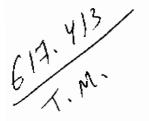
Arterial Revascularization of the Ischemic Myocardium

Essay submitted for partial fulfillment of the M.Sc.

Degree in General Surgery



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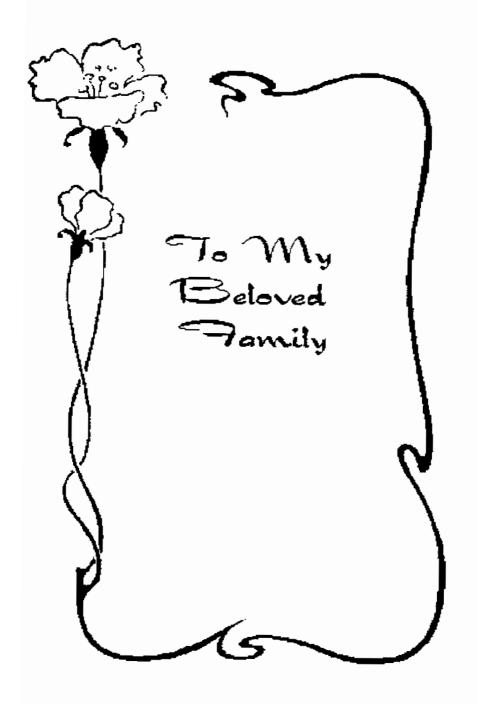
قَالُوا سِيحَانَكِ لا على لَنَا إِلَا مَا عَلَيْنَا

إنك أنت العليم الحكيم

صدق الله العظيم ... ة الدق مَـ الا مَـ ٣٢

(سورة البقرة الاية ٣٢)







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Introduction

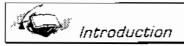




INTRODUCTION

of the cardiovascular iseases system were responsible for 39% of all deaths registered during 1986 in Switzerland (range over the last 25 years: 39% to 44% as reported by the Bundesamt fur statistick) and dominated all other causes such as malignant tumors (24.9%), accidents (8.3%), diseases of the respiratory system (6.7%), diseases of the nervous system (6.4%), metabolic disorders (3.9%), diseases of the digestive system (33%) and others (7.4%). As in other countries of the west hemisphere, the diseases of the cardiovascular were also the most frequent cause of system hospitalization (21.9%), consultation of a medical doctor (14.8%), and prescription of an ambulatory treatment (17.6%) (Pharma Information, 1988). Apart from the obviously severe consequences of cardiovascular diseases for the individual (morbidity and mortality), there can be no doubt about the micro- and macro-economic impact of these diseases. This might explain the extremely rapid treatment of a single segment of expansion in cardiovascular diseases, that is coronary artery disease (von Segesser, 1990).

The construction of aorto-coronary bypass grafts with reversed saphenous vein (S.V.) was introduced by



Favaloro in 1967 (Favaloro et al., 1968). This procedure has been recognized as one of the most significant surgical advances ever. According to Loop and colleagues (1981) all operations performed in the U.S.A. from 1970 through 1978 increased approximately 25%. In contrast, coronary artery operations increased nearly 700% during those years. An estimated 180.000 coronary artery operations are performed annually in the United States (Lefrak, 1987).

Coronary artery bypass surgery improves the blood supply to territories supplied by blocked or narrowed arteries and it is generally agreed to be highly effective (Takaro et al., 1976; Kennedy et al., 1980; National Heart, Lung and Blood institute 1981; Loop 1981; Braunwald et al., 1983; Turina 1987). Percutaneous transluminal angioplasty is another direct approach for limited coronary artery lesions (Gruntzig et al., 1979; Meier et al., 1985; Finci et al., 1987), as well as thrombolysis. Pure medical treatment however, reduces angina by increasing the efficiency of the heart and reducing demands but it is much less successful than surgery in relieving symptoms and does little to improve the defective blood supply (Finci et al., 1987).