

## Tech Note

Date: November 10, 2008  
To: All Field Personnel  
From: Biotronik Technical Services  
Re: Electrosurgical Cautery and Biotronik ICD Patients

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Biotronik recommends placing a magnet over the ICD during procedures where electrocautery will be used. Alternatively, the tachycardia features of the ICD can be programmed to OFF. Both methods are acceptable to prevent inappropriate therapy caused by the electrical signals associated with the use of electrocautery.

It is possible that electromagnetic interference (EMI) from electrocautery would be perceived by the ICD as a tachyarrhythmia and result in inappropriate antitachycardia therapy. The easiest method to prevent this reaction is to use a permanent magnet to suspend the ICD's tachycardia detection and therapy. Secure the magnet over the ICD with tape for the entire electrocautery portion of the procedure. At the end of the procedure, remove the magnet to re-enable detection and therapy and return the ICD to the previously-programmed parameters. Monitor the patient's heart rhythm during the procedure so that if the patient should have an episode of tachycardia, the magnet can be quickly removed to ensure that the ICD will detect and deliver programmed therapies. External rescue should also be available.

If the procedure is lengthy or causes difficulty with positioning the magnet, it may be necessary to program tachycardia therapies OFF until the surgical procedure is completed. External defibrillation capabilities should be immediately available if the patient develops a tachycardia episode. Tachyarrhythmia detection and therapy will need to be programmed back ON at the end of the procedure.

Biotronik recommends the following additional precautionary steps to ensure patient safety during electrocautery:

- The current path and ground plate should be kept as far away from the pulse generator and leads as possible (at least 6 inches / 15 cm).
- The bipolar setting on the electrocautery equipment should be used.
- The electrocautery ground pad should be placed on the same side of the patient that electrocautery will be performed.

For pacemaker-dependent patients: electrocautery can cause EMI that is perceived by the ICD as noise. Biotronik ICDs respond to noise by delivering asynchronous pacing in the affected channel (where noise is detected). Therefore the patient's heart rhythm should be monitored during the entire procedure to detect if asynchronous pacing is present.

Please contact Technical Services for additional questions: 1-800-284-6689