

Management of Trial Spinal Cord Stimulator in Dual Antiplatelet Therapy (DAPT) Settings

Sean Kelly, Dr. Patrick Anello, Dr. Douglas Schechter



Case Description

- 59-year-old male with a history of failed back presented for placement of a trial spinal cord stimulator (SCS). Removal of the trial lead was planned for eight days after placement.
- Four days after placement, patient presented with a NSTEMI. Cardiac catheterization revealed a proximal LAD lesion.
- Patient was treated with PCI and a single drug eluting stent (DES).
- Though necessary for one month, it is recommended to maintain clopidogrel for a minimum of one year and aspirin indefinitely².
- Removal of the epidural lead would require the Clopidogrel to be held for 5-7 days³.
- Interventional cardiology was consulted. A cangrelor infusion was started as bridge therapy while the clopidogrel and aspirin were held.
- After 7 days, the cangrelor infusion was held for two hours and the spinal cord stimulator lead was successfully removed.
- Neuro checks were performed every hour for the next 12 hours.
- The following day, cangrelor was discontinued, and the patient resumed aspirin and clopidogrel.
- Patient was monitored for three days following restarting aspirin and clopidogrel and displayed no neurological or cardiac sequelae—he was then successfully discharged from the hospital.



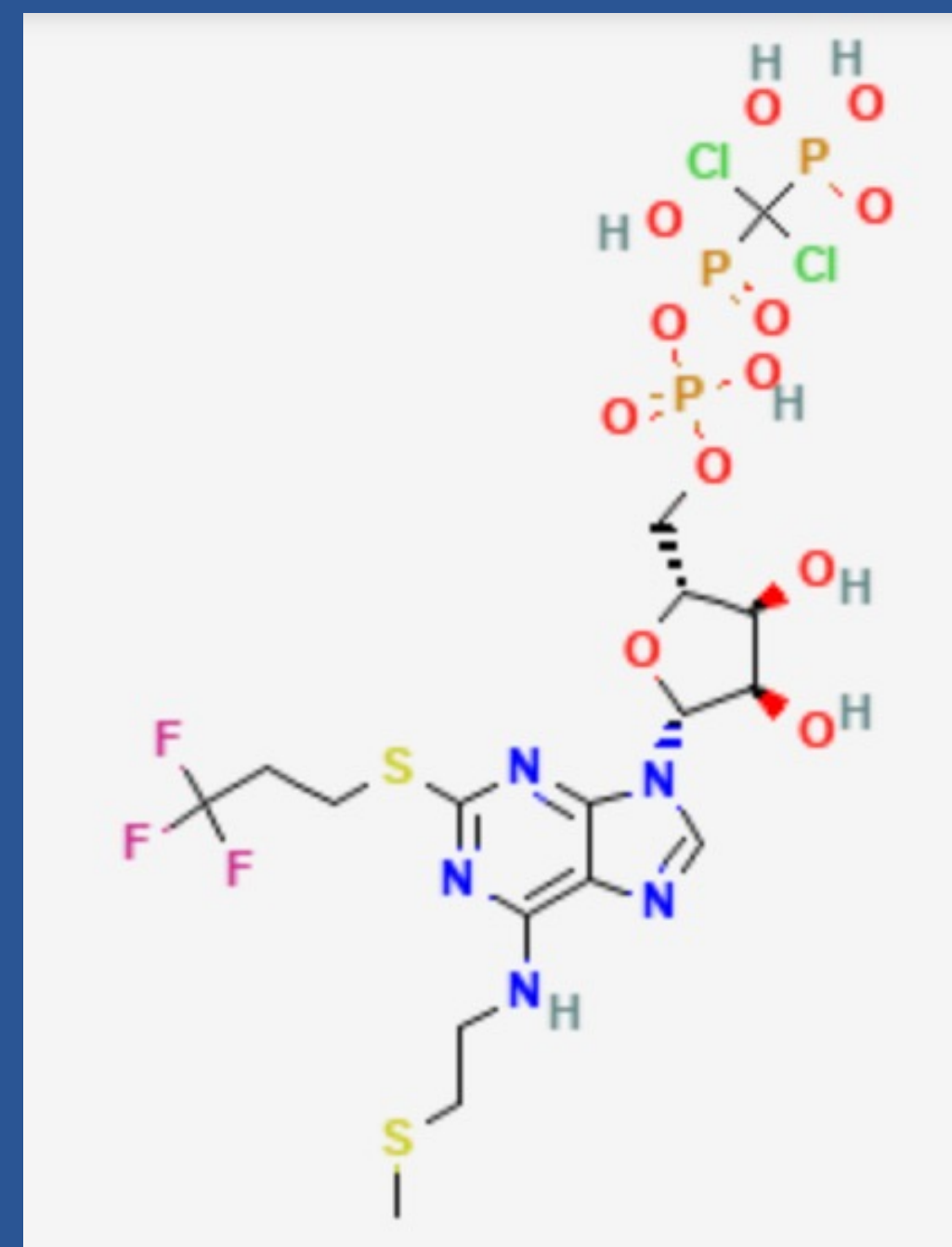
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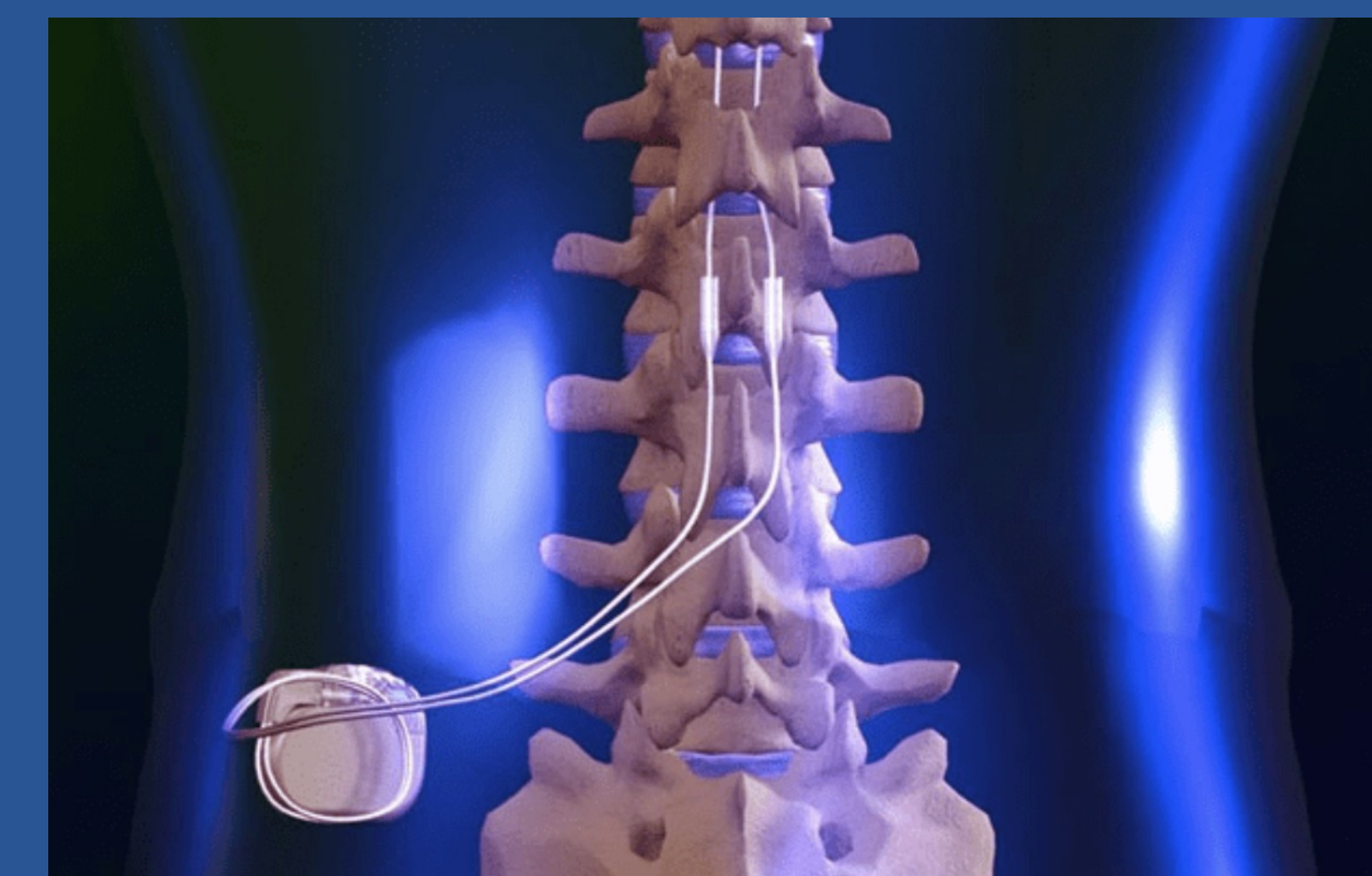


Cangrelor may be used as a **bridge therapy** when it is **unsafe** to discontinue **dual antiplatelet therapy** (DAPT) in the setting of myocardial infarction treated with drug eluting stent.

Due to its **selective** nature and **reversible P2Y₁₂** receptor inhibition, as well as its **short half life**, Cangrelor proves to be a **successful alternative** to traditional DAPT in contexts involving Major Adverse Cardiovascular Events.



U.S. National Library of Medicine. (n.d.). *Cangrelor*. National Center for Biotechnology Information. PubChem Compound Database. <https://pubchem.ncbi.nlm.nih.gov/compound/Cangrelor>



Spinal Cord Stimulator Implants. All Star Pain Management & Regenerative Medicine. (2023, April 21). <https://allstarpainmanagement.com/spinal-cord-stimulator-implants/>



Discussion

- Though initially scheduled to have the trial spinal cord stimulator implanted for eight days, the cardiac event and its treatment greatly increased the complexity and risk of managing the trial spinal cord stimulator.
- Dual antiplatelet therapy (DAPT) is required for a minimum of 3 – 6 months following myocardial infarction (MI) treated with drug eluting stent.
- Removal of a spinal cord stimulator lead is deemed a high-risk procedure, which requires the discontinuing of aspirin and clopidogrel for 5 – 7 days to decrease the risk of epidural hematoma.
- Discontinuing the DAPT immediately post MI with stenting would greatly increase the risk of a major cardiac event.
- Cangrelor, a reversible platelet P2Y₁₂ receptor inhibitor, was chosen to replace aspirin and clopidogrel because of its rapid onset, reversible platelet inhibition, and short half life (3-6 minutes)¹.
- Management of this complicated case required a multidisciplinary approach from pain management, interventional cardiology, neurology, and neurosurgery.

References

- ¹Awosika, A., & Patel, P. (2023, July 23). *Cangrelor*. National Library of Medicine. <https://www.ncbi.nlm.nih.gov/books/NBK594269/>
- ²Lawton, J. S., Tamis-Holland, J. E., Bangalore, S., Bates, E. R., Beckie, T. M., Bischoff, J. M., Bittl, J. A., Cohen, M. G., DiMaio, J. M., Don, C. W., Fremes, S. E., Gaudino, M. F., Goldberger, Z. D., Grant, M. C., Jaswal, J. B., Kurlansky, P. A., Mehran, R., Metkus, T. S., Nnacheta, L. C., ... Zwischenberger, B. A. (2022). 2021 ACC/AHA/SCAI Guideline for Coronary Artery Revascularization: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. *Circulation*, 145(3). <https://doi.org/10.1161/cir.0000000000001038>
- ³Wickboldt, A., & Guirguis, M. (2019, August 27). *Updates to the ASRA Guidelines for Interventional Pain Procedures*. ASRA Pain Medicine. <https://www.asra.com/news-publications/asra-newsletter/newsletter-item/asra-news/2019/08/27/updates-to-the-asra-guidelines-for-interventional-pain-procedures>