Surgical Handicraft

Manual for Surgical Residents and Surgeons

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Surgical Handicraft

Manual for Surgical Residents and Surgeons

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Dedicated to

My teachers and my students
(both undergraduates and postgraduates in surgery)
My uncle Late Mr N Soman, SILO of Singapore
My Late parents Mr Raghavan and Mrs Mallakshy
and
My wife Dr Geetha Bhai and my son Deepak D Babu for their love and tolerance of yet another intrusion into the family life as the project took shape.

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GREAT QUOTATIONS

"Let the ultimate truth prevail
Let the ultimate knowledge prevail
Let the infinite and eternal happiness prevail".

"Medicine is an art, not a trade
A calling, not a business
A calling in which your heart will be equally used as your head".

—William Osler

"Where there is love for humanity
there is love for the art of Medicine".

—Hippocrates

"To cure occasionally
To relieve sometimes
To comfort always".

—Louis Pasteur

"Two things are infinite:
the Universe and the human stupidity
and I am not sure about the Universe".

—Albert Einstein

"Don't waste your time with explanations:
People only hear what they want to hear".

—Paulo Coelho

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FOREWORD

Surgery is that branch of medicine in which an operation (handicraft or instrumental intervention) may have a great role to play in the treatment. Hence, different to other medical disciplines, it requires the development of a physical craft with cognitive growth. Accuracy, speed, economy of effort, coordination of actions, efficient and appropriate surgical skill are all important factors in the art and practice of surgery.

There has been a void in Surgical Handicraft Textbooks since Pye's Surgical Handicraft: A Manual of Surgical Manipulations, Minor Surgery (1893). In the preface to the very first edition Pye wrote, "In this book I have endeavored to describe the details of surgical work as it appears from the point of view of house surgeons and dressers in surgical wards".

This book by Dr R Dayananda Babu provides a unique learning environment wherein surgical residents can acquire technical skills, knowledge and confidence; the essentials of the craft of surgery. The contents of the book is appropriately described by its title, *Surgical Handicraft: Manual for Surgical Residents and Surgeons*. This book will help all doctors intending a surgical career or surgically related career as a foundation text and, of course, in day-to-day "general practice" which is fast disappearing.

This book is written with emphasis on standard surgical principles and techniques. It outlines fundamental principles of major and minor surgery; to ensure the success of procedures, to help to avoid pitfalls and to minimize the risk of complications. The book *Surgical Handicraft: Manual for Surgical Residents and Surgeons* has been written primarily for house surgeons and junior residents, with constant attention to the thought, "Is this something a student should know when he or she finishes undergraduate medical study?" The field of surgical techniques is broad and varied and "Surgical Handicraft" covers the many techniques effectively utilized to perform the training of today's medical graduates, residents and young surgeons with existing evidence-based knowledge.

Dr R Dayananda Babu has been a long-time colleague of mine. His vast knowledge of both theory and the art of surgery is personally known to me. This is his fifth book.

It is an honor to be associated with this textbook. I recommend this book as a companion and compendium to surgical studies, with full satisfaction.

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PREFACE

It is with great pleasure and immense satisfaction I am writing the preface of my second book titled *Surgical Handicraft: Manual for Surgical Residents and Surgeons*

Medical students who have completed their course and are entering the clinical training, especially in surgery, must be well educated in basics. Most of the time, they are not guided properly during their house surgency. This book is meant for the neophyte intern whose main interest at present is learning multiple choice questions (MCQs) rather than getting hands-on training. The junior residents also get into the surgery departments without proper hands, on exposure during house surgency.

The famous quotation by Virchow is always there in my mind—"Brevity in writing is the best insurance for its perusal." This book is written in a notebook style. The presentation is simple and lucid with liberal use of pictures to facilitate the reading. Basic topics, such as handwashing, gloving, universal precautions, fluid resuscitation, insertion of intravenous cannula, urinary catheter, and nasogastric tube, are discussed. The Interactive DVD provided with this book demonstrates bandaging techniques, central line insertion and tube thoracostomy.

I hope that this book may contribute to improving the training of house surgeons and junior residents. Finally, let me quote Isaac Newton—

"If I have seen a little further it is by standing on the shoulders of giants—My teachers".

R Dayananda Babu

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In the early 2013, I got a call from Shri Jitendar P Vij (Group Chairman) of M/s Jaypee Brothers Medical Publishers (P) Ltd, New Delhi, India, requesting me to write a book in this title. He put a deadline for me and was December 2013. Today, the book release was possible because of his constant encouragement and frequent reminders.

I am grateful to my esteemed contributors:

- Professor (Dr) John S Kurien, MS, DNB, FAIS, FICS (Government Medical College, Kottayam)
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- Dr Ganesh Divakar, MS, MCh (Consultant Neurosurgeon, Saga Institute of Management Studies, Kollam).

My special thanks to Professor John S Kurien, for bringing out the attached Interactive DVD. I am thankful to Dr Arun K Aipe, final year postgraduate student in General Surgery, for spending many evening times with me in doing the computer work, helping me to insert the pictures and photographs in appropriate places, and arranging the chapters. The medical illustration part of the orthopedic chapter was done in a fantastic professional manner by none other than the author himself— Dr Tigy Thomas Jacob. Hats off to his artistic skill also. The remaining illustrations were done by my first year postgraduate student Dr Muhammed Muneer, Sree Gokulam Medical College and I am very happy with his job. The Interactive DVD attached to the book was possible because of the postgraduates of Kottayam Medical College— Dr Sagar Sahita, Fobin Varghese and T Saravanan, and House Surgeon Dr Nimmy Varghese.

Finally, I must thank Professor (Dr) PGR Pillai, Special Officer, for writing the foreword. He has made commendable contribution in starting the new Government Medical Colleges in the state. He was responsible for starting Pariyaram Medical College, Cochin Medical College and many other projects while he was the Superintendent. The Cancer Care Centre is a standing monument for his hard work. I was an assistant to him for several years and I learned many basics from him.

I would also like to thank Shri Jitendar P Vij (Group Chairman), Mr Ankit Vij (Group President) and Mr Tarun Duneja (Director–Publishing) of M/s Jaypee Brothers Medical Publishers (P) Ltd, New Delhi, India.

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Chapter

24

Incision and Drainage of Abscess

R Dayananda Babu

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Early acute suppurative inflammation is a prerunner of abscess and can be treated with antibiotics (Even early abscesses in areas like breast are treated now a days by sono-guided aspiration).

Once pus is organized, needs drainage to limit the extend of any tissue damage.

Superficial abscesses, one should not wait for fluctuation in areas like breast and parotid, because the pus will be present deep inside. Hence, sono-guided aspiration or incision and drainage should be carried out as early as possible. This is more important in immune-compromised patients like diabetics.

Deep abscess–fluctuation will always be absent in situations like ischiorectal fossa. Infection and abscesses in the middle of face, need prompt treatment due to risk of cavernous sinus thrombosis (dangerous area of the face).

Look for associated ascending lymphangitis and if it is present it is suggestive of *Streptococcus pyogenes*. Rule out diabetes in all patients with abscess.

DANGEROUS AREAS FOR INCISION AND DRAINAGE

There are four areas where major vessels are present beneath the abscess. Therefore, it is important to aspirate before you put knife for drainage. Aneurysms can present exactly like abscess in the following situations:

1. Popliteal fossa.
2. Inguinal region.
3. Axilla.
4. Neck.

Anesthesia

1. Deep abscesses and perianal and ischiorectal abscesses need general anesthesia. Perineum is a very sensitive and painful area.

2. Superficial abscesses may be drained by doom infiltration (Fig. 24.1A).
3. If doom is thin and abscess is pointing it can be drained even without anesthesia.
4. If it is thin and non-necrotic, it needs infiltration of anesthetic.
5. Wide infiltration is needed if dome is thick and indurated.
6. If inflammation is present, inject widely as it is painful to inject in red areas.
7. Wait as it takes more time than normal for skin to get an anesthetic effect, and it is also short-lived.

Steps

1. Position depends on the site of abscess.
2. Clean with antiseptics and drape the area.
3. Local or regional anesthesia or general anesthesia.
4. Abscess confirmed by needle aspiration.
5. Put an incision by No. 11 blade with the tip pointing upwards (No.15 blade also may be used).
6. Drain the pus in a kidney tray.
7. The aspirated pus is send for culture and sensitivity.

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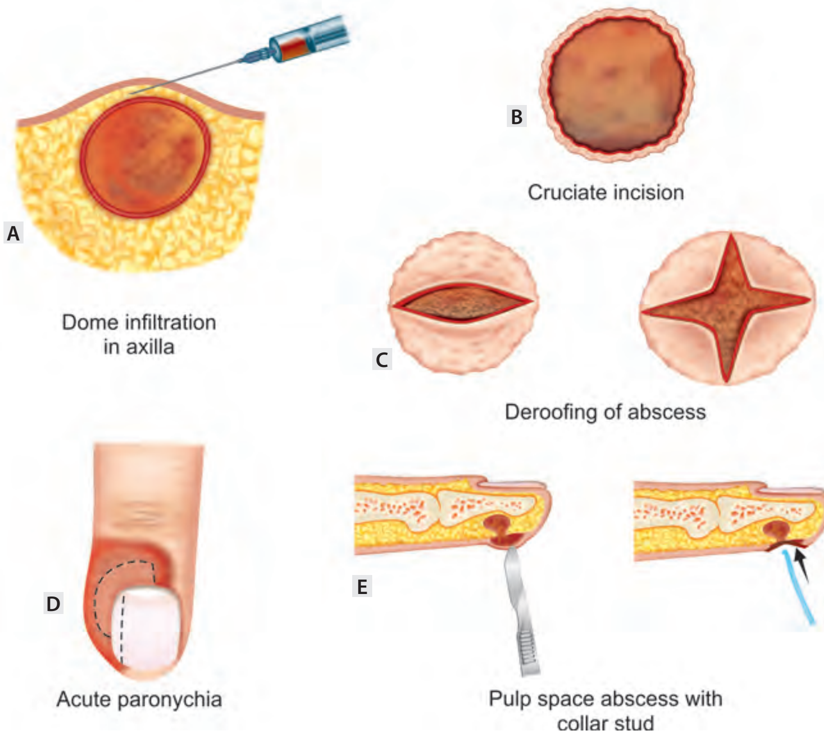

Figs 24.1A to E: Incision and drainage of abscess in different parts

8. Break all the loculi of the abscess cavity by a sinus forceps. (in cases of big cavity, a gloved finger may be inserted for breaking the loculi).
9. Abscess cavity is cleared of pus, and give a thorough wash with normal saline.
10. Keep the wound open with or without a gauze wick for 24 hours .

(An alternate treatment is to give antibiotic 1 hour before incision, drainage and curettage, followed by primary suturing to obliterate the cavity. For large cavity or with skin necrosis, a **cruciate incision** (Fig. 24.1B) is made and corners are removed in areas like sole of foot and fingers to avoid excision of the skin.

Boils are drained by a stab incision.

Carbuncle has multiple loculations of pus, pointing at number of areas. It is preferable to put a cruciate incision enclosing the entire area and lift the flaps so that all the pus loculations can be evacuated.

Pulp space abscess: Here pus is trapped deep in the tissue and point to the surface as collar-stud abscess. Skin over the pulp is tethered to the deep bone by fibrous band. Deep pocket of pus should be drained by probing or with forceps under digital nerve block (Fig. 24.1C).

Breast abscess needs GA, if it is not responding to sono-guided aspiration. Circumareolar incisions are preferred over radial incisions. Radial incisions are recommended only in 3 and 9 O'clock positions. (*See* the picture for incisions in Chapter 9, Fig. 19.9).

Acute pilonidal abscess is drained with a special care taken to remove all the hair nests. All the sinus tracks are also excised.

Perianal abscess: Needs general or regional anesthesia. In males with anterior perianal abscess, avoid injury to the urethra by putting a Foleys catheter beforehand. The patient should be warned of a future fistula formation.

Hilton's method to drain an abscess. During drainage of abscesses situated in important areas like axilla and groin, there is chance of injury to underlying major vessels and nerves if adequate care is not taken.

In drainage of abscesses in such location, the skin and the subcutaneous tissues are incised with a knife.

The deep fascia is not incised with a knife but pierced by thrusting a sinus forceps. The blades of the forceps are then opened up enlarging the opening in the deep fascia for easy drainage of pus.

Blairs method of opening parotid abscess: A vertical incision is put just in front of the tragus. The parotid fascia is then opened horizontally. This will avoid injury to the facial nerve branches.

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