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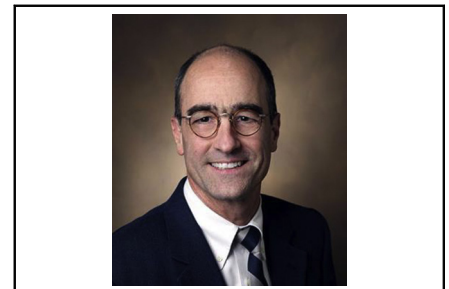


## Commentary: Right ventriculotomy: Less is still more

David P. Bichell, MD

Late right ventricular impairment has been the impetus to spare infundibular muscle wherever possible in the repair of tetralogy of Fallot and other corrections that require a conduit or infundibular patch.<sup>1</sup> Recognizing the potential for deleterious effects of infundibular resection in a systemic right ventricle in hypoplastic left heart syndrome palliation too,<sup>2</sup> Tweddell introduced a muscle-sparing method for right ventricle-to-pulmonary artery conduit construction, with minimal infundibular incision, ringed polytetrafluoroethylene (PTFE) introduced by the dunk technique, then secured by minimally disruptive epicardial sutures.<sup>3,4</sup> Ringed PTFE as conduit for the Sano modification of the Norwood stage 1 operation has been in broad use since, with evidence for reduced conduit reintervention and possibly resulting in better pulmonary artery growth.<sup>5,6</sup> Although there is evidence for fewer interstage reinterventions with the use of ringed PTFE, late ventricular dysfunction or atrioventricular valve insufficiency has not been consistently demonstrated to be different between no ventriculotomy (aortopulmonary shunt or hybrid approaches) and the Sano modification with ventriculotomy.<sup>7</sup>

Bhatla and colleagues<sup>8</sup> compare effects of 2 methods of Sano conduit construction on late right ventricular function, showing significantly worse right ventricular fractional area change for patients who underwent right ventricular infundibular muscle resection with hooded, nonringed PTFE conduit anastomosis compared with a muscle-sparing



David P. Bichell, MD

### CENTRAL MESSAGE

A ringed polytetrafluoroethylene conduit, placed by various methods of muscle-sparing incision, may preserve right ventricle function after the Norwood stage 1 palliation.

ringed PTFE conduit. These data support the heretofore inconsistently demonstrated late effects of infundibular resection in the setting of the Sano conduit, and support the logical tenet that minimal muscle disruption is a good thing whether in the setting of tetralogy of Fallot repair or Sano.

The same group previously described an endocardial-to-epicardial passage of the ringed PTFE (retrograde through the pulmonary valve), as an alternative to the epicardial-to-endocardial direction of the dunk technique, naming the former the periscopic approach.<sup>9</sup> Other than the direction of passage for the ringed PTFE conduit, the 2 methods are identical, with no infundibular muscle resection and only epicardial tacking sutures to prevent conduit migration or leak.

Although the authors demonstrate a compelling difference in late function when comparing full-thickness anastomosis of nonringed PTFE with muscle resection to a muscle-sparing approach using ringed PTFE, there are no data comparing dunk and periscopic directions of passage for the ringed conduit. Absent supporting data, the authors describe subjective advantages of the periscopic technique over the dunk technique, commenting that the dunk technique “involves a bigger incision, greater myocardial stretching, more resection of muscle, and perhaps deeper suturing ...”, and “the rings can often get caught onto the RV myocardium and result in injury.”<sup>8</sup> It is unsupported speculation to suggest that antegrade versus retrograde

From the Department of Cardiac Surgery, Monroe Carell Jr. Children’s Hospital, Vanderbilt University Medical Center, Nashville, Tenn.

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Address for reprints: David P. Bichell, MD, Department of Cardiac Surgery, Monroe Carell Jr. Children’s Hospital, Vanderbilt University Medical Center, 5247 Doctors’ Office Tower, 2200 Children’s Way, Nashville, TN 37232-9292 (E-mail: david.bichell@vumc.org).

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insertion of the conduit has any late differentiating significance.

Bhatla and colleagues<sup>8</sup> add support to the idea that less is more in a right ventriculotomy, and reiterate a technique for muscle-sparing ringed PTFE conduit construction. The authors describe relevant evidence of a difference between the 2 methods, but should be careful extrapolating findings to a third.

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