

Fig 4. Preimplant prosthetic leaflet histologic finding (hematoxylin and eosin stain).

described in the literature. We report a patient with a FS bioprosthesis 8 years after implant with a dysfunction unrelated to tissue degeneration and due to mechanical damage secondary to blunt trauma. The histologic evaluation confirmed the absence of fibrotic degeneration or calcifications. The implantation of a sutureless bioprosthesis may be considered an interesting option in elderly redo patients. The reduced cardiopulmonary bypass and cross-clamp times may improve the postoperative course, with benefits in shorter hospitalization and a lower incidence of postoperative complications.

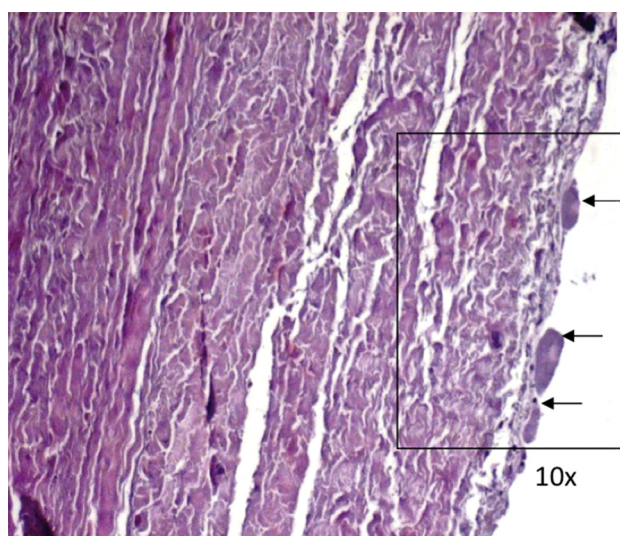


Fig 5. Postexplant prosthetic leaflet histologic finding (hematoxylin and eosin stain). Cells and tissue are similar to preimplant findings, without degeneration or calcifications. Amorphous aspecific surface deposits are seen (arrows).

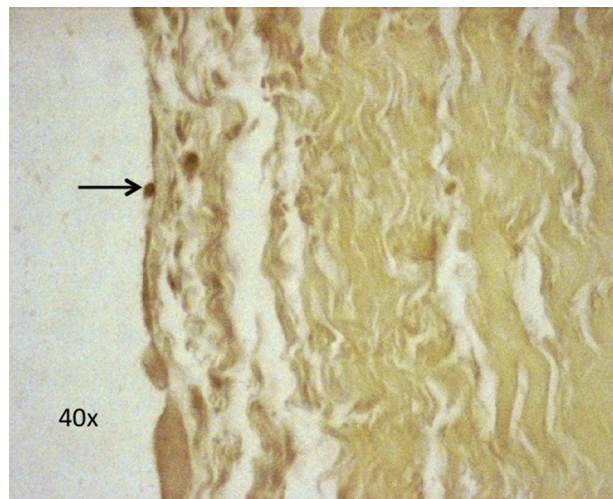


Fig 6. Postexplant prosthetic leaflet histologic finding (Alizarin calcium stain). Very small calcium deposits are seen (arrows).

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Poor Left Ventricular Performance in a Child With Coronary Sinus Stenosis: Successful Surgical Repair

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Atresia or stenosis of the coronary sinus is a rare congenital defect that can cause marked clinical

manifestations, depending on the presence of concomitant anomalies securing adequate coronary venous outflow. We describe a 4.5-year-old boy admitted to the clinic with signs of congestive heart failure (left ventricular ejection fraction, 29%). His condition had deteriorated during the previous 4 months. The examination revealed stenosis of the coronary sinus ostium, coronary sinus-to-left atrium fistula, mitral regurgitation of the second grade, and moderate pulmonary hypertension. The surgical intervention consisted of enlargement and plastic reconstruction of the coronary sinus as well as closure of the coronary sinus-to-left atrium fistula. The hospital period was uneventful. The left ventricular ejection fraction at discharge increased up to 50%.

(Ann Thorac Surg 2015;100:1096–9)

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Atresia or stenosis of the coronary sinus is traditionally considered a rare congenital anomaly. However, the fact that at least several new cases have been reported recently may indicate that it is not as rare as suggested [1–4]. The variability of clinical manifestations in coronary sinus atresia (CSA) depends on the presence of concomitant anomalies securing adequate coronary venous outflow. The most frequent concomitant anomaly is persistent left superior vena cava (PLSVC) [2, 4, 5] that allows patients to remain asymptomatic for many decades [3]. Any interruption of blood flow via PLSVC or the mismatch between actual flow and the patient's individual physiologic needs can cause severe hemodynamic abnormalities and deterioration of the condition [6, 7]. If the ventricular performance is compromised or division of PLSVC is required during bidirectional cavopulmonary shunt or Fontan procedure, then different methods of repair of CSA are suggested [1, 3, 8]. We present the case of a symptomatic pediatric patient with stenosis of the coronary sinus ostium and a fistula between the coronary sinus and the left atrium that required surgical repair because of poor ventricular performance.

A 4.5-year-old boy was hospitalized with a shortage of breath and fatigue after minor exercise. His condition had deteriorated during the previous 4 months. Physical examination revealed a congestive heart failure with the liver enlarged by 3 cm. Echocardiography showed situs solitus, levocardia, normal atrioventricular and ventriculoarterial connections, and intact atrial and ventricular septa. The left ventricular end-diastolic volume was increased to 96 mL/m² and the ejection fraction lowered

to 29%. Mitral regurgitation of the second grade was recorded. Both coronary arteries were normal size. There was systolic and diastolic flow in the area of the coronary sinus with a 20 mm Hg systolic pressure gradient. The computed tomography with contrast showed the coronary sinus with the ostium narrowed to 2–3 mm that opened to the right atrium (Fig 1). There was also a coronary sinus-to-left atrium fistula (12 mm in length and 6 mm in width) that was narrowed to 2 mm at the origin from the coronary sinus. Aforementioned findings were confirmed by magnetic resonance imaging. Electrocardiography did not reveal any ischemic changes. However, myocardial scintigraphy showed abnormal isotope distribution with decreased accumulation in medial segments of the left ventricular anterior-lateral wall. Cardiac catheterization and angiography confirmed the communication between the coronary sinus and the left atrium and the stenosis of the coronary sinus (Fig 2). The mean pressure gradient between the coronary sinus and the right atrium reached 16 mm Hg (absolute numbers were 25 and 9 mm Hg, respectively). The pulmonary arterial pressure reached 53/22 mm Hg (mean, 32 mm Hg) mm Hg. Preoperative diagnosis was as follows: stenosis of the coronary sinus ostium, coronary sinus-to-left atrium

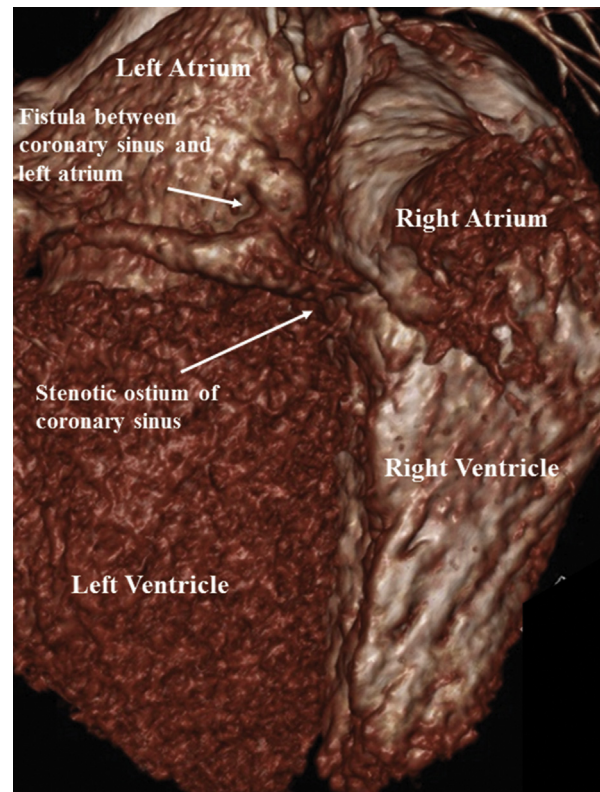


Fig 1. Computed tomography with contrast. The coronary sinus is stenotic at its opening to the right atrium. The communication between the coronary sinus and the left atrium is seen.

Accepted for publication Nov 24, 2014.

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