

# Risk factors for severe postoperative pain in laparoscopic gynecology: role of breath-holding duration

Dmitriev Alexey, Trembach Nikita, Kotov Vadim  
Kuban State Medical University,  
Department of Anesthesiology, Reanimatology and Transfusiology  
Krasnodar, Russian Federation



## Introduction

Potential role of **baroreflex sensitivity** in the functional state of the nociceptive and antinociceptive systems.

**Breath-holding** - a non-invasive and accurate assessment of the functional state of the cardiorespiratory system



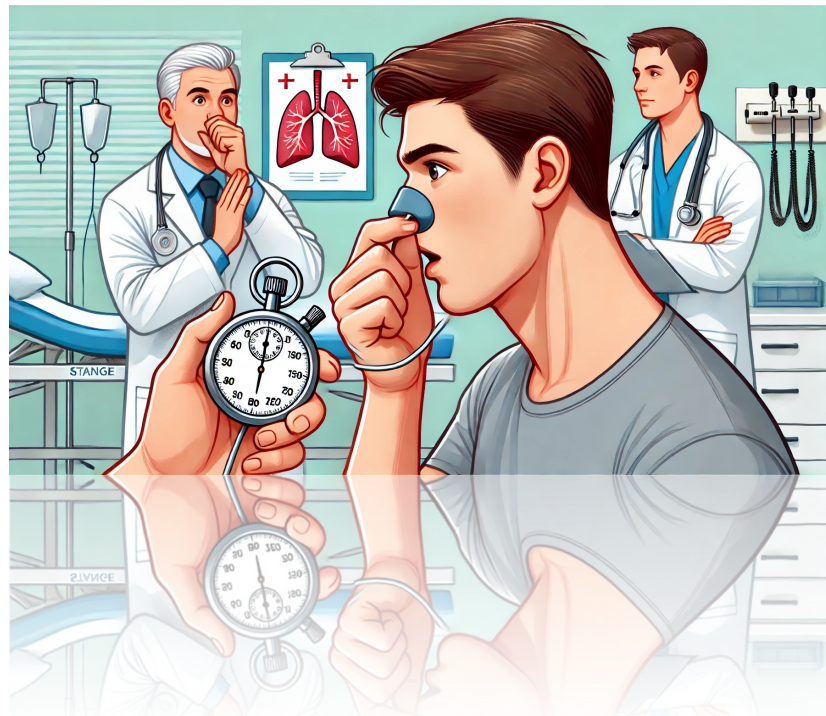
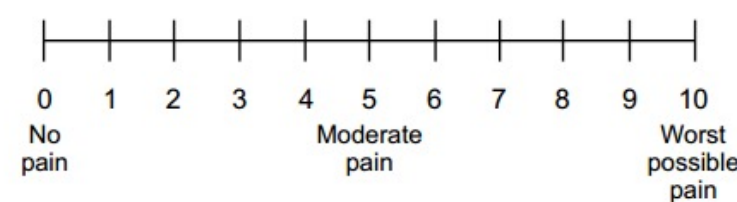
## Objective

The aim of the study was **to assess the relationship** between the breath-holding test and postoperative pain and **to develop a model** for predicting pain after laparoscopic gynecological surgery.

## Material and methods

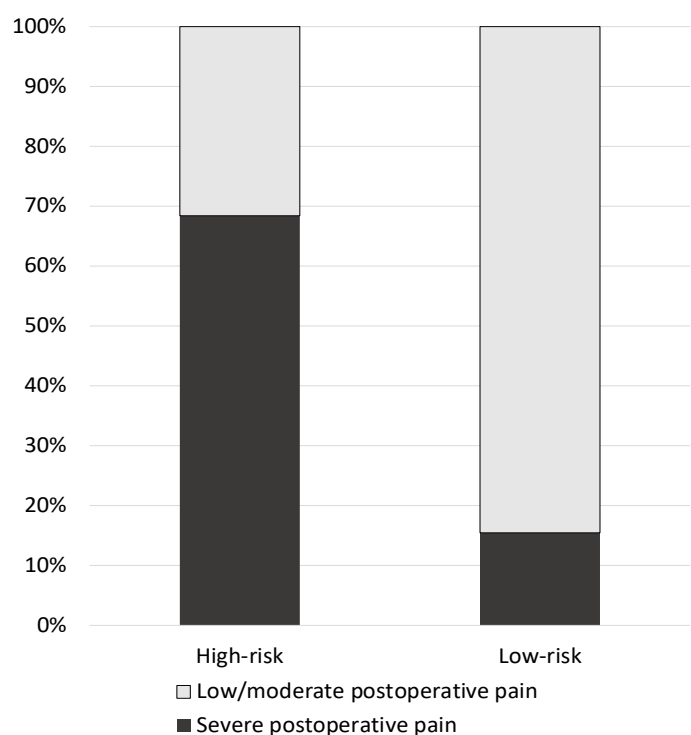
Data from **489 patients** undergoing gynecological laparoscopy at the Clinic of the Kuban State Medical University from August 2019 to September 2023 were analyzed.

### 0-10 Numeric Pain Intensity Scale\*



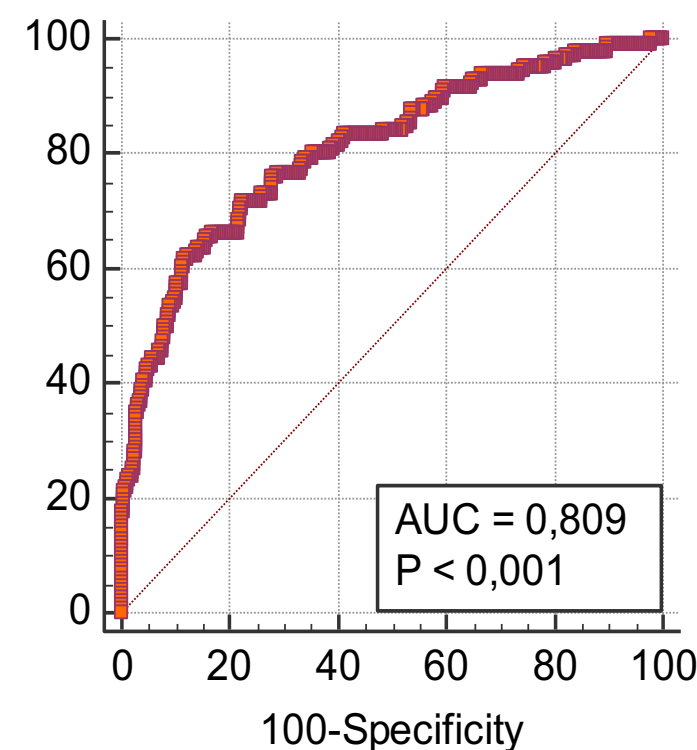
## Results

Severe postoperative pain was reported in 146 patients (29.9%). The **duration of breath-holding** was statistically significantly **longer** in patients **without severe pain**.



Generalized Anxiety Disorder scale score, Pain Catastrophizing Scale score and duration of surgery were higher in patients with severe postoperative pain, endometriosis surgery was also the factor for severe postoperative pain (NRS 7-10).

**AUROC for prognostic model was 0,81.**



## Conclusion

The breath-hold test, along with other factors, may be useful in assessing the risk of severe postoperative pain after laparoscopic gynecology.