

Bite Block Standardization in Neurosurgical MEP Cases

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INTRODUCTION

- Tongue lacerations are a concerning complication that patients can experience during spinal surgery with Motor Evoked Potential (MEP) monitoring.
- Patients face increased risk of tongue lacerations during MEP when bite blocks are not properly placed or only one bite block, instead of two, is used (Matsumoto et al., 2022; Tamkus & Rice, 2012). Strong evidence further supports soft bite blocks rather than hard oropharyngeal airway-like devices to reduce the risks (Revilla-Pacheco et al., 2022).
- Despite this evidence, standardized protocols for bite block use during MEP monitoring remain inconsistent across healthcare organizations, leaving patients vulnerable to preventable oral injuries from tongue laceration that can require ENT intervention, including edema, ulceration, and ischemia/necrosis.

Since the implementation of a new bite block protocol during MEP monitoring, patients experienced zero tongue lacerations during spinal surgery.

Protocol Instructions:

- 1.Ensure bite blocks are large enough that you cannot bite through it, but not overly large to cause TMJ pain postoperatively. For this reason, it is impossible to give an exact number of 4x4 gauzes to be wrapped due to differences in jaw size
2. Wrap two bite blocks in pink tape, if possible, to give bite block resistance to saturation by secretions and to give bite block more firmness/strength
3. When placing bite block in back molars, use tongue depressor to push tongue away so that the tongue does not get caught between bite block and teeth. Check again after final positioning.
4. Place second bite block in back molars on side with ETT or in midline if no space in second back molar
5. Ensure that tongue is neutral and in middle of the mouth after placing bite blocks. Ensure if second bite block is midline that the tongue is pushed back and not in between bottom teeth and bite block
6. Do one last sweep around the lips with the tongue depressor to make sure lips are back to neutral positioning

The Anesthesia Department will continue to follow the established protocol and refine it.



METHODS

PLAN Create MEP bite block protocol for Neurosurgical MEP Cases	DO Implement new protocol from 01/01/2025 to 07/31/2025
STUDY Compare tongue laceration incidents prior to and during implementation	ACT Evaluate additional improvements that could be made part of the protocol

IMPROVED RESULTS

- The incidence of patients experiencing tongue lacerations after implementing the protocol decreased to zero.
- This is a significant improvement from the previous year. In 2024, there were eight (8) reported tongue lacerations during neurosurgical MEP cases.

REFERENCES

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