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Thrombosis of a St. Jude Medical Cardiac Valve in the Mitral Position

— case report —

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〈국문초록〉

St. Jude 기계판막에 의한 승모판 대치술후 발생한 판막의 혈전증 1례

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St. Jude 기계판막은 판막대치술후 항응고제를 사용하지 않더라도 그로 인한 합병증의 발생빈도가 다른 기계판막에 비해 낮다는 보고가 있을만큼 우수한 것으로 알려져 있다.

경희대학교 흉부외과 교실에서는 St. Jude 기계판막에 의한 승모판 대치술후 항혈소판 제제에 의한 항응고제 치료후 발생한 혈전에 의한 판막폐쇄부전 1례를 경험하여 St. Jude 기계판막을 사용한 후 발생할 수 있는 혈전등에 의한 합병증의 빈도와 진단 그리고 예방방법등을 문헌고찰과 함께 보고하는 바이다.

— Abstract —

Recently, we have experienced a case of acute thrombotic obstruction of the St. Jude Medical cardiac valve in the mitral position of the Heart.

We will discuss about the incidence, recognition and preventive measurement of the thrombotic St. Jude Medical valve with the review of literatures.

The St. Jude Medical cardiac valve prostheses is mostly selected in the clinical fields. In vitro trials demonstrated its superior hemodynamic property compared with other clinically available cardiac prostheses[1].

There are, however, no clear guidelines for the use of anticoagulation in patients with the St. Jude Medical cardiac prostheses.

The pyrolytic carbon construction of these prostheses is reputed to render them antithrombogenic and possibly superior to other prostheses in this clinical field.

Early reports of the Implanted St. Jude Medical cardiac prostheses have shown the lower thrombogenicity than the other mechanical ones, but conversely some authors have reported its thrombosis in the mitral position despite adequate anticoagulation therapy[2,3].

We have experienced a patient in whom extensive thrombus formation caused mitral valvular

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stenosis 3 years after the Mitral valve replacement despite adequate anticoagulation therapy with antiplatelet agents, aspirin and ticlid.

In Apil 1988, a 49-years old man was admitted to the Department of Cardiovascular Surgery with severe shortness of breath, peripheral pitting edema and unconsciousness.

In May 1985, the patient underwent mitral valve replacement with a 29mm. St. Jude Medical cardiac valve due to rheumatic mitral insufficiency, and anticoagulation was started from that time with warfarin.

In October 1985, he was readmitted to the Department of Neurosurgery because of the basal ganglial hematoma. So, he had taken with antiplatelet agents only, aspirin and ticlid because of avoiding the further hemorrhagic complication from warfarin.

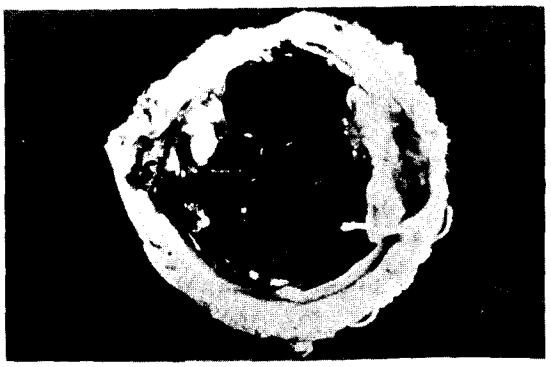
But he was negligent of taking those drugs at his own discretion after the discharge and the follow up check was not made from that time.

On physical examination he was diaphoratic and pale. Body temperature was normal and pulse rate was 128/min. Respiration rate was 36/min and rales were heard at both entire lung fields. Blood pressure was 160/100 mmHg. Diastolic murmur was heard at the left sternal border. Chest roentgenogram demonstrated marked cardiomegaly with pulmonary edema and small amount of effusion on the right pleural cavity.

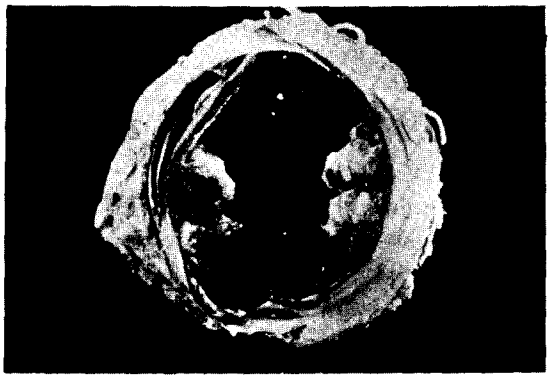
Echocardiogram revealed marked restriction of motion of the mitral leaflets. He was repaired the mitral valve replacement with the diagnosis of acute thrombotic obstruction of St. Jude Medical valve.

In the operating field, both leaflets of the prostheses were almost struck in the closed position by thrombus exteding from both hinge points and opened to only about 20 % of their expected excursion(Fig. 1).

The St. Jude cardiac valve was excised and replaced with a 29 mm Ionescu Shiley tissue prostheses.



Opened leaflets



Closed leaflets

Fig. 1.

Although he was hemodynamically stable postoperatively, he had to receive hemodialysis due to acute renal failure developed on the second operative day. After all, he was dead on the 22 postoperative day because of respiratory and renal failure.

Comment)

The St. Jude Medical cardiac valve was first introduced in the clinical fields in october, 1977. Since that time, it is undergoing clinical trial widely.

It is known to better than other mechnical valves in view of its various characteristics such as effective large orifice, low profile, central laminar flow and antithrombogenic property[4].

Also it has less pressure gredient between front and rear of the valve than those of Starr-Edward

and Lillehei-Kaster prostheses[5,6].

Incidence of late(>30days) thromboembolism per 100 patient-year is 3.6 for the St. Jude Medical cardiac valve and other mechnical prostheses are slightly high in that incidence[7].

It was reported to require only short term anticoagulation under special circumstances(young women or patient over 75 years with a St. Jude cardiac valve in aortic position or children as recently reported[8].

But there are some reports about necessity for the anticoagulation. Lynn has asserted that St. Jude Medical valve is suitable for young age because of its characteristics of low profile and good hemodynamics but anticoagulation should be needed to reduce the mortality be related to valve thrombus[9].

Furthermore there are referances that the incidence of valve thrombosis and systemic embolism were significantly high in patients without anticoagulation therapy[10].

Long-term anticoagulation is the most important variable affecting the incidence thromboembolism. It is the best way to reduce the thromboembolic complications that good control of prothrombin times and routine follow up checks.

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