

Should I risk having bypass surgery?

Many patients suffering from so-called three-vessel heart disease, i.e. narrowing of all three coronary arteries, are advised by their cardiologists to undergo bypass surgery.

The sense, or senselessness, of bypass surgery was clearly summarized in a report issued by the world-renowned Mayo Clinic (USA) in 2003 (1):

- a) Bypass surgery can effectively relieve symptoms.
- b) Bypass surgery does not prevent further heart attacks.
- c) Only high-risk patients benefit from bypass surgery with regard to better chances of survival.

What does this mean in simple terms?

1. **Heart complaints are relieved, at least temporarily.**
2. **Bypass surgery does not prevent further heart attacks.** Patients are mistaken if they assume they are protected from another heart attack by undergoing a bypass operation of the coronary artery vessels. Only a badly informed doctor will tell his patient that the risk of a heart attack is lessened by bypass surgery. The incontestable studies in this field, particularly the three large studies carried out in the 1980s (2-5), showed that, without doubt, bypass surgery does not prevent heart attacks.
3. **Patients who suffer only mild symptoms do not live a day longer as a result of the operation** than patients with similar narrowings (“stenoses”) of their heart vessels, who have not undergone surgery. There are, however, some lucky patients in the high-risk group who do benefit from this type of surgery. The survival chances of patients with so-called “left main disease”, a stenosis at the origin of the left coronary artery directly after it branches off from the aorta, are improved (6).

Myth and Reality

This final appraisal by the Mayo Clinic corresponds exactly with the experience gathered as early as 1977, after the first 10 years of bypass surgery on around 100 000 patients (7). The main center for heart surgery of that period in Houston, Texas summarized the situation as follows: “The relief of symptoms experienced directly following bypass surgery does not necessarily last. The current data do not indicate that bypass surgery prevents heart attacks, heart rhythm problems (arrhythmias), or the development of heart weakness. The lives of the majority of patients are not prolonged.” After 10 years of experience with bypass surgery it had already been recognized that the possibilities offered by this operation were extremely limited. The triumphal march of bypass surgery – over 500 000 bypass operations were performed in the USA in the year 2000 – was, however, not halted by this realization.

As an example: the most comprehensive study on bypass surgery, the “Coronary Artery Surgery Study” (CASS) (4,5) was carried out at the best-known clinics in the USA and Canada. Nearly 800 patients with coronary artery disease either underwent surgery or were treated solely by medication. The majority of the patients were suffering from severe stenoses of all three coronary arteries. Their symptoms were either only mild or they had no complaints after having suffered a heart attack. After 5 years, and again after 10 years, no difference was found between the two groups with regard to survival rate and also none with regard to the frequency of additional heart attacks. After 5 years, the probability of still being

alive and free from heart attack was near to identical in both groups (82% or 83% resp.). **Accordingly, the authors of the study came to the conclusion that bypass surgery neither prolonged the life of their patients, nor did it prevent further heart attacks.**

In 2011, another important study on bypass surgery was published. A renowned clinic in North Carolina, USA, in cooperation with nearly 20 cardiological centers from around the world, followed the cases of patients with severe heart weakness due to coronary artery disease for over 5 years (8). The patients either underwent surgery or were treated by medication alone. The results were clear-cut: bypass surgery did not prolong the lives of these patients. A leading cardiologist, commenting in an editorial on the study, said “We must acknowledge that, in the case of cardiac insufficiency, bypass surgery is not superior to medication as a method of treatment” (9). To put it more straightforwardly, one could say that bypass surgery is senseless in these patients.

As you know, the official opinion is the following: “Stenosis” or narrowing of the coronary arteries results in a reduction of the blood flow to the heart muscle. Acute circulatory restrictions are experienced as a heart seizure (“angina pectoris”). If a vessel becomes completely blocked, a heart attack occurs. According to this point of view, “stenoses” of the coronary arteries are the decisive element of risk for the occurrence of heart attacks. Chronic circulatory disorders and also scarring from previous heart attacks weaken the heart muscle. Narrowing of the coronary arteries is therefore the most important cause in the development of a weak heart.

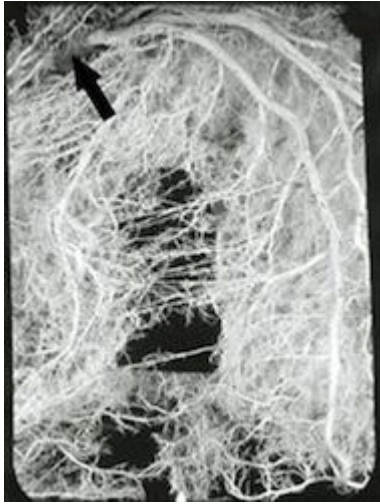
Bypass surgery is supposed to take the edge off these dangerous stenoses – they are detoured by placing a surgical bypass. The purpose is to positively influence the fate of the patient in 4 ways:

- 1) Patients should be largely free from chest pain.
- 2) Heart attacks should be far rarer.
- 3) Survival periods should be generally distinctly prolonged.
- 4) The operation should prolong the lives of patients with severe weakness of the heart.

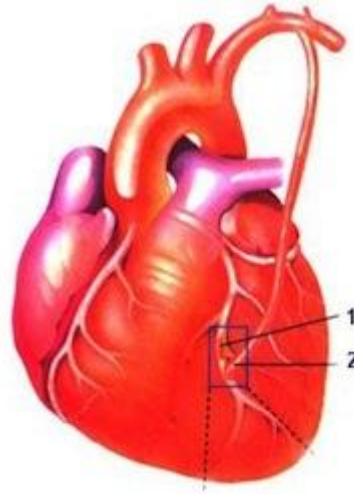
What is the outcome? The outcome is sobering. The first aim is achievable; the symptoms are relieved. All the other goals are left unfulfilled. The cause of the illness remains untreated: heart attacks are not prevented; lives are only prolonged in rare cases; patients with severe heart weakness are left unaided.

Natural bypass system vs. surgical bypass

What conclusions can be drawn from this? Contrary to the view of heart specialists, common sense tells us that placing a bypass to make a detour around a stenosis in a coronary vessel obviously makes no great sense. Indeed, the question should be posed as to whether blocked coronary arteries really play the decisive role they are generally assumed to play in the development of heart attacks. The solution to the question lies in the capacity of the human body to build an extensive diversion around the severely blocked parts of the vessels, thereby creating a natural bypass system in the heart muscle. Nature is well capable of helping itself. If the blood flow in the coronary artery is severely constricted, the body develops a new bundle of vessel pathways to bypass the stenosis. This dense network of vessels prevents any damage to the heart muscles that could be caused by the stenosis. **A surgical bypass cannot improve on this natural bypass network.** Section 3 deals with this subject in detail.



Natural bypass system with a blocked coronary artery (arrow)

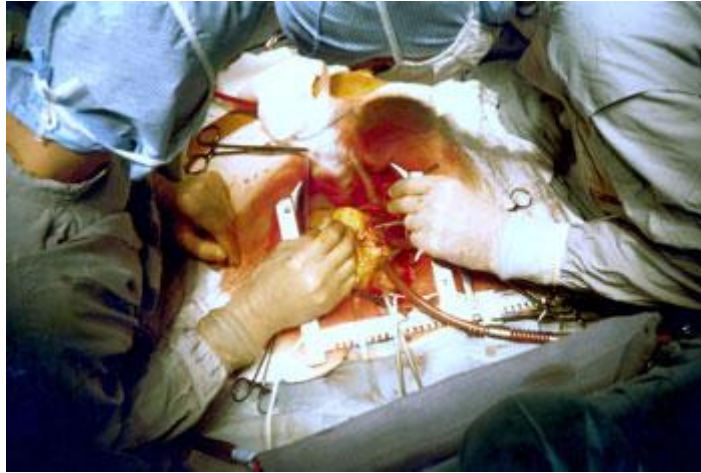


Surgical bypass

Why does chest pain often disappear in many heart patients after the operation? If this is not due to improved circulation, what is the cause? I can offer two possible explanations: Pain is transmitted in the human body via the nerves. **These nerves, which also surround the coronary arteries, are dissected during the bypass operation.** It generally can take from several months up to some years for the nerve tissue to regenerate and regain the capacity to transmit pain.

The second explanation, which should not be underestimated, is that patients who have decided to undergo open heart surgery often have great expectations. The exceptional high-tech nature of bypass surgery goes along way to fulfilling these expectations. **Faith can move mountains.**

To avoid being accused of polemicizing, I would like to quote a study carried out in Seattle, USA (10). In this study, a range of patients were examined, in whom all the surgical bypasses placed became blocked within 9 months of surgery. This closure of surgically placed bypasses is not rare and goes unnoticed. The patient does not feel anything. Those patients involved in the study usually suffered from severe chest pain before the bypass operation and their physical capacities were restricted. Nine months after surgery, these patients were not only free of symptoms, but their physical capacities were also better. This cannot have resulted from improved circulation as all the bypasses were blocked. There has to be another explanation. Belief and confidence can have a strengthening influence. An open-heart operation is, however, a high price to pay to achieve this.



Should I risk a bypass operation?

It is sensible to approach the subject of bypass surgery with a certain amount of scepticism, if one doesn't want to face disappointment. Patients with "left main disease", a stenosis at the origin of the left coronary artery directly after it branches off from the aorta, not only benefit in terms of improved symptoms following the operation, but they also have better chances of survival. Overall, the survival chances of high-risk patients, patients with very bad heart conditions, are statistically proven (1). What does "statistically" mean? In the large "European Study" carried out in 1982 (3), in which the best results were achieved for bypass patients, 43 operations were needed to save one life per year. Of 43 operated patients, one more patient survived per year than of 43 patients with similar heart conditions who had not undergone surgery. This is better than nothing, but it is still very little.

I recommend that patients facing the prospect of bypass surgery obtain as much information from as many sources as possible. Get your cardiologist to explain why he is advising you to have a bypass operation and what the chances of success are likely to be. My remarks will probably not encourage you to undergo a bypass operation. My aim is to help you make a decision. Take your time! Ultimately, no one can make the decision but you yourself.