ened the strand development to a similar embryologic process in bicuspid aortic valve cases. The causes of such a strand formation may be more complicated than those of previously reported cases associated with bicuspid aortic valves. Ours and other cases had a strand between the fused valve and the aortic wall, whereas their case had three pairs of strands in three leaflets. It is not easy to explain these formations as embryogenic remnants. As Nakajima and associates[1] mentioned, however, their case may indicate another aspect for aortic valve surgery. Suspending a prolapsed aortic valve between its leaflets and the aortic sinotubular junction with a paired artificial strands may be an option for aortic valve repair. Additional case reports and hemodynamic and physiologic confirmation will be necessary.

Yoshio Misawa, MD
Shin-ichi Oki, MD
Katsuo Fuse, MD
Division of Cardiovascular Surgery
Jichi Medical School
3311-1 Yakushiji, Minami-kawachi
Tochigi, 329-0498, Japan

References

1. Nakajima M, Tsuchiya K, Naito Y, Hibino N, Inoue H. Aortic regurgitation caused by rupture of a well-balanced fibrous strand suspending a degenerative tricuspid aortic valve. *J Thorac Cardiovasc Surg*. 2002;124:843-4.
2. Misawa Y, Hasegawa T, Oyama H, Sudo H, Hasegawa N, Kamisawa O. Congenital bicuspid aortic valve with regurgitation—a rare case showing a fibrous band between the conjoined cusp and the ascending aorta. *J Jpn Assn Thorac Surg*. 1993;41:2156-9.
doi:10.1016/S0022-5223(03)00345-3

Do macrophages and monocytes impede regeneration of transplanted cardiomyocytes?

To the Editor:

I read with great interest the article of Tomita and colleagues[1] entitled "Improved Heart Function With Myogenesis and Angiogenesis After Autologous Porcine Bone Marrow Stromal Cell Transplantation" in a recent issue of the Journal. My research team has had similar results in both our animal and clinical experiences. In our animal experience, however, a lack of fibrous tissue in the infarcted region after cell patch cardiomyoplasty and omentopexy procedures prompts me to believe that macrophages and monocytes may contribute importantly to the disappearance of fibrotic tissue, thus preventing the regeneration of the myocytes from progressing. I therefore wonder whether similar findings were seen in Tomita and colleagues[1] cell transplant experiments. I would greatly appreciate a response to this inquiry.

S. Taheri, MD
Suite C
9095 Main St
Clarence, NY 14031

Reference

1. Tomita S, Mickle DA, Weisel RD, Jia ZQ, Tumiati LC, Allidina Y, et al. Improved heart function with myogenesis and angiogenesis after autologous porcine bone marrow stromal cell transplantation. *J Thorac Cardiovasc Surg*. 2002;123:1132-40.
doi:10.1016/S0022-5223(03)00351-9

Problems in assessment of serum carcinoembryonic antigen levels in cancers

To the Editor:

In a recent issue, Saito and colleagues[1] reported on a multicenter retrospective review of surgery for pulmonary metastasis from colorectal cancer. They concluded that the status of the hilar or mediastinal lymph nodes and prethoracotomy carcinoembryonic antigen (CEA) level were significant independent prognostic factors. I believe these findings are useful in the follow-up of patients who have undergone resection of pulmonary metastasis of colorectal cancer. Prethoracotomy serum CEA levels are also a prognostic indicator in non–small cell lung cancer when the cutoff level is defined as 6. 9 ng/dL on the basis of the 95% specificity level for benign lung disease.[2]

There are many kits to measure serum CEA levels. The antibodies used by the various methods vary. Thus there are some cross-reactive normal antigens that are calculated by some kits, and the maximum normal serum level of CEA ranges from 2.5 ng/dL to 6.9 ng/dL.[3] In the study that Saito and colleagues[1] conducted, 10.0 ng/dL was used as a cutoff level that influenced the prognosis. This level is from 1.4 times to 4 times the upper limit of normal for serum CEA level.

In a multicenter study, the variable for serum CEA level should be considered normal or high according to a cutoff level established by each individual institution. Otherwise, the specification of a single type of kit to measure serum CEA levels is needed when a specific serum CEA level is defined as the cutoff level. Either method, I believe, will make serum CEA levels a more significant prognostic indicator for patients with lung cancer or patients with pulmonary metastases from colorectal cancer.

Noriyoshi Sawabata, MD
Division of Surgery
Toneyama National Hospital
Osaka, Japan

References

1. Saito Y, Omiya H, Kohno K, Kobayashi T, Itoi K, Teramachi M, et al. Pulmonary metastasectomy for 165 patients with colorectal carcinoma: a prognostic assessment. *J Thorac Cardiovasc Surg*. 2002;124:1007-13.
2. Sawabata N, Ohta M, Takeda S, Hirano H, Okumura Y, Asada H, et al. Serum carcinoembryonic antigen level in surgically resected clinical stage I patients with non–small cell lung cancer. *Ann Thorac Surg*. 2002;74:174-9.
3. Kuroki M, Haruno M, Arakawa F, Wakisaka M, Matsuoka Y. Reaction profiles of seven enzyme immunoassay kits for carcinoembryonic antigen (CEA) analysed with purified preparations of CEA and related normal antigens. *Clin Biochem*. 1992;25:29-35.
doi:10.1016/S0022-5223(03)00351-9

Reply to the Editor:

My coauthors and I appreciate the comments of Sawabata concerning our article. As he states, during the long term of our retrospective study, several methods, such as enzyme immunoassay and radioimmunoassay, were used to measure serum carcinoembryonic antigen (CEA) levels. Many kits to measure serum CEA levels are available in Japan, and results vary with each assay. This leads to confusion among physicians when evaluating serum values detected by the different assay kits. One does need to pay attention when evaluating such archival data stored in medical records.

In a multi-institutional study, ideally all data from various institutions would be measured by the same method with identical assay kits. However, it may be difficult to measure serum CEA with the same assay kit in each institution for various reasons, including cost considerations and available assay equipment. Moreover, the kits commonly used in Japan may be different from ones used in the United States or Europe, also making it difficult to compare the data among them. It may be necessary to set up an international committee to solve the is-