The blue–red divide: What approach?

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Central Message

The surgical approach for a right pulmonary artery to left atrial arteriovenous fistula should be tailored to a patient's anatomy and to a surgeon's comfort level with an open versus VATS technique.

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Thomas and colleagues¹ present the remarkable case of a 12-year-old boy who has mild cyanosis and dyspnea on exertion due to a right pulmonary artery to right pulmonary vein fistula in the setting of an intact atrial septum. Their approach of stapling and dividing the fistula using a video-assisted thoracoscopic surgery (VATS) procedure merits recognition in that their patient experienced an expeditious recovery and discharge within 2 days. However, is this always the best surgical approach?

Given the risk of complications such as hypoxemia, infection, hemorrhage, or paradoxical embolism, significant pulmonary arteriovenous fistulae require treatment. Most often, the first line of therapy is catheter-based embolization. If this is not feasible, surgery is necessary. The surgical approach to managing this rare finding has been used by other groups as well. For example, Reichert and colleagues² describe a VATS approach for a lingular resection of a pulmonary arteriovenous malformation in a 76-year-old patient. Their patient had a relatively short hospital stay and was discharged on postoperative day 6. Yakut and colleagues³ describe a case of an arteriovenous fistula between the right pulmonary artery and left atrium in a newborn infant that resulted in cyanosis and heart failure. In this case, transcatheter closure was not possible and a surgical approach was needed. Luo and colleagues⁴ describe 3 patients presenting with the rare finding of a right pulmonary artery to left atrial fistula. All 3 patients were men aged 23, 7, and 14 years. One patient underwent a transcatheter device closure, whereas the other 2 underwent surgical closure. Of the 2 requiring surgical closure, 1 required cardiopulmonary bypass. From these published reports we see a variety of surgical approaches for this rare condition.

Although Thomas and colleagues¹ purport an amazing result in their 12-year-old patient by using a VATS

approach, it should be noted that any surgical approach should be tailored to a patient's anatomy and to the surgeon's comfort level with an open versus VATS technique. For those groups that achieve facility with VATS techniques, this may be reasonable. However, one needs to keep in mind that these arteriovenous fistulae can be fragile in nature and for those not comfortable with VATS techniques, the time-tested open technique may provide the safest approach. Regardless, Thomas and colleagues¹ report a commendable achievement in this young patient that continues to add to the published surgical experience for this rare finding.

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