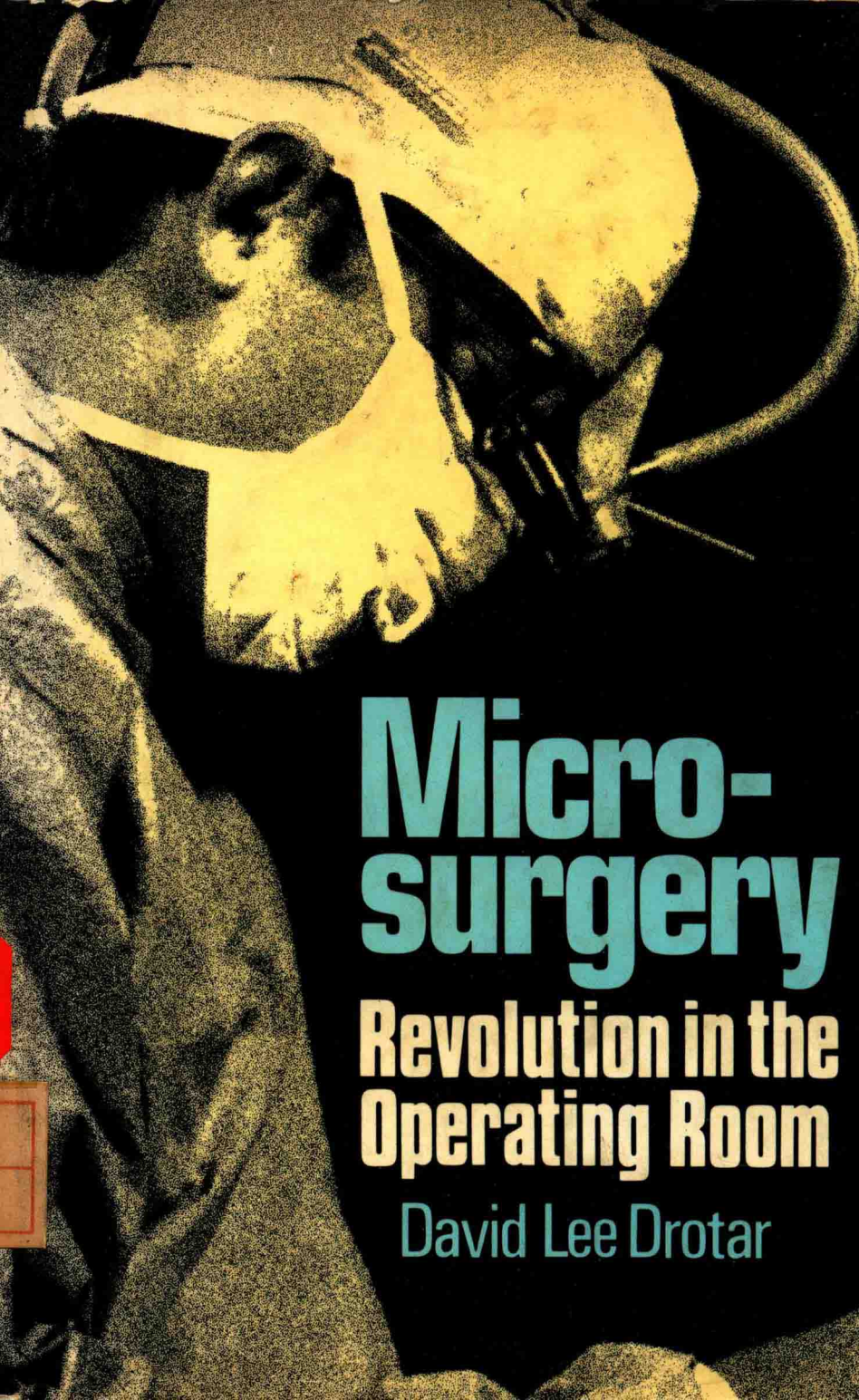

Micro-surgery

Revolution in the Operating Room

David Lee Drotar

MICRO-SURGERY

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For ARNOLD MADISON, *whose friendship and professionalism never wane.*

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Contents

Introduction

In Tampa, Florida, Karl woke to the sun streaming through the hospital window onto his bed. The warmth encased his muscular body like the snug wet suit he had worn only last week in his college's diving expedition.

Both his eyes squinted in the bright light. Karl stretched his legs under the sheets. Why was he here? Why wasn't he jogging on the beach on such a beautiful morning? He tried to stretch his arms above his head.

Then he remembered.

His left arm was gone. It was still "in the shop" for repairs. Today, however, was the day the doctor had promised the limb would be reattached. In just a few hours, Karl would be wheeled into the operating room. In just a few weeks, he would be splashing in the surf again.

Science fiction?

Yes, the above account is fictional. But theoretically, this

could be a common scene in several years. And the technique that would make it possible is microsurgery—performing operations with miniature instruments under high-powered microscopes. Already the procedure has proved highly successful in restoring accidentally severed body parts to their owners. Fingers, hands, arms, and even entire legs have been sewn back onto the body with forty to ninety percent of function regained.

Suppose our diver, Karl, had complained of a sore left elbow. His doctor would analyze the X-rays and lab tests, and discover a malignant bone tumor. An operation to remove the tumor would carry the risk of spreading it to the rest of the body. So, a microsurgeon would amputate the arm, identifying and keeping each blood vessel intact by securing it with clamps. Then the arm would be shipped off to a laboratory where the tumor could be removed, and dangerous doses of chemicals are far away from Karl's critical bodily functions. Finally, after the tumor-killing substance has been cleansed from the arm, and several days of tests confirm the absence of malignancy, the microsurgeon could reattach the arm.

Reimplantation of body parts is just one example of the many areas in which microsurgery is considered a major medical breakthrough. The techniques, however, can be applied to virtually every form of surgery. Entirely new dimensions have opened up. Prior to the development of microsurgery, conventional methods had proved inadequate in such delicate feats as a tumor removed in the pituitary gland, which is located dangerously close to the brain. "We're doing things today that we wouldn't have even dreamed of attempting five years ago," says Dr. Rollin Daniel of Montreal's Royal Victoria Hospital.

In the world of medicine, innovations continually spring up, gain attention, and occasionally may be reported by the

news media. For example, Dr. Linus Pauling's work with vitamin C received widespread coverage. But rarely does an entire new discipline emerge, as is the case before us now. Microsurgery is fast becoming a household word. The focal point of any hospital is its operating room. New discoveries, new advances culminate here. *Microsurgery: Revolution in the Operating Room* will explore these frontiers of medicine.