and deltoid muscle, during surgery, were measured in 8 patients during TOSS and in 10 patients during MISS.**
- **Microdialysis samples were collected every 20 minutes during surgery.**
- **Glycerol concentration difference were calculated**





RESULTS

- **Glycerol concentration differences (GCD) between the paraspinal and deltoid muscle were 124.1 (119.6) micro mol in the TOSS group and 46.4 (43.4) micro mol in the MISS group (P = 0.001).**



CONCLUSIONS

- **This study showed a relationship between the surgical approach and GCD level. Reduced GCD level indicate a reduced invasiveness of MISS to the paraspinal muscle.**

1. **Ren G, Eiskjær S, Kaspersen J, Christensen FB, Rasmussen S. Microdialysis of paraspinal muscle in healthy volunteers and patients underwent posterior lumbar fusion surgery. Eur Spine J. 2009; 18: 1604-9**
2. **Hillered L, Valtysson J, Enblad P, Persson L (1998) Interstitial glycerol as a marker for membrane phospholipid degradation in the acutely injured human brain. J Neurol Neurosurg Psychiatry 64(4):486–491**

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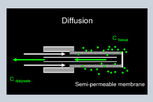

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