References

1. Canver CC, Voytovich MC. Resection of an unsuspected primary pulmonary choriocarcinoma. *Ann Thorac Surg.* 1996;61:1249-51.
2. Sridar KS, Saldana MJ, Thurer RJ, Beattie EJ. Primary choriocarcinoma of the lung: report of a case treated with intensive multimodality therapy and review of the literature. *J Surg Oncol.* 1989; 41:93-7.
3. Chen F, Tatsumi A, Numoto S. Combined choriocarcinoma and adenocarcinoma of the lung occurring in a man: a case report and review of the literature. *Cancer.* 2001;91:123-9.
4. Tanimura A, Natsuyama H, Kawano M, Tanimura Y, Tanaka T, Kitazono M. Primary choriocarcinoma of the lung. *Hum Pathol.* 1985;16:1281-4.
5. Zapatero J, Bellon J, Baamonde C, Aragoneses FG, Cubillo J, Orusco E, et al. Primary choriocarcinoma of the lung: presentation of a case and review of the literature. *Scand J Thorac Cardiovasc Surg.* 1982; 16:279-81.
6. Aparicio J, Oltra A, Martinez-Moragon E, Llorca C, Gomez-Aldaravi L, Pastor M. Extragonadal nongestational choriocarcinoma involving the lung: a report of three cases. *Respiration.* 1996;63:251-3.

***Brucella melitensis* endocarditis of ventricular septal defect patch: Successful surgical treatment without replacement**

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B*rucella melitensis* endocarditis is a rare but fatal complication of brucellosis. It is usually located on native and prosthetic valves.¹ Endocarditis of a prosthetic ventricular septal defect (VSD) patch is rare. Only one case of treatment by means of replacement of the prosthetic patch and antibiotic administration has been reported.² When present, removal and replacement of the infected tissue or prosthetic material has been recommended in addition to long-term antibiotic treatment to achieve a cure.^{3,4} Replacement of the prosthetic patch might not always be necessary, as was the case in our experience.

Clinical Summary

A 12-year-old boy with cyanosis and growth retardation was given a diagnosis of tetralogy of Fallot. He underwent a successful total correction operation with Dacron patch repair of a VSD with interrupted pledgeted sutures and transannular Dacron patch right ventricular outflow tract reconstruction. The early postoperative period was uneventful, and no residual VSD was found at early postoperative echocardiography. He was discharged to home, but 2 weeks later, he was readmitted to the hospital with fever and arthralgia. The initial echocardiography revealed a very small hole at the edge of the VSD patch and no apparent vegetation. At that time, blood cultures did not show growth of any microorganism. Wide-spectrum antibiotics and antipyretic treatment were started. The erythrocyte sedimentation rate was 95 mm/h, and the C-reactive protein level was 3+. After 1 week, his general status had

worsened, and symptoms of congestive heart failure and a harsh pansystolic murmur had appeared. Repeat echocardiography showed the presence of a large recurrent VSD but no visible vegetation (Figure 1). Cardiac catheterization revealed a pulmonary/systemic flow ratio of 2.2 and a pulmonary artery pressure of 45 mm Hg. His culture results were still negative. He received vancomycin and amikacin treatments for 10 days before surgical repair. During reoperation, a large hole and extensive vegetation were found at the muscular septal edge of the prosthetic patch. The pledget-supported sutures were pulled off through the torn myocardium. Because the general status of the patient was poor and he might not tolerate long crossclamp and cardiopulmonary bypass (CPB) periods and because the presence of *B melitensis* endocarditis was not known at this stage, we decided to perform extensive debridement of the vegetation and reattachment of the same patch to the septum instead of resection and replacement of the prosthetic patch. After reattachment of the patch with 4 pledgeted sutures, the heart was deaired, and the crossclamp was removed. After rewarming, the patient was easily weaned from CPB. Cross-clamp and CPB times were 46 and 71 minutes, respectively. The postoperative period was uneventful. Vancomycin and amikacin treatments were continued for another 10 days. After the cultures from the debrided tissue and blood revealed *B melitensis* endocarditis, those antibiotics were replaced with 200 mg/d doxycycline and 600 mg/d rifampin (INN: rifampicin), which were continued for 4 months. No complications were seen during the postoperative period. After antibiotic treatment was completed, the patient was totally symptom free. He has completed his second postoperative year without additional antibiotic treatment, and his blood culture and serologic test results are negative. His most recent echocardiography at 24 months postoperatively showed an intact VSD patch without vegetation or residual VSD. He is considered to be totally cured.

Comment

Brucellosis is seen more frequently in Mediterranean, Arabic peninsula, Indian subcontinent, and South-Central American regions. It is a zoonosis and is transmitted to human patients by means of

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Received for publication March 1, 2002; accepted for publication April 2, 2002.

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J Thorac Cardiovasc Surg 2003;125:196-7

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0022-5223/2003 \$30.00+0

doi:10.1067/mtc.2003.114

Figure 1. Echocardiographic view of the recurrent VSD. *RV*, Right ventricle; *LV*, left ventricle; *RA*, right atrium; *LA*, left atrium.

direct contact with infected animals and, most frequently, through ingestion of unpasteurized dairy products. Symptoms generally begin within 2 to 4 weeks after inoculation. Endocarditis accounts for the majority of brucellosis-related deaths and develops in less than 2% of patients with brucellosis.¹ Treatment of *B melitensis* endocarditis is still a controversial issue. Although early surgical removal and replacement of the infected valves, as well as aggressive antibiotic treatment, has been recommended,¹⁻⁴ it was also reported that antibiotic treatment alone could be adequate.⁴

In our case the patient underwent reoperation without delay, although the general condition of the patient was not suitable for cardiac surgery, and the presence of the *B melitensis* endocarditis was not known. When the situation of the patient was justified, an unconventional treatment was elected, and the VSD patch was not removed completely. After aggressive debridement, sutures were placed to reattach the patch over the VSD easily and rapidly. After a sufficient and long period of antibiotic treatment, *B melitensis* infection was totally eradicated.

In conclusion, although *B melitensis* endocarditis is a potentially fatal situation, surgical intervention without delay and ap-

propriate antibiotic treatment can be successful. Extensive debridement of the vegetation might be adequate and complete removal of the prosthetic material might not be needed in all cases.

References

1. Young EJ. *Brucella* species. In: Mandell GL, Bennett JE, Dolin R, editors. Principles and practice of infectious diseases. Philadelphia: Churchill Livingstone; 2000. p. 2386-93.
2. al-Kasab S, al-Fagih MR, al-Yousef S, Ali Khan MA, Ribeiro PA, Nazzal S, et al. *Brucella* infective endocarditis. Successful combined medical and surgical therapy. *J Thorac Cardiovasc Surg.* 1988;95:862-7.
3. Uddin MJ, Sanyal SC, Mustafa AS, Mokaddas EM, Salama AL, Cherian G, et al. The role of aggressive medical therapy along with early surgical intervention in the cure of *Brucella* endocarditis. *Ann Thorac Cardiovasc Surg.* 1998;4:209-13.
4. Quiroga J, Miralles A, Farinola T, Obi C, Granados J, Fontanillas C, et al. Surgical treatment of *Brucella* endocarditis. *Cardiovasc Surg.* 1996;4:227-30.
5. Cohen N, Golik A, Alon I, Zaidenstein R, Dishy V, Karpuch J, et al. Conservative treatment for *Brucella* endocarditis. *Clin Cardiol.* 1997; 20:291-4.