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**Coronary artery size and event free survival after transcatheter closure of coronary fistulas**

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**Introduction:** During followup after transcatheter closure of coronary fistulas, ischemic events appear to occur more frequently after fistula closure at older age. It has been inferred that earlier closure may ameliorate the risk of such late complications. Supporting evidence for an underlying mechanism is lacking.

**Methods:** We performed a retrospective review of our experience with transcatheter closure of coronary fistulas during infancy and childhood with emphasis on event-free survival and size change of the feeding coronary artery. Fourteen patients underwent transcatheter closure of coronary fistulas at age 10 days to 18 years (weight 3.6-64.8 kg). The fistula originated from the right coronary in 5, from the left in 7, and from both in 2. There were no major procedural complications. Followup ranged from 1 to 19 years.

**Results:** There were no ischemic events during followup. Recanalization of the fistula occurred in 1 patient and was successfully occluded in a second procedure. At the time of the procedure, the feeding coronary artery measured 3.2-9.0 mm in diameter by angiography and 3.6-8.3 mm by echocardiography. At latest followup, the echocardiographic diameter of the former feeding coronary measured 3.3-8.2 mm, suggesting only minimal regression in the size of the feeding vessel. The patient with recanalization had an increase in the size of the feeding coronary from 7.0 to 8.5 mm over 3 years. Our findings suggest that there is little regression in the size of the feeding coronary during followup but closure of the coronary fistula appears to prevent a size increase.

**Conclusions:** The benefit of coronary fistula closure at early age may be prevention of further coronary dilatation and allowing patients to grow into the size of their feeding coronary vessel thus decreasing the risk of thrombotic events.