PREGNANCY IN A PATIENT AFTER MITRAL VALVE REPLACEMENT WITH A PORCINE BIOPROSTHESIS

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SUMMARY

The course of two pregnancies in a woman, who had previously undergone mitral valve replacement with a porcine bioprosthesis, is reported. The present case suggests that porcine heterografts are to be considered as the most suitable cardiac valve substitutes in females of childbearing age, since anticoagulants are not needed, avoiding therefore the risks related to both an incorrect anticoagulation and to the recognized teratogenic effect of coumarin drugs.

Young women of childbearing age, who need prosthetic heart valve replacement, represent a particular problem. Pregnancy in patients with a mechanical prosthesis has been associated to a high incidence of complications related to the use of anticoagulants ([1-6]); for this reason porcine heterografts have been considered to be the prostheses of choice in such patients, since they do not require long-term anticoagulation ([4]).

This paper presents the case of a female patient who became pregnant twice, following mitral valve replacement (MVR) with a porcine xenograft.

CASE REPORT

A 35-year-old female had undergone closed mitral commissurotomy in 1975 because of rheumatic mitral stenosis. One year later, due to recurrence of exertional dyspnea, she was readmitted to our Unit, where a cardiac catheterization evidenced the presence of mitral restenosis with mild pulmonary hypertension. A few months later she underwent successful MVR with a glutaraldehyde-preserved Hancock porcine bioprosthesis (Hancock Lab. Inc., Anaheim, Calif.). The postoperative period was uncomplicated and she was discharged on a regimen of digoxin, diuretics and sodium warfarin; two months later oral anticoagulant administration was discontinued.

Approximately 18 months after operation she became pregnant; she was in chronic atrial fibrillation and her cardiac function had considerably improved. Pregnancy was carried out without any complication; clinical evaluation during gestation revealed absence of signs of congestive heart failure. In October 1978 she delivered at term a normal, healthy baby with a cesarean section, performed under general anesthesia. She tolerated labor and delivery uneventfully; subsequently she remained asymptomatic and continued to enjoy a normal life.

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Approximately one year after delivery she became pregnant for the second time. During the second gestation excessive gain of weight was noted, which was satisfactorily managed with a balanced diet, sodium restriction and diuretic therapy; she was still on digoxin and oral anticoagulants were not given.

One week before the expected date of delivery she was hospitalized. On admission, clinical evaluation showed absence of significant cardiac murmurs and no evident signs of cardiac failure. Wide spectrum antibiotic prophylaxis was started and a central venous line was inserted. Two days later, under general anesthesia, a cesarean section was performed; during the entire procedure normal blood and central venous pressures were recorded and no alteration of the maternal and fetal heart rates occurred. The patient delivered without complications a normal baby.

At present, 6 years after surgery and 4 years after the second delivery, she is asymptomatic; at the last follow-up visit no signs of bioprosthetic dysfunction were apparent. A remarkable aspect of the clinical history of this patient is that no systemic embolic episodes have occurred either postoperatively or during and after the two pregnancies.

DISCUSSION

Pregnancy in patients with a mechanical prosthesis may be particularly hazardous due to the risks related to the administration of oral anticoagulants; these include thromboemboli and hemorrhage as consequence of both an incorrect anticoagulation ([1-7]) and the hypercoagulability state typical of pregnancy ([7]), and fetal abnormalities due to the potential teratogenic effect of coumarin drugs ([6, 8]). Accordingly, the use of porcine heterografts in this subset of patients has been recently advocated ([4]), since with this particular device long-term anticoagulation is not required. Despite this, however, we were able to find only one previous report concerning the course of pregnancy in a patient with porcine xenografts ([9]).

The case herein presented differs from that reported by Beadle and Associates ([9]) in that our patient carried out uneventfully two pregnancies following MVR with a Hancock valve. Despite she remained in chronic atrial fibrillation postoperatively and throughout both pregnancies, no oral anticoagulants were given and no embolic episodes ensued.

This case confirms that pregnancy, labor and delivery can be well tolerated by women who have undergone previous open heart surgery, the clues to a successful gestation being a prompt recognition of the early signs of cardiac failure, their correct and timely management, and institution of antibiotic prophylaxis for subacute bacterial endocarditis ([3, 9]). Furthermore, it suggests that the porcine bioprosthesis should be considered as the ideal cardiac valve substitute in young females of childbearing age.

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