Comparison of Different Types of Myocardial Lead for LV Pacing

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Background: Because placement of a coronary sinus lead is not always possible for anatomical or technical reasons, surgical implantation of an epicardial LV lead is occasionally indicated. There are two different surgical approaches: a median sternotomy and a left-lateral mini thoracotomy, and both suture and screw types of myocardial lead have unique specification. Methods: The manipulation performance was compared between the two types of lead in 57 patients who underwent surgical implantation of an LV epicardial lead from 2000 to 2010. Serial changes in the LV pacing threshold were examined in 10 patients (suture and screw type in 5 patients each) at implantation, 1 week, and 3 months after implantation. Results: The median sternotomy approach allowed the suture type lead to be implanted easily and freely on any desired site on the high lateral LV wall, because of the widely opened operating field. Meanwhile, the left-lateral mini thoracotomy approach provided a limited field of the high lateral LV and allowed only the screw type lead to be implanted. There was no significant serial change in the pacing threshold in both suture and screw types and no significant difference between the types (suture type: 1.56±1.2 V, 1.42±1.0 V, 1.12±0.8 V, screw type: 1.56±1.3 V, 1.22±0.5 V, 1.36±0.4 V at implantation, 1 week, and 3 months after implantation, respectively). Conclusion: The suture type is recommended in the surgery through a median sternotomy and the screw type lead through a left-lateral mini thoracotomy. Keywords: myocardial lead, LV pacing