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SHORT CASES IN CARDIOLOGY

Migration of an implantable cardioverter-defibrillator generator into the small bowel

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In February 1992, a previously fit man of 64 experienced an out of hospital cardiac arrest without any prodromal symptoms. The paramedical team found him to be in ventricular fibrillation from which he was successfully defibrillated. There was no evidence of myocardial infarction and no neurological sequelae. He was transferred to our hospital where cardiac catheterisation showed a chronically occluded left anterior descending coronary artery as the only abnormality. An exercise test was normal and there were no inducible ventricular arrhythmias at electrophysiological study. We decided to implant a cardioverter-defibrillator.

Under general anaesthesia, a CPI Endotak 0062 electrode was positioned in the right ventricular apex and a subcutaneous patch (0063) was implanted in the left sub-axillary area. A 10 J, biphasic shock successfully terminated ventricular fibrillation. The leads were tunnelled down into a subcostal pouch. The left rectus muscle was dissected to make a pocket for the generator (CPI Ventak P2) which fitted satisfactorily behind the muscle but still within the rectus sheath. The generator pocket and wound were closed and the patient made a good recovery.

He continued to do well without any shocks and had only one episode of non-sustained ventricular tachycardia detected by the device. He was admitted in December 1994 for a replacement generator. He did not report any symptoms and physical examination showed the generator to be deep to the original incision.

At operation, the original scar was resected

and after careful dissection of the leads the generator was found to have migrated to the peritoneum. With the assistance of a general surgeon a midline incision was made and the defibrillator was found intraluminally within a loop of jejunum and eroding the bowel wall (figure). The posterior walls of the bowel loops adhered to one another as in a surgically created anastomosis. The box was removed, 25 cm of jejunum resected, and the ends of the bowel were anastomosed. Peritoneal lavage was performed and the wound was closed. Because the electrodes were deeply embedded in scar tissue they were not removed. He was treated with intravenous antibiotics and did well postoperatively; it was decided not to reimplant another device. Both leads and the subcutaneous patch had to be removed five months later because he had a discharging abdominal wound sinus. He made a good recovery.

Although migration of a cardioverter-defibrillator into the peritoneum has been described,¹ we believe that this is the first report of migration into the bowel. Although the patient initially denied any gastroenterological symptoms, after the operation he did report some occasional unexplained vomiting episodes in the months before the generator explantation. Had the device not been removed the small bowel would probably have become obstructed.

It is not clear how the device migrated from the subrectus sheath into the jejunum but presumably the device eroded through the posterior wall of the sheath, passed into the peritoneum, and was encompassed by loops of small bowel onto which it became stuck. The device then eroded through the walls of the jejunum. It is fortunate that the outcome was not more serious. It is important to remember that bowel or urinary tract symptoms in patients with an abdominally placed generator could be caused by device migration. Newer generators are smaller and can usually be implanted subpectorally² so such complications may become even rarer.

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Photograph of implantable cardioverter-defibrillator generator placed in the surgically resected specimen of jejunum, showing how the bowel conforms to the shape of the generator.