

Practice Advisory for Perioperative Management of Patients with Cardiac Rhythm Devices:
Bibliography
American Society of Anesthesiologists

1. Achenbach S, Moshage W, Diem B, Bieberle T, Schibgilla V, Bachmann K: Effects of magnetic resonance imaging on cardiac pacemakers and electrodes. *Am Heart J* 1997; 134:467-473
2. Adamec R, Haefliger JM, Killisch JP, Niederer J, Jaquet P: Damaging effect of therapeutic radiation on programmable pacemakers. *PACE* 1982; 5:146-150
3. Ahern TS, Luckett C, Ehrlich S, Pena EA: Use of bipolar electrocautery in patients with implantable cardioverter-defibrillators: No reason to inactivate detection or therapies. *PACE* 1999; 22:776
4. Alagona P, Toole JC, Maniscalco BS: Nuclear magnetic resonance imaging in a patient with a pacemaker. *PACE* 1989; 12:619
5. Alyward P, Blood R, Tonkin A: Complications of defibrillation with permanent pacemaker in situ. *PACE* 1979; 2:462-464
6. Avery JE: Loss prevention case of the month. Not my responsibility! *J Tenn Med Assoc* 1988; 81:523
7. Bailey AG, Lacey SR: Intraoperative pacemaker failure in an infant. *Can J Anaesth* 1991; 38:912-913
8. Baller MR, Kirsner KM: Anesthetic implications of implanted pacemakers: a case study. *AANA J.* 1995; 63:209-216
9. Barold SS, Falkoff MD, Ong LS, Heinle RA: Magnet unresponsive pacemaker endless loop tachycardia. *Am Heart J* 1988; 116:726-732
10. Barold SS, Falkoff MD, Ong LS, Heinle RA: Paradoxical induction of endless loop tachycardia by magnet application over DDD pacemaker. *PACE* 1986; 9:503-510
11. Barold SS, Ong LS, Scovil J, Heinle RA, Wright T: Reprogramming of an implanted pacemaker following external defibrillation. *PACE* 1978; 1:514-520
12. Batra YK, Bali IM: Effect of coagulating and cutting current on a demand pacemaker during transurethral resection of the prostate: A case report. *Can Anaesth Soc J* 1978; 25:65-66
13. Belott PH, Sands S, Warren J: Resetting of DDD pacemakers due to EMI. *PACE* 1984; 7:169-172
14. Bourke J, Gold RG, Adams PC, Bexton RS: Diathermy induced loss of DDD pacemaker identity. *Ann Thorac Surg* 1985; 39:37
15. Bowes R, Bennett D: Effect of transvenous atrioventricular nodal ablation on the function of implanted pacemakers. *PACE* 1985; 8:811-814
16. Brooks C, Mutter M: Pacemaker failure associated with therapeutic radiation. *Am J Emerg Med* 1988; 6:591-593
17. Casavant D, Haffajee C, Stevens S, Pacetti P: Aborted implantable cardioverter defibrillator shock during facial electrosurgery. *PACE* 1998; 21:1325-1326
18. Celentano WJ, Jahr JS, Nossaman BD: Extracorporeal shock wave lithotripsy in a patient with a pacemaker. *Anesth Analg* 1992; 74:770-772
19. Chang AC, McAreavey D, Tripodi D, Fananapazir L: Radiofrequency catheter atrioventricular node ablation in patients with permanent cardiac pacing systems. *PACE* 1994; 17:65-69
20. Chauvin M, Crenner F, Brechenmacher C: Interaction between permanent cardiac pacing and electrocautery: the significance of electrode position. *PACE.* 1992; 15:2028-2033
21. Chew EW, Troughear RH, Kuchar DL, Thorburn CW: Inappropriate rate change in minute ventilation rate responsive pacemakers due to interference by cardiac monitors. *PACE* 1997; 20:276-282

22. Chin MC, Rosenqvist M, Lee MA, Griffin JC, Langberg JJ: The effect of radiofrequency catheter ablation on permanent pacemakers: an experimental study. *PACE*. 1990; 13:23-29
23. Cohen TJ, Chengot T, Quan C, Peller AP: Elevation of defibrillation thresholds with propofol during implantable cardioverter-defibrillator testing. *J Invasive Cardiol* 2000; 12:121-123
24. Cooper D, Wilkoff B, Castle L, Strem S, Baelco K, Matranga D, Shimokochi D, Jacobs B, Morant V, Maloney J: Safety of extracorporeal shock wave lithotripsy in patients with permanent pacemakers. *PACE* 1987; 10:443
25. Cooper D, Wilkoff B, Masterson M, Castle L, Belco K, Simmons T, Morant V, Strem S, Maloney J: Effects of extracorporeal shock wave lithotripsy on cardiac pacemakers and its safety in patients with implanted cardiac pacemakers. *PACE* 1988; 11:1607-1616
26. Das G, Eaton J: Pacemaker malfunction following transthoracic countershock. *PACE* 1981; 4:487-490
27. de Chillou C, Sadoul N, Beurrier D, Bizeau O, Aliot E, Dodinot B: Effects of radiofrequency catheter ablation on the behavior of permanent pacemakers. *PACE* 1996; 19:680
28. Delhumeau A, Ronceray S, Moreau X, Cottineau C, Cavellat M: [Final arrest of a pacemaker after use of electrocautery] *Ann Fr Anesth Reanim* 1988; 7:162-164
29. Domino KB, Smith TC: Electrocautery-induced reprogramming of a pacemaker using a precordial magnet. *Anesth Analg* 1983; 62:609-612
30. Drach GW, Weber C, Donovan JM: Treatment of pacemaker patients with extracorporeal shock wave lithotripsy: experience from 2 continents. *J Urol* 1990; 143:895-896
31. Dresner DL, Lebowitz PW: Atrioventricular sequential pacemaker inhibition by transurethral electrosurgery. *Anesthesiology* 1988; 68:599-601
32. El-Gamal HM, Dufresne RG, Saddler K: Electrosurgery, pacemakers and ICDs: A survey of precautions and complications experienced by cutaneous surgeons. *Dermatol Surg* 2001; 27:385-390
33. Ellenbogen KA, Wood MA, Stambler BS: Acute effects of radiofrequency ablation of atrial arrhythmias on implanted permanent pacing systems. *PACE* 1996; 19:1287-1295
34. Epstein MR, Mayer JE Jr, Duncan BW: Use of an ultrasonic scalpel as an alternative to electrocautery in patients with pacemakers. *Ann Thorac Surg* 1998; 65:1802-1804
35. Erdman S, Levinsky L, Servadio C, Stoupel E, Levy MJ: Safety precautions in the management of patients with pacemakers when electrocautery operations are performed. *Surg Gynecol Obstet* 1988; 167:311-314
36. Erlebacher JA, Cahill PT, Pannizzo F, Knowles R Jr: Effect of magnetic resonance imaging on DDD pacemakers. *Am J Cardiol* 1986; 57:437-440
37. Fein RL: Transurethral electrocautery procedures in patients with cardiac pacemakers. *JAMA* 1967; 202:101-103
38. Fernando B, Emery RW, Copeland JG, Fuller JK: Direct current cardioversion. *Ann Thorac Surg* 1984; 37:521
39. Fetter J, Aram G, Holmes DR, Gray J: The effects of nuclear magnetic resonance imagers on external and implanted pulse generators. *PACE* 1984; 7:720-727
40. Fetter J, Patterson D, Aram G, Hayes DL: Effects of extracorporeal shock wave lithotripsy on single chamber rate response and dual chamber pacemakers. *PACE* 1989; 12:1494-501
41. Finfer SR: Pacemaker failure on induction of anaesthesia. *Br J Anaesth* 1991, 66:509-512
42. Fontaine JM, Mohamed FB, Gottlieb, Callans DJ, Marchlinski FE.: Rapid ventricular pacing in a pacemaker patient undergoing magnetic resonance imaging. *PACE* 1998, 21:1336-1339
43. Garcia-Bolao I, Albaladejo V, Benito A, Alegria E, Zubieta JL: Magnetic resonance imaging in a patient with a dual-chamber pacemaker. *Acta Cardiologica* 1998; 53:33-35
44. Giedwoyn JO: Pacemaker failure following external defibrillation. *Circulation* 1971; 44:293

45. Gimbel JR, Johnson D, Levine PA, Wilkoff BL: Safe performance of magnetic resonance imaging on five patients with permanent cardiac pacemakers. *PACE* 1996; 19:913-919
46. Gimbel JR, Lorig RJ, Wilkoff BL: Safe magnetic resonance imaging of pacemaker patients. *J Am Coll Cardiol* 1995; 25:11A
47. Goldberg ME, McSherry RT, O'Connor ME: Electrocautery and pacemaker reprogramming. *Anesth Analg* 1984; 63:541-542
48. Goldberg RJ, Badger JM. Major depressive disorder in patients with the implantable cardioverter defibrillator. Two cases treated with ECT. *Psychosomatics* 1993; 34:273-277
49. Gould L, Patel S, Gomes GI, Chokshi AB: Pacemaker failure following external defibrillation. *PACE* 1981; 4:575-577
50. Greene LF, Merideth J: Transurethral operations employing high frequency electrosurgical currents in patients with demand cardiac pacemakers. *J Urol* 1972; 108:446-448
51. Hayes DL, Charboneau JW, Lewis BD, Asirvatham SJ, Dupuy DE, Lexvold NY: Radiofrequency treatment of hepatic neoplasms in patients with permanent pacemakers. *Mayo Clin Proc.* 2001; 76:950-952
52. Hayes DL, Holmes DR, Jr., Gray JE: Effect of 1.5 Telsa nuclear magnetic resonance imaging scanner on implanted permanent pacemakers. *J Am Coll Cardiol* 1987; 10:782-786
53. Hayes DL, Trusty J, Christiansen J, Osborn MJ, Vlietra RE: A prospective study of electrocautery's effect on pacemaker function. *PACE* 1987; 10:686
54. Heller LI: Surgical electrocautery and the runaway pacemaker syndrome. *PACE* 1990, 13:1084-1085
55. Hildner FJ, Linhart JW, Poole DO: Irradiation of pulmonary tumor with overlying artificial cardiac pacemaker. *Radiology* 1969; 92:148
56. Holmes DR, Hayes DL, Gray JE, Merideth J: The effects of magnetic resonance imaging on implantable pulse generators. *PACE* 1986; 9:360-370
57. Hurkmans CW, Scheepers E, Springorum BG, De Ruyter GS, Uiterwaal HA: Influence of therapeutic irradiation on the latest generation of pacemakers. *Heart Rhythm* 2004; 1(Suppl):S54
58. Inbar S, Larson J, Burt T, Mafee M, Ezri MD: Case report: nuclear magnetic resonance imaging in a patient with a pacemaker. *Am J Med Sci* 1993; 305:174-175
59. Kam PC: Anaesthetic management of a patient with an automatic implantable cardioverter defibrillator in situ. *Br J Anaesth* 1997; 78:102-106
60. Katzenberg CA, Marcus FI, Heusinkveld RS, Mammana RB: Pacemaker failure due to radiation therapy. *PACE* 1982; 5:156-159
61. Kellow NH: Pacemaker failure during transurethral resection of the prostate. *Anesthesia* 1993; 48:136-138
62. Kleinman B, Hamilton J, Heriman R, Olshansky B, Justus D, Desai R: Apparent failure of a precordial magnet and pacemaker programmer to convert a DDD pacemaker to VOO mode during the use of the electrosurgical unit. *Anesthesiology* 1997; 86:247-250
63. Kohler F: Cardiac pacemakers and electrosurgery. *JAMA* 1965; 193:199
64. Lamas GA, Antman EM, Gold JP, Braunwald NS, Collins JJ: Pacemaker back up mode reversion and injury during cardiac surgery. *Ann Thorac Surg* 1986; 41:155-157
65. Langberg J, Abber J, Thuroff JW, Griffin JC: The effects of extracorporeal shock wave lithotripsy on pacemaker function. *PACE* 1987; 10:1142-1146
66. Lau FYK, Bilitch M, Wintraub HJ: Protection of implanted pacemakers from excessive electrical energy DC shock. *Am J Cardiol* 1969; 32:244
67. Lauck G, Sommer T, Wolke S, Luderitz B, Manz M: Magnetic resonance imaging in patients with implanted permanent pacemakers. *PACE* 1995; 18(suppl):1168

68. Lauck G, von Smekal A, Wolke S, Seelos KC, Jung W, Manz M, Luderitz B: Effects of nuclear magnetic resonance imaging on cardiac pacemakers. *PACE* 1995; 18:1549-1555
69. Lee RW, Huang SK, Mechling E, Bazgan I: Runaway atrioventricular sequential pacemaker after radiation therapy. *Am J Med* 1986; 81:883-886
70. Lerner SM: Suppression of a demand pacemaker by transurethral electrocautery. *Anesth Analg* 1973; 52:703-706
71. Levine PA, Balady GJ, Lazar HL, Belott PH, Roberts AJ: Electrocautery and pacemakers: Management of the paced patient subject to electrocautery. *Ann Thorac Surg* 1986; 41:313-317
72. Levine PA, Barold SS, Fletcher RD, Talbot P: Adverse acute and chronic effects of electrical defibrillation and cardioversion on implanted unipolar cardiac pacing systems. *J Am Coll Cardiol* 1983; 1:1413-1422
73. Levine PA, Seltzer JP, Barold SS: Adverse interaction between cardiac pacing systems and defibrillation. *PACE* 1983; 6:54
74. Lichter I, Borrie J, Millar WM: Radiofrequency hazards with cardiac pacemakers. *Br Med J* 1965; 2:1513-1518
75. Luechinger R, Duru F, Scheidegger MB, Boesiger P, Candinas R: Force and torque effects of a 1.5-Tesla MRI scanner on cardiac pacemakers and ICDs. *PACE* 2001; 24:199-205
76. Mangar D, Atlas GM, Kane PB: Electrocautery-induced pacemaker malfunction during surgery. *Can J Anaesth* 1991; 38:616-618
77. Marbach JR, Meoz-Mendez RT, Huffman JK, Hudgins PT, Almond PR: The effects of cardiac pacemakers of ionizing radiation and electromagnetic interference from radiotherapy machines. *Int J Radiat Oncol Biol Phys* 1978; 4:1055-1058
78. Markewitz A, Weber W, Wildgans H, Weinhold C: Does extracorporeal shock wave lithotripsy affect pacemaker function? *PACE* 1987; 10:443
79. Martin ET, Coman JA, Shellock FG, Pulling CC, Fair R, Jenkins K: Magnetic resonance imaging and cardiac pacemaker safety at 1.5-Tesla. *J Am Coll Cardiol* 2004; 43:1315-1324
80. Maxted KJ: The effect of therapeutic x-radiation on a sample of pacemaker generators. *Phys Med Biol* 1984; 29:1143
81. Moore S, Firstenberg M, Simmons TW, Trohman R: The interaction between radiofrequency ablation and permanent pacemakers. *Circulation* 1992; 86:449
82. Moore S, Firstenberg MS, Trohman RG, Sterba R, Maloney JD: Long-term effects of radiofrequency catheter ablation on previously implanted pacemakers. *PACE* 1993; 16:947
83. Muller-Runkel R, Orsolini G, Kalokhe UP: Monitoring the radiation dose to a multiprogrammable pacemaker during radical radiation therapy: a case report. *PACE* 1990; 13:1466-1470
84. Mychaskiw G, Eichhorn JH: Interaction of an implanted pacemaker with a transesophageal atrial pacemaker: Report of a case. *J Clin Anesth* 1999; 11:669-671
85. Ngu SL, O'Mealey P, Johnson N, Collins C: Pacemaker function during irradiation: in vivo and in vitro effect. *Australas Radiol* 1993; 37:105-107
86. O'Donoghue JK: Inhibition of a demand pacemaker by electrosurgery. *Chest* 1973; 64:664-666
87. Olufolabi AJ, Charlton GA, Allen SA, Mettam IM, Roberts PR: Use of implantable cardioverter defibrillator and anti-arrhythmic agents in a parturient. *Br J Anaesth* 2002; 89:652-655
88. Orland HJ, Jones D: Cardiac pacemaker induced ventricular fibrillation during surgical diathermy. *Anaesth Intens Care* 1975; 3:321-326
89. Ozeren M, Dogan OV, Duzgun C, Yucel E: Use of an ultrasonic scalpel in the open-heart reoperation of a patient with pacemaker. *Eur J Cardiothorac Surg*. 2002 Apr;21(4):761-2.

90. Palac RT, Hwang MH, Klodnycky ML, Loeb HS: Delayed pulse generator malfunction after DC countershock. *PACE* 1981; 4:163-167
91. Pavlicek W, Geisinger M, Castle L, Borkowski GP, Meaney TF, Bream BL, Gallagher JH: The effects of nuclear magnetic resonance on patients with cardiac pacemakers. *Radiology* 1993; 147:149-153
92. Pfeiffer D, Tebbenjohanns J, Schumacher B, Jung W, Luderitz B: Pacemaker function during radiofrequency ablation. *PACE* 1995; 18:1037-1044
93. Pfeiffer D, Tebbenjohanns J, Schumacher B, Jung W, Manz M, Luderitz B: Pacemaker behaviour during radiofrequency current delivery. *J Am Coll Cardiol* 1994; 23(Suppl A):324A
94. Pourhamidi AH: Radiation effect on implanted pacemakers. *Chest* 1983; 84:499-500
95. Purday JP, Towey RM: Apparent pacemaker failure caused by activation of ventricular threshold test by a magnetic instrument mat during general anaesthesia. *Br J Anaesth* 1992; 69:645-646
96. Quertermous T, Megahy MS, Das Gupta DS, Griem ML: Pacemaker failure resulting from radiation damage. *Radiology* 1983; 148:257-258
97. Raitt MH, Stalzer KJ, Laramore GE, Bardy GH, Dolack GL, Poole JE, Kudenchuk PJ: Runaway pacemaker during high-energy neutron radiation therapy. *Chest* 1994; 106:955-957
98. Rodriguez F, Filimonov A, Henning A, Coughlin C, Greenberg M: Radiation-induced effects in multiprogrammable pacemakers and implantable defibrillators. *PACE* 1991; 14:2143-2153
99. Roguin A, Zviman MM, Meininger GR, Rodrigues ER, Dickfeld TM, Bluemke DA, Lardo A, Berger RD, Calkins H, Halperin HR: Modern pacemaker and implantable cardioverter/defibrillator systems can be magnetic resonance imaging safe. *Circulation* 2004; 110:475-482
100. Rozner MA. Review of electrical interference in implanted cardiac devices. *PACE* 2003; 26:923-925
101. Rozner MA, Burton AW, Kumar AJ. Pacemaker complication during MRI. *J Am Coll Cardiol* 2005; 45:161-162
102. Rubin JM, Miller ED: Intraoperative pacemaker malfunction during total hip arthroplasty. *Anesth Analg* 1995; 80:410-412
103. Samain E, Marty J, Souron V, Rosencher N, Eyrolle L: Intraoperative pacemaker malfunction during a shoulder arthroscopy. *Anesthesiology* 2000; 93:306-307
104. Shapiro WA, Roizen MF, Singleton MA, Morady F, Bainton CR, Gaynor RL: Intraoperative pacemaker complications. *Anesthesiology* 1985; 63:319-322
105. Shellock FG, O'Neil M, Ivans V, Kelly D, O'Connor M, Toay L, Crues JV: Cardiac pacemakers and implantable cardioverter defibrillators are unaffected by operation of an extremity MR imaging system. *Am J Roentgenol* 1999; 172:165-170
106. Smith CL, Frawley G, Hamar A: Diathermy and the teletronics "META" pacemaker. *Anaesth Intens Care* 1993; 21:452-454
107. Sommer T, Valhaus C, Lauck G, von Smekal A, Reinke M, Hofer U, Block W, Traber F, Schneider C, Gieseke J, Jung W, Schild H: MR imaging and cardiac pacemakers: In vitro evaluation and in vivo studies in 51 patients at 0.5 T. *Radiology* 2000; 215:869-879
108. Sowton E, Gray K, Preston T: Electrical interference in non-competitive pacemakers. *Br Heart J* 1970; 32:626-632
109. Stoller ML, Stackl W, Langberg JJ, Griffin JC: Extracorporeal shock wave lithotripsy performed on woman with a cardiac pacemaker. *J Urol* 1988; 140:1510-1511

110. Theiss M, Wirth MP, Frohmuller HG: Extracorporeal shock wave lithotripsy in patients with cardiac pacemakers. *J Urol* 1990; 143:479-480
111. Trohman RG, Simmons TW, Moore SL, Firstenberg MS, Williams D, Maloney JD: Catheter ablation of atrioventricular junction using radiofrequency energy and a bilateral cardiac approach. *Am J Cardiol* 1992; 70:1438-1443
112. Vahlhaus C, Sommer T, Lewalter T, Schimpf R, Schumacher B, Jung W, Luderitz B: Interference with cardiac pacemakers by magnetic resonance imaging: are there irreversible changes at 0.5 Tesla? *PACE* 2001; 24:489-495.
113. Vaidyanathan S, Hirst R, Parsons KF, Singh G, Soni BM, Oo T, Zaidi A, Watt JW, Sett P: Bilateral extracorporeal shock wave lithotripsy in a spinal cord injury patient with a cardiac pacemaker. *Spinal Cord* 2001; 39:286-289
114. Val-Majias JE, Diehl T, Quesada LC: Long-term effects of RF ablation on pacemakers leads. *PACE* 1996; 19:635
115. Van Gelder B, Bracke FAL, El Gamal MIH: Upper rate pacing after radiofrequency catheter ablation in a minute ventilation rate adaptive DDD pacemaker. *PACE* 1994; 17:1437-1440
116. Van Gelder LM, El Gamal MIH: Magnet application, a cause of persistent arrhythmias in physiological pacemakers. *PACE* 1982; 5:710
117. Van Hemel NM, Hamerlijnck RPHM, Pronk KJ, Van der Venn EP: Upper limit ventricular stimulation in respiratory rate responsive pacing due to electrocautery. *PACE* 1989, 12:1720-1723
118. Vanerio G, Maloney J, Rashidi, McCowan R, Castle L, Morant V, Wilkoff B, Simmons T: The effects of percutaneous catheter ablation on preexisting permanent pacemakers. *PACE* 1990; 13:1637-1645
119. Vassolas G, Roth RA, Venditti FJ Jr: Effect of extracorporeal shock wave lithotripsy on implantable cardioverter defibrillator. *PACE* 1993; 16:1245-1248
120. Venditti FJ Jr, Martin D, Long AL, Roth RA: Renal extracorporeal shock wave lithotripsy performed in patient with implantable cardioverter defibrillator. *PACE* 1991; 14:1323-1325
121. Venselaar JLM, Van Kerkoerle HLJM, Vet AJTM: Radiation damage to pacemakers from radiotherapy. *PACE* 1987; 10:538-542
122. von Smekal A, Wolke S, Seelos KC, Hermans J, Lauch G, David P, Reiser M, Biersack HJ: Cardiac pacemaker in magnetic resonance studies: Influence of the static magnetic field on hardware components. *Eur Heart J* 1993; 14:335
123. Wajszczuk WJ, Mowry FM, Dugan NL: Deactivation of a demand pacemaker by transurethral electrocautery. *N Eng J Med* 1969; 280:34-35
124. Walz BJ, Reder RE, Pastore JO, Littman P, Johnson R: Cardiac pacemakers: does radiation therapy affect performance? *JAMA* 1975; 234:72-73
125. Webb CR, Lynch JS, Littleton RH, Kelly C, Goldberg AD: Effects of extracorporeal shock wave lithotripsy on cardiac pacemakers. *PACE* 1987; 10:444
126. Wilson JH, Lattner S, Jacob R, Stewart R: Electrocautery does not interfere with the function of the automatic implantable cardioverter defibrillator. *Ann Thorac Surg* 1991; 51:225-226
127. Wolfe DA, McCutcheon MJ, Plumb VJ, Kay N: Radiofrequency current may induce exit block in chronically implanted ventricular leads. *PACE* 1995; 18:919
128. Wong DT, Middleton W: Electrocautery-induced tachycardia in a rate-responsive pacemaker. *Anesthesiology* 2001; 94:10-11
129. Zullo M: Function of ventricular pacemakers during resuscitation. *PACE* 1990; 13:736-744