

CLINICAL PROCEDURES SECOND EDITION

A Concise Guide for Students of Medicine

JACK FISHER
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DEDICATED TO
THE PATIENT

WHO STANDS TO BENEFIT
MOST FROM THE CONTENT
OF THIS BOOK

Preface to the Second Edition

A decade has passed since publication of the first edition of *Clinical Procedures*, a gratifying success which confirmed a conviction that an unfulfilled need did exist. During that interval, the potential audience for a basic primer on clinical skills has enlarged, not just because medical school classes have expanded by nearly 50%, but also because a diverse array of health professionals have become involved in bedside techniques. This trend was not overlooked in the initial preface nor in the selection of topics covered; but knowledge of our current audience has influenced the expansion of this handbook's content.

New subjects include Pelvic Examination, Ventilator Management, and the performance of an Electrocardiographic tracing. Many more chapters required updating; basic patient skills are simply not a timeless body of knowledge! For example, catheter techniques must include Swan-Ganz Catheter insertion and interpretation, thoracostomy must consider use of the Pleurevac, but without abandoning understanding of the classic bottles for water seal drainage. So there is much new along with numerous old and largely unchanged principles. And there are even more illustrations thanks to Julie Hernley and Bill Eckert, our illustrators. Williams & Wilkins has proven themselves a source of continuing support and motivation which characterizes its long-standing medical publishing tradition. Jim Sangston first accepted the concept for edition number one, and here he is again, the force behind a new, improved, more compact, edition number two.

Finally, the reader cannot overlook the dual authorship which assures for this edition a broader perspective. We the authors are also grateful to Doctors William A. Scaring, Thomas K. Butterfield, L. Andrew Rauscher, Hugh A. Frank, John L. Ninnemann, A. Gerson Greenburg, Eugene F. Bernstein, William Bernstein, Richard M. Peters, Ross Rudolph, Joseph D. Schmidt, Lawrence F. Marshall and Sidney L. Saltzstein who checked both facts and opinions, keeping us honest at all times. We are also indebted to Carolyn King, Vera Hobson and Pat Fisher for their clerical and editorial help.

May the patient benefit most, and may all health professionals learn to accept the importance of even the simplest of these procedures.

JACK C. FISHER, M.D.
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Preface to the First Edition

During his medical education, the student passes through a number of transition zones. Not the least of these occurs at the end of the second year of medical school when he emerges from the classroom and laboratory (with which he has been familiar for many years) and enters an entirely new learning environment, the hospital, where he will be expected to participate in the care of the ill while he learns.

At this stage of training, he has gained a strong foundation of knowledge in the basic medical sciences upon which future clinical training will be built. Achieving this level of proficiency has required a not inconsiderable investment of both time and study. Now, at the beginning of his clinical clerkship, the medical student will be expected to perform a wide variety of basic procedures at the patient's bedside. The preclinical years yield little or no time to discuss these practical skills, and so it falls the lot of the busy house officer to convey his practical knowledge to the student, but only when time permits. Thus, medical students must often acquire manual skills on a trial and error basis with limited supervision . . . or they may not learn some procedures at all, leaving them ill-prepared for internship. It is this void which I hope will be partially filled by this small book.

No one would expect a student to learn techniques simply by reading about them, but it is also true that he cannot adequately master a procedure without knowing its physiologic basis, variations, and potential hazards. This volume includes several basic procedures, usually performed at the bedside, which are common to the clinical services a student is exposed to during his clinical clerkship. Advanced techniques peculiar

to individual specialties are purposely omitted. Some topics might be considered too advanced for the student, e.g. tracheostomy, but they are included nonetheless so that he might be introduced to them at an early stage of training. Emphasis has been placed on preparation, equipment, technique, alternate methods, and complications. A list of selected references for further reading is included at the end of each chapter, and some entries present viewpoints opposing those expressed in the text. With this information as a background, the student may hopefully achieve a higher level of proficiency while performing a clinical procedure than would be possible solely by the trial-and-error method.

This, then, is a book about what is commonly referred to as "scut work," a topic which continues to stimulate abundant controversy between certain academic camps. One of these feels that there is no such thing as "scut work" and that practical experience is the *sine qua non* of clinical training. Another, equally vehement, states that there is no time or place for the repetition of menial tasks in the student's day; his time is better spent in the library, at conferences, etc. This argument is by no means close to solution and may never be completely resolved, nor is it my purpose at this time to cast a vote with either side. I simply suggest that this book might help achieve something of a compromise. Assuming there will always be "scut work" to do, isn't it advisable to learn at an early stage of training to perform it as rapidly, efficiently, and effectively as possible? The idea for a basic guide such as this one arose during my own clinical clerkship and has been completed with just this purpose and audience in mind.

Nevertheless, despite the fact that this book is primarily oriented to the medical student, I did not lose sight of its potential usefulness to other "students of medicine" such as professional nurses, laboratory technicians, and other physician's assistants, who find themselves at one time or another in the position of performing some of the procedures discussed or else assisting the doctor with the rest. Therefore, the text dealing with technique is not encumbered with unnecessary technical jargon and does not presuppose extensive clinical

experience on the part of the reader. Sections dealing with indications, interpretation, and complications naturally demand a greater understanding of the basic medical sciences.

I would like to express appreciation to the following individuals who served as my "panel of experts" and who proposed several valuable additions, corrections, and deletions: Dr. Stanley M. Goldberg, Department of Surgery, University of Minnesota Hospitals, Minneapolis; Drs. Karoly Balogh, Department of Pathology, and James L. Vanderveen, Department of Anesthesia, University Hospital, Boston; Dr. Harold W. Harrower, Department of Surgery, Veterans Administration Hospital, Providence, Rhode Island; Drs. Williams McCabe and Andrew Huvos, Department of Medicine, Boston University School of Medicine; Drs. Donald Mahler, Department of Anesthesia, and Carl Olsson, Department of Urology, Veterans Administration Hospital, Boston; Miss Emily Feener, Boston University School of Nursing; and Drs. Robert L. Berger, James A. Bougas, Richard H. Egdahl, Herbert B. Hechtman, Irving L. Madoff, John A. Mannick, and Edward L. Spatz, Department of Surgery, Boston University Medical Center.

In addition, it should be emphasized that the final content of this book is in large measure a result of the labors of numerous Boston medical students, who read the preliminary drafts and served as my severest critics. It was through their reactions, both negative and positive, that I learned exactly what they wanted to know and in what terms they understood it best.

Special thanks are to be accorded to Joan Sheahan for her lucid illustrations and to the editorial staff of Williams & Wilkins for their assistance and patience while waiting for the completion of this project.

JACK C. FISHER, M.D.

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ONE

Approaching the Patient

Thomas Jefferson once said, "The art of living is the art of avoiding pain." In like manner, the art of performing clinical procedures is, in large measure, the art of avoiding pain. To be sure, one also wishes to obtain the necessary specimens or desired data, but patients will judge physicians primarily by the amount of pain that they inflict. The patient does not know your academic standing or what you read the night before. He only knows that he is going to feel pain and does not like it. Some will express their fear, others will not, but all experience a variable degree of anxiety and apprehension.

Patients differ greatly according to their own personality traits as well as their recent experience. Some are almost hysterically sensitive to pain while others retain a stoic composure beyond belief. A patient who has recently taken ill may tolerate much more pain and discomfort than a chronically ill patient who has spent the last several weeks in a hospital with daily exposure to syringes, needles, and similar weapons. Therefore, it is important to know your patient well, including a little of his recent experience.

While learning to perform clinical procedures, there are a number of habits worth developing which contribute to greater patient comfort as well as diminish pain and anxiety. Speed is of the essence. Not irrational and careless speed but, rather, expeditious performance of the assigned task. All necessary equipment should be assembled before entering the patient's room since nothing is more annoying to patient and doctor alike than the necessity of making several extra trips down the

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hall for missing items. The nurse can be of inestimable value in this department, but she should avoid delivering the desired items too far in advance of your arrival or the patient will simply stare at the assembled gadgetry and brood about the suffering to come.

It is commonplace for doctors and nurses to announce to patients, far in advance, that a given procedure is to be carried out. Although some preparation is necessary, the time interval between the announcement and the deed should be limited. Perhaps the best time to prepare the patient verbally is when you arrive in the room to complete the task. In this way, patients will not worry for hours about what is going to happen to them.

The first thing that any patient will want to know is what is to be done, why, and will it hurt? Since there should be a good reason for every clinical procedure, there is every reason to keep the patient informed. In fact, the more that he knows about why the procedure is essential to his welfare, the more cooperative he should be.

Although some hospitals (particularly government institutions) demand written consent for each and every procedure, the request for permission should be presented to the patient in such a way that he feels he has little option to refuse. By that, I mean that it is best to be firm and authoritative, stressing that no other course is reasonable. Such an approach, if presented in a pleasant manner, will do much to gain the patient's cooperation.

Regarding the question of pain, it is never wise to merely say "No, it won't hurt at all" if it is going to. This will simply destroy the patient's confidence in you. Honesty is a better alternative. State quite frankly that "It will hurt a little, and it lasts but a few seconds." If a local anesthetic is to be used, stress this fact since knowledge that the area to be worked on will be numbed is a great reliever of anxiety.

Give some advance thought to how much pain will be involved. If it is considerable, then prescribe a sedative or an analgesic. Extensive wound debridement should always be preceded by an injection for pain. Many other procedures fall

in this category as well. The drugs (e.g., barbiturates, valium, demoral, morphine) may be given intramuscularly by the nurse about 30 minutes before your arrival or else by yourself intravenously just before starting. Dosage must be adjusted according to the patient's weight and age, and great caution be exercised with the young and the aged.

The problem of judging pain is not always easy, particularly for those who have not experienced the procedure themselves. William Mayo underwent surgery early in his career and later said that it was one of his greatest learning experiences. We cannot all be on the other side of the needle or knife, but a sensitive observer should be perceptive of his patient's discomfort.

In addition to systemic sedative, analgesic and local anesthesia, a gentle and skilled hand will also prevent considerable pain. Brusque movements will merely anger the patient, regardless of how much advance medication has been given. Also recall that conversation throughout the procedure is perhaps the most effective sedative of them all.

Skillful suggestion often lessens the memory of discomfort. Upon completion of the procedure, say something like, "That didn't hurt very badly, did it?" Some will say yes, but a vast majority will admit that there was far less pain than they had anticipated and will therefore be far more receptive in case the procedure must be repeated. Patients often remember saying that the procedure did not hurt badly (even when it did).

CHILDREN

Approaching the child can be, and usually is, a far greater challenge. Infants will usually cry regardless of your preparation and, therefore, it is wisest to proceed quickly and get the job done. Babies fortunately forget their experiences quickly, and some procedures, such as external jugular venipuncture, may be facilitated by crying.

Children from 3-16 vary in their response. Some 4 year olds will sit quietly while a sizable laceration is sutured, whereas

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certain 14 year olds will cry in anticipation of a simple venipuncture. You should be able to size up your patient quickly and take the appropriate measures. Some can be talked through a procedure without excessive restraint, while others must be wrapped firmly.

Nursing assistance is essential when dealing with young children. Not only can they help to control the child physically but, also, they can provide consolation while you concentrate on the assigned task. It is preferable for the baby's own parents to be out of sight and beyond hearing range while procedures are being carried out.

THE DIFFICULT PATIENT

Despite all efforts to the contrary, there will still be a few patients who defy rational management and refuse to cooperate. Restraint is occasionally needed for the confused and irrational adult. If general obstinacy or adamant refusal prevents the completion of a procedure, notify a senior physician (preferably the patient's) rather than force the issue or waste further time.

In conclusion, if the art of performing clinical procedures lies in the avoidance of pain, then its instruments are careful preparation, firm persuasion, close attention to important details, and a gentle but quick hand. From the pen of Margaret Junkin Preston comes the apt phrase, "Pain is no longer pain when it is past." The duty of the physician performing any procedure is to make it—and the pain—past!

Selected References for Further Reading

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TWO

Venipuncture

The modern practice of medicine requires easy access to the circulatory system. The venous system being most superficial, venipuncture necessarily becomes one of the most frequently performed of all clinical procedures. Accurate laboratory diagnostic methods demand frequent collection of blood samples, and the ability to enter a vein efficiently for the purpose of administering drugs can be of lifesaving value. The removal of blood for therapeutic reasons (phlebotomy), although once practiced widely, is rarely, if ever, applied to patients with congestive heart failure in whom reduction of an expanded blood volume is of paramount need. This chapter considers all three of these applications of venipuncture and also discusses the technique of arterial puncture.

HISTORY

Long before the circulation was adequately understood, physicians recognized a need to enter the venous system. The history of venipuncture is, therefore, intimately related to the development of phlebotomy or bloodletting as a means of therapy. Blood was recognized as “the seat of life” as well as the harbor of numerous and yet undefined diseases. Although only one of a number of “humors,” it was most readily available to the medical practitioner so that the letting of blood for the purpose of eliminating disease rapidly achieved popularity.