

*Special Issue*

# 관상동맥질환의 수술적 치료

## Surgical Treatment of Coronary Artery Disease

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### Abstract

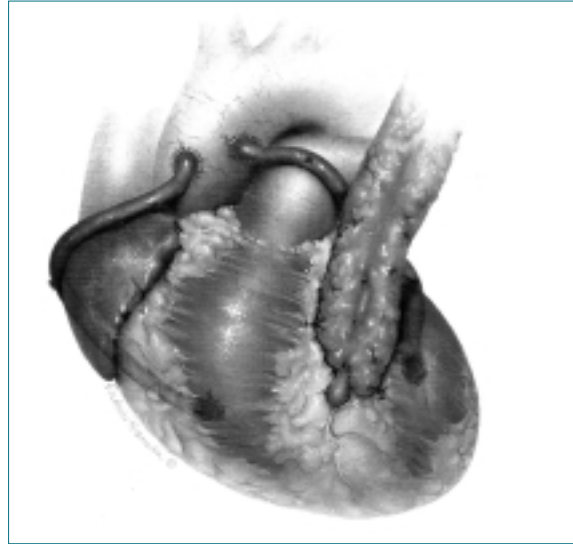
The main goals of coronary artery bypass grafting (CABG) are to relieve chest pain and to improve quality of life by bypassing all coronary artery segments with severe stenosis. It is a common surgical procedure on the heart. Until recently, most surgeons have used cardiopulmonary bypass (CPB) to provide a motionless and bloodless operation field to accomplish optimal microvascular anastomoses. However, CPB may have adverse sequelae, such as cerebrovascular accident, renal failure, and higher intellectual impairment, because of an inflammatory response caused by the blood circulating through the extracorporeal circuit and the formation of microemboli. In recent years, advances in retractor - stabilizer systems and in operative techniques that allow an access to all coronary artery segments have brought a growing attention to beating heart surgery without CPB (off - pump coronary artery bypass grafting, OPCAB). OPCAB significantly lowers in - hospital morbidity and mortality compared with CABG. Heart failure after myocardial infarction poses a growing medical challenge as the life expectancy continues to increase. Recently it affects 0.4~1% of the overall population and 5% of elderly subjects. Although cardiac transplantation, a gold standard surgery for heart failure, provides excellent therapeutic outcomes in some patients with terminal stage of the disease, the overall outcomes are limited by the scarcity of donor organs, reduced long - term survival, and co - morbid conditions. Recently the efficacies of left ventricular volume reduction surgery, mitral valve repair, and bone marrow cell transplantation in improving the heart function in infarcted myocardium of a failing heart have been extensively evaluated and were shown to result in good outcomes.

**Keywords :** **Coronary artery bypass grafting; Off - pump coronary artery bypass grafting;**

**Left ventricular volume reduction surgery; Mitral valve repair;**

**Bone marrow cell transplantation**

가  
5, 6 가  
가  
가  
가



1.

가 가

, 가

(

34%

27%

full work-

ing

(2).

### (Coronary Artery Bypass Grafting, CABG)

가 가

가

(greater saphenous vein)

(radial artery),

(right gastroepiploic artery)

(left

and right internal mammary artery)

가

1

79% 50%

8.8

(1).

1 working 가

( 1).



OPCAB

patients)가

가 ,

(9~13).

OPCAB

가 (14),

가

가

가

2.

가

(graft)

.가

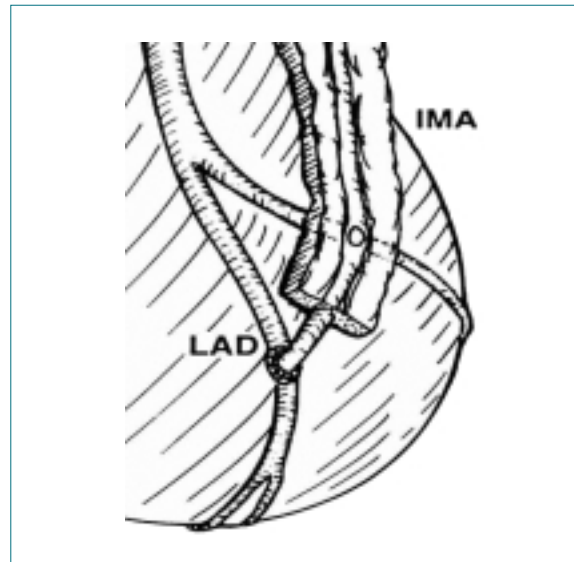
가

가

가

가

(high risk



2.

1)

(Sequential Artery or Vein Grafting)

가

가

1 85%, 5

75%, 10

50%

10 90%

5

.가

가

가

( 2).

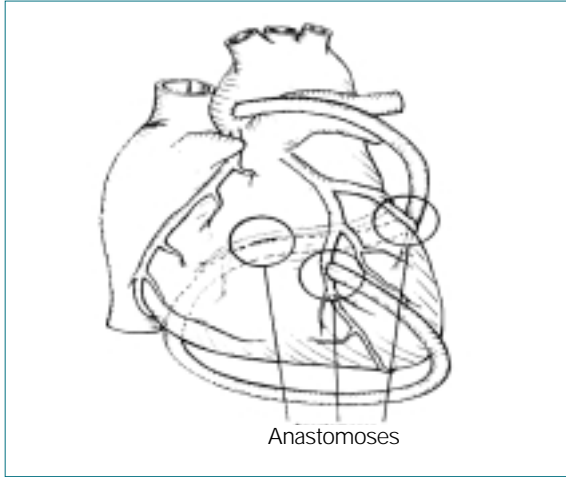
, 5

90%

,

(15).

save,



3.

가 가 . , Y 가 side by side end to side ( 4, 5). 95% (18~20).

**(Left Ventricular Volume Reduction Surgery)**

, anterior myocardial infarction

가 가 . 가

(elliptical shape) (spherical shape) , (twisting and untwisting) wall tension 가

, (16, 17) ( 3).

(LV : left ventricle) 가 .

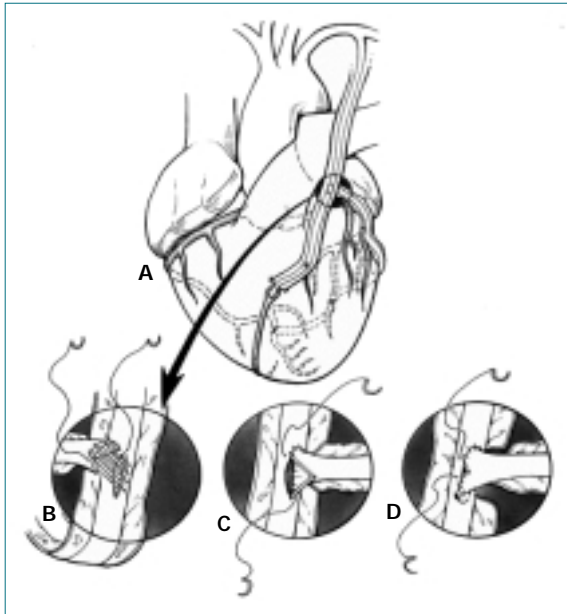
2) (Composite Graft)

(LV free wall) (nonresectable septum) , (akinetic region), (dyskinetic scar[aneurysm]) akinetic region dyskinetic

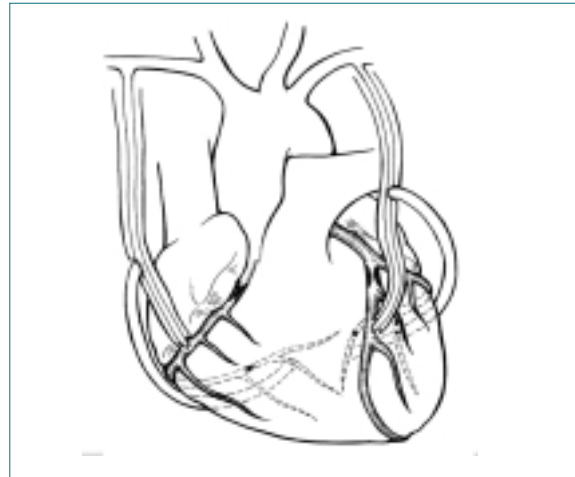
Y T end to end

aneurysm

graft . arterial Y or T 가 가



4. composite graft



5. composite graft

akinetic free wall

(exclusion)

가 (21).  
dyskinetic aneu-  
rysm  
(standard linear suture technique), akinetic  
septum

가  
aki-  
netic region

가  
Dor (21) endoventricular  
patch angioplasty(EVCP, modified Dor operation)  
Buckberg (22, 23) surgical ante-  
rior ventricular endocardial restoration(SAVER)  
dyskinetic aneurysm

(21~23)( 6).

6.6% 12% (21, 22).

(Mitral Valve Reconstruction)

(Mitral Regurgitation, MR)

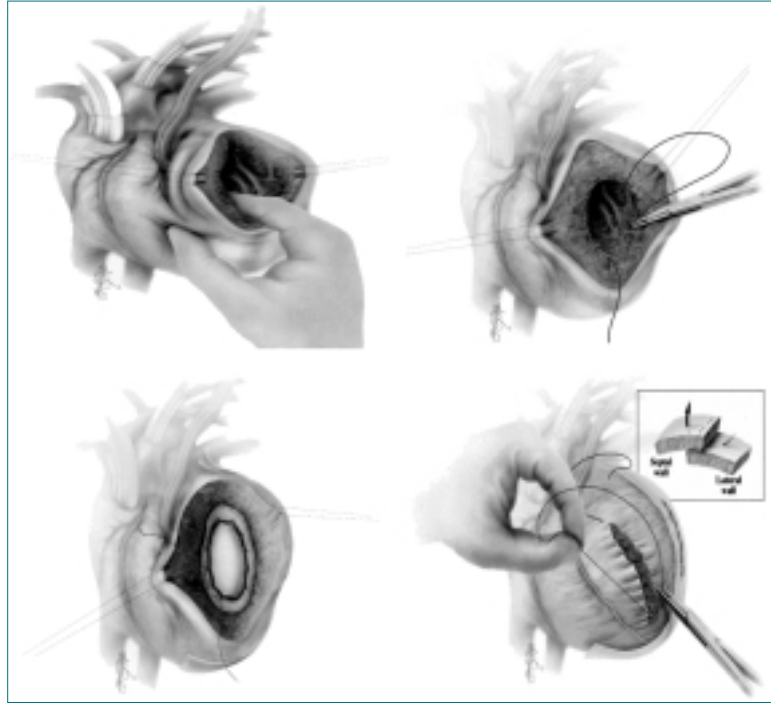
(papillary muscle)

. MR

(mitral annulus)

MR

가  
가 1  
2 82% 71%  
(24).  
5 50%  
MR



6.

가가

가 가 가  
가 2001 Menasche (25)  
vastus lateralis (skeletal  
muscle) (satellite cell)

2

가

가

가

2003

Stamm (26)

AC133\*

(27)

가

가

가



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