Objectives To evaluate the safety of carotid artery stenting (CAS) before open heart surgery (OHS) and to explore the effect of risk factors on the incidence of the main cardiovascular events.

Methods In a prospective cohort study, clinical data of all patients underwent CAS before OHS in Fuwai Hospital from January 2005 to December 2009 were collected. The end points (stroke, myocardial infarction and death) from time of CAS to 30 days after OHS were assessed and the effect of risk factors on the main cardiovascular events was analysed.

Results A total of 120 consecutive patients scheduled for CAS and OHS, mean age 65.6±10.9 year, male 81.7%, were recruited. The procedural success rate of CAS was 99.2%. Cerebral protection devices were used in 134 lesions (99.3%). In them, 12 patients were treated with simultaneous bilateral carotid stenting. The rate of major stroke, myocardial infarction and death from time of CAS to 30 days after OHS was 3.4%, 2.5% and 3.4% respectively. Multivariable logistic regression revealed that the severity of coronary heart disease and interval time of CAS and OHS were independent predictors of the main cardiovascular events. Furthermore, the incidence of the main cardiovascular events was lowest while OHS was performed in 6–30 days after CAS.

Conclusions This study indicated that CAS before OHS was safe and effective. The severity of coronary heart disease and interval time of CAS and OHS were independent predictors of the main cardiovascular events.