

You Can't Always Blame Anesthesia – A Case of Jaw Dislocation During Upper Endoscopy

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Introduction

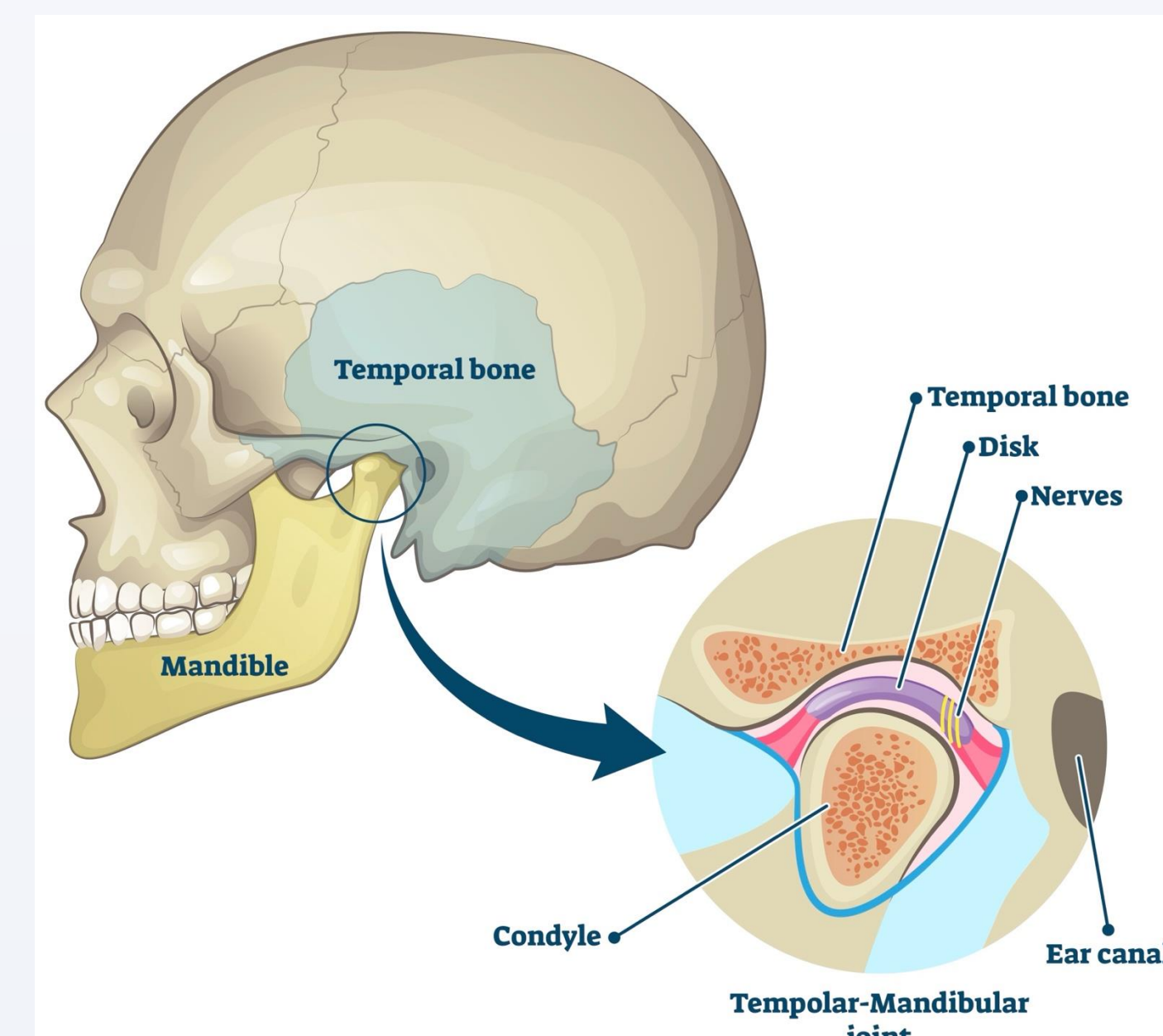
- Temporomandibular joint (TMJ) dislocation is a rare but recognized complication of procedures involving oral airway manipulation, such as esophagogastroduodenoscopy (EGD), bronchoscopy, endotracheal intubation, laryngeal mask insertion, and dental procedures.
- The use of anesthesia and rigid bite blocks increases the risk of TMJ dislocation due to muscle relaxation and forced mouth opening.

Case Description

- A 67-year-old female with hypertension and gastroesophageal reflux disease underwent EGD for evaluation of esophagitis.
- Prior to sedation, a bite block was placed.
- She received 400 mg of propofol for the 35-minute procedure, maintaining spontaneous ventilation without airway maneuvers; minor SpO₂ decreases were noted.
- Post-procedure, she experienced unilateral jaw pain, a locked jaw, and inability to close her mouth.
- Oral and maxillofacial surgery evaluation revealed a fixed, open jaw with masseter muscle spasm and palpable preauricular depression, indicating acute TMJ dislocation.
- Nélaton's maneuver (the Hippocratic technique) successfully reduced the dislocation, resolving her symptoms.

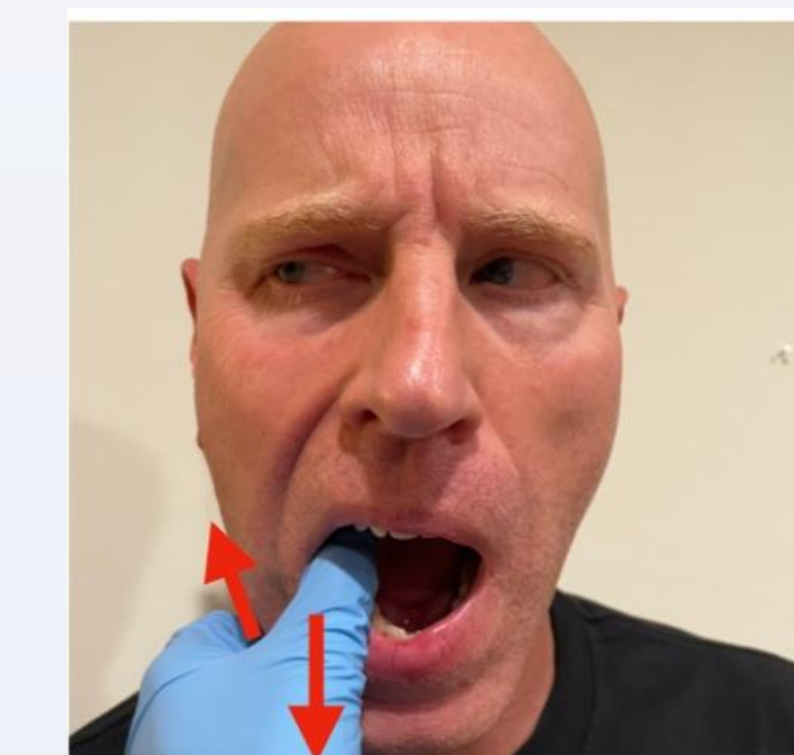
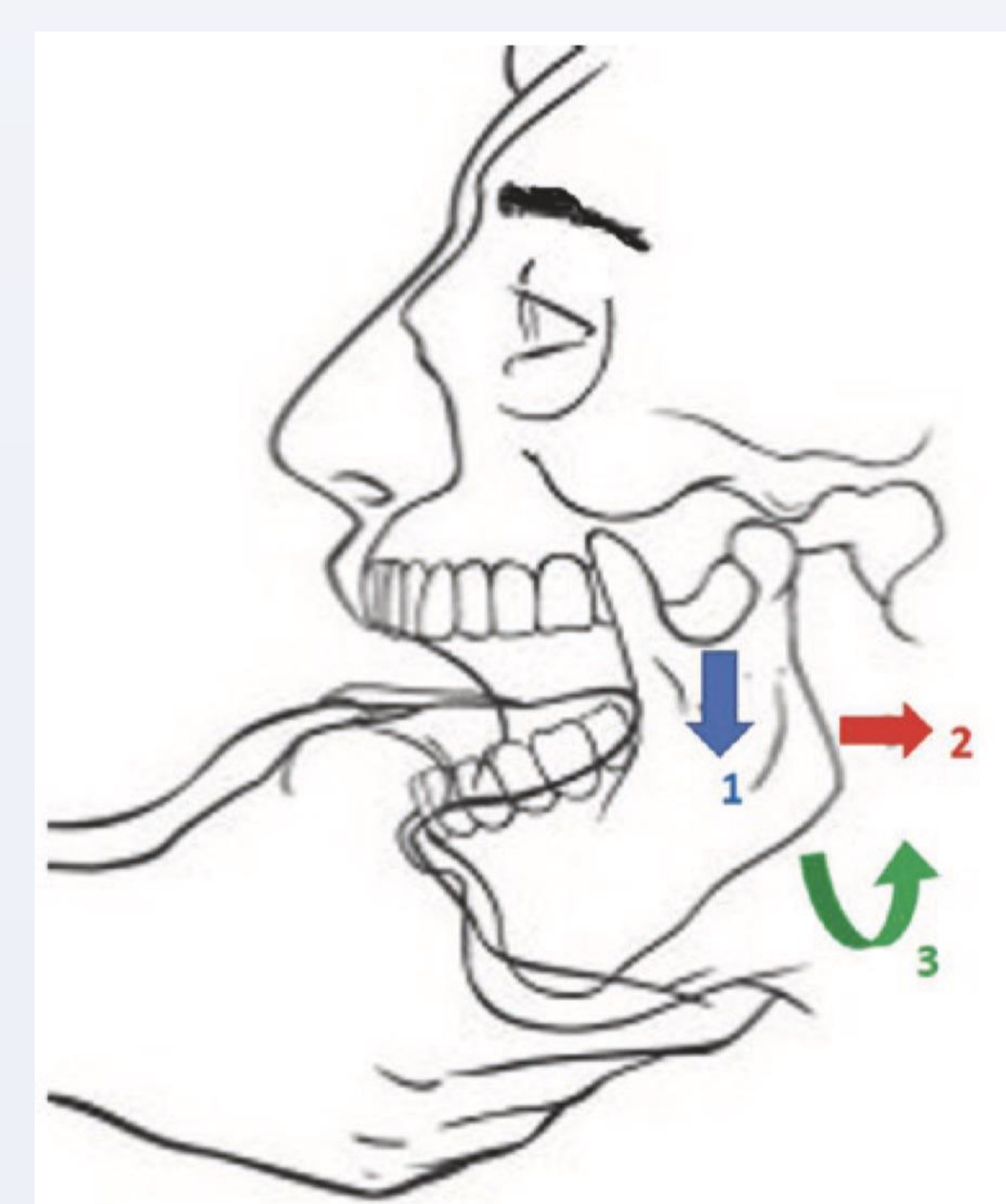
Nélaton's Maneuver Or The Hippocratic Technique

- The patient was discharged home after 60 minutes.
- Follow-up confirmed no prior TMJ issues and no residual complaints.



The TMJ is formed by the union of the glenoid fossa of the temporal bone and the mandibular condyle of the mandible. Excess anterior motion of the mandibular condyle can result in anterior dislocation of the TMJ, which is the most common type of dislocation.

"Temporomandibular Joint Disorders (TMDs)," Revisedental.com.

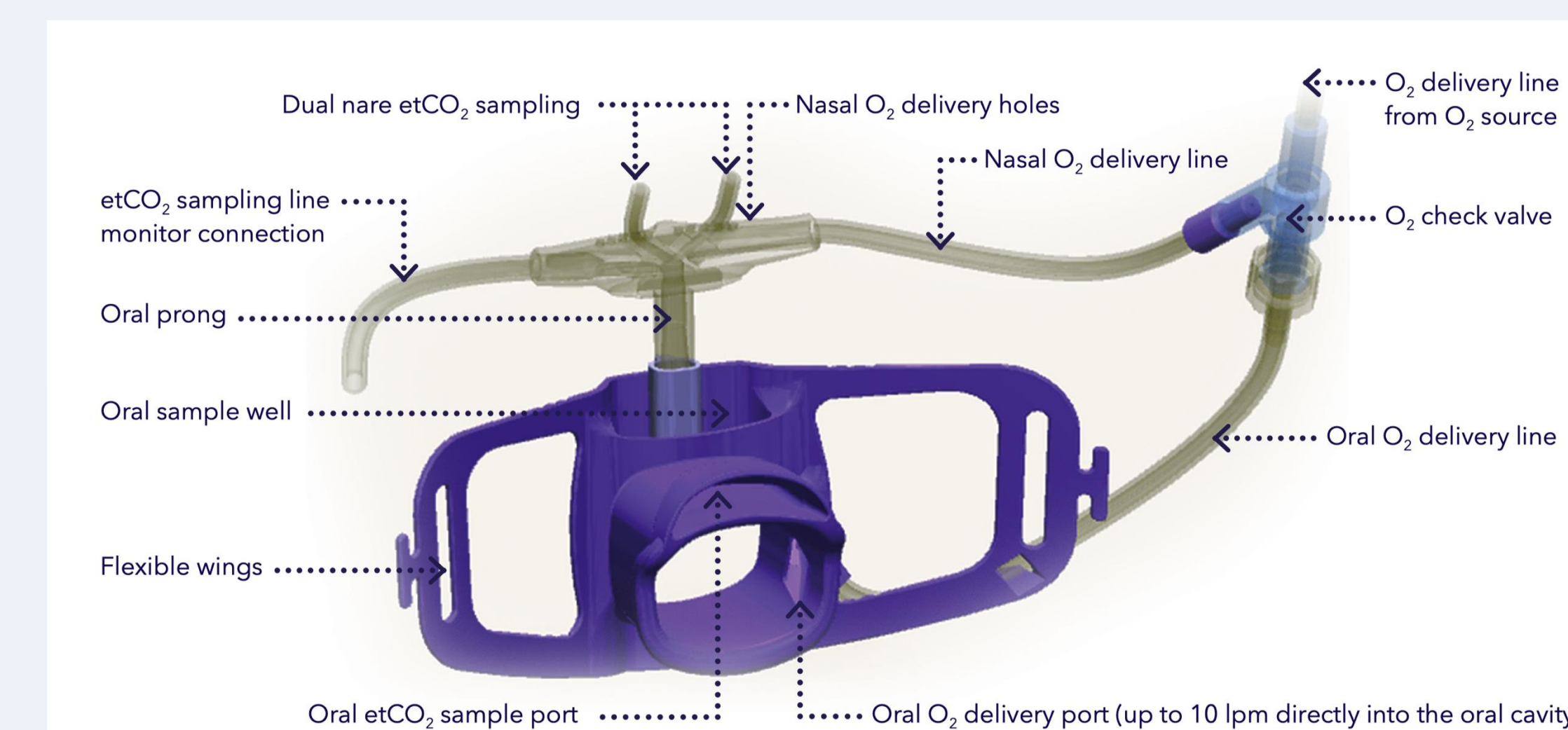


Bimanual intra-oral traction maneuver, Nélaton's maneuver, or the Hippocratic technique:
1. Downward pressure on the molars.
2. Backward pressure.
3. Upward thrust.

"Bhargava D, Gurjar P. 'Anatomy and Basic Biomechanics of the Temporomandibular Joint. In *Temporomandibular Joint Disorders: Principles and Current Practice*, Springer, 2021, Chapter 3."

Discussion

- Extreme mouth opening is the most common cause of TMJ dislocation, accounting for 46% of cases [1].
- Anterior TMJ dislocation is a rare complication during procedures involving oral airway manipulation, such as EGD, bronchoscopy, and intubation [2,3].
- Anesthesia may increase the risk by relaxing muscles that stabilize the TMJ; dislocation can occur even without sedation.
- Symptoms often manifest upon emergence from anesthesia, including inability to close the mouth, drooling, garbled speech, and pain.
- Early recognition and prompt reduction prevent complications like muscle spasm and chronic dislocation.
- In our practice, we use Medtronic bite blocks that capture end-tidal CO₂, deliver supplemental oxygen, and protect endoscopes (see figure below).



"Smart CapnoLine Sampling Line - Guardian," Medtronic.

Conclusion

- Vigilance for TMJ dislocation is essential after procedures involving oral manipulation under anesthesia.
- Early recognition of symptoms— jaw pain, inability to close the mouth, drooling, speech difficulties-allows prompt intervention.
- Prompt assessment and reduction can prevent long-term complications.
- Minimizing mouth opening and using appropriately sized bite blocks may reduce risk.
- Clinical examination and increased is crucial for diagnosis; imaging may rule out associated fractures.

References

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2. Evan S. Dellon, David Steele; Jaw Dislocation as an Unusual Complication of Upper Endoscopy. *Case Rep Gastroenterol* 30 April 2016; 10 (1): 151–155.
3. Wang, L. K., Lin, M. C., Yeh, F. C., & Chen, Y. H. (2009). Temporomandibular joint dislocation during orotracheal extubation. *Acta Anaesthesiologica Taiwanica*, 47(4), 200-203.