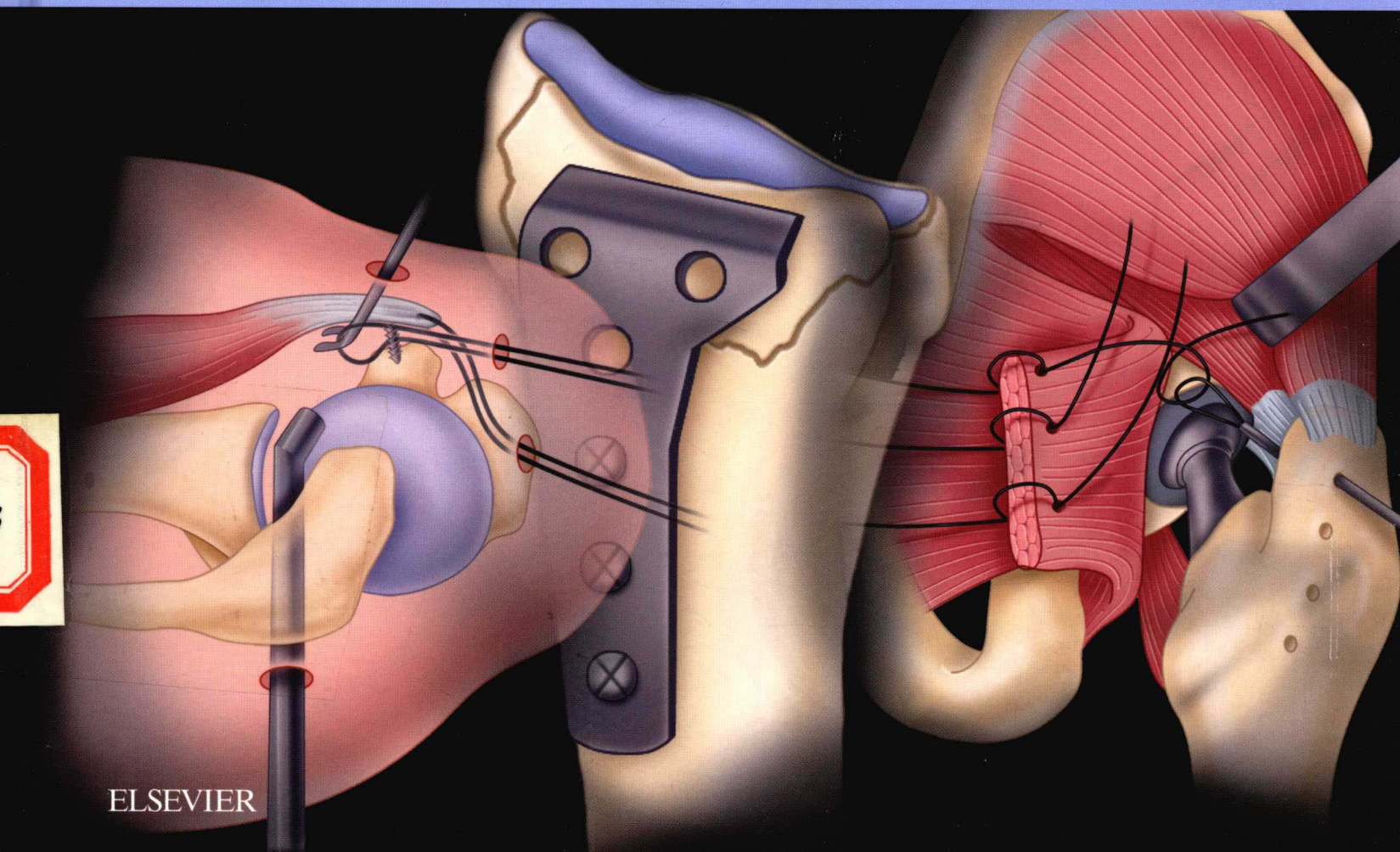
CAMPBELL'S CORE ORTHOPAEDIC PROCEDURES

S. Terry Canale • James H. Beaty • Frederick M. Azar



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CORE ORTHOPAEDIC PROCEDURES

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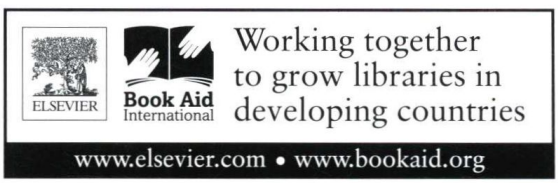

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PREFACE

The purpose of this text, as the title suggests, is to describe the "core" procedures from *Campbell's Operative Orthopaedics*. These include some of the most frequently used procedures at our clinic, as well by orthopaedic surgeons worldwide. We picked what we considered to be the top 100 procedures without regard to specialization or complexity. These procedures are described in no certain order, but generally follow the outline in *Campbell's Operative Orthopaedics*, edition 12.

The text is intended for orthopaedic residents and fellows and orthopaedic generalists and specialists. It is meant to be a source that is easily accessible in print, online, or via downloadable applications so that the user can find information about a specific procedure at the moment of need. For that reason, only detailed information about the surgical technique itself is included, and indications, contraindications, outcomes, complications, and alternate treatments are not given here.

We have had many requests over the years for a practical, transportable, easily accessible volume of the most popular procedures used at the Campbell Clinic — so, here it is. We hope you like it and find it helpful.

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CONTENTS

PART X TRAUMA

A. FRACTURES

B. COMPARTMENT SYNDROME

C. FRACTURES IN CHILDREN

VIDEO CONTENTS

BONE GRAFT HARVEST: TIBIA, FIBULA, ILIAC CREST

TECHNIQUE 1

Andrew H. Crenshaw, Jr. • G. Andrew Murphy

REMOVAL OF A TIBIAL GRAFT

- To avoid excessive loss of blood, use a tourniquet (preferably pneumatic) when the tibial graft is removed. After removal of the graft, the tourniquet can be released without disturbing the sterile drapes.
- Make a slightly curved longitudinal incision over the anteromedial surface of the tibia, placing it so as to prevent a painful scar over the crest.
- Without reflecting the skin, incise the periosteum to the bone.
- With a periosteal elevator, reflect the periosteum medially and laterally exposing the entire surface of the tibia between the crest and the medial border. For better exposure at each end of the longitudinal incision, incise the periosteum transversely. The incision through the periosteum is I shaped.

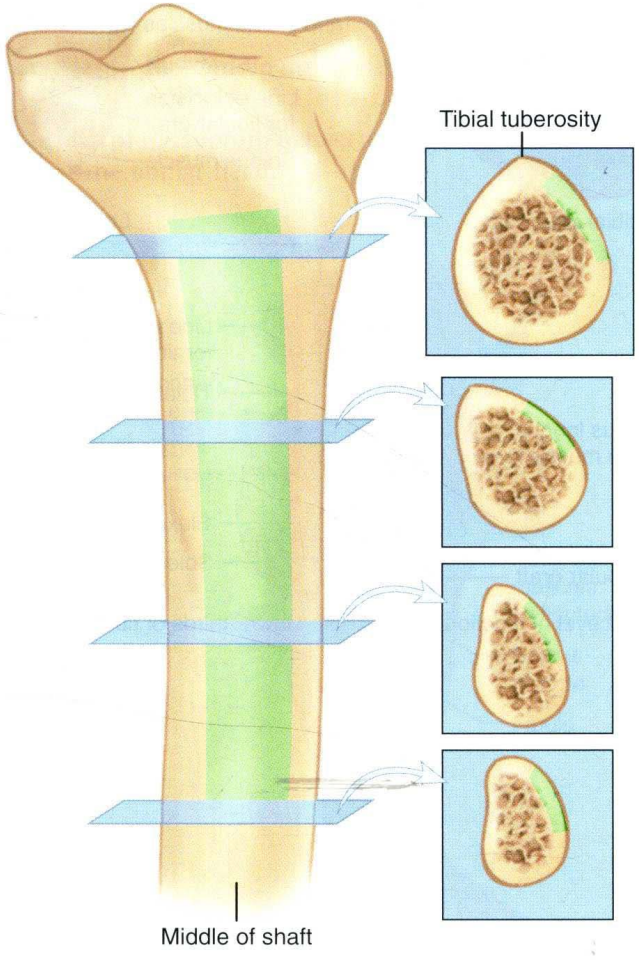

Figure 1-1

- Because of the shape of the tibia, the graft is usually wider at the proximal end than at the distal end. This equalizes the strength of the graft because the cortex is thinner proximally than distally. Before cutting the graft, drill a hole at each corner of the anticipated area (Figure 1-1).
- With a single-blade saw, remove the graft by cutting through the cortex at an oblique angle, preserving the anterior and medial borders of the tibia. Do not cut beyond the holes, especially when cutting across at

the ends because overcutting here weakens the donor bone and may serve as the initiation point of a future fracture. This is particularly true at the distal end of the graft.

- As the graft is pried from its bed have an assistant grasp it firmly to prevent it from dropping to the floor.
- Before closing the wound, remove additional cancellous bone from the proximal end of the tibia with a curet. Take care to avoid the articular surface of the tibia or in the case of a child, the physis.
- The periosteum over the tibia is relatively thick in children and can usually be sutured as a separate layer. In adults it is often thin, and closure may be unsatisfactory. Suturing the periosteum and the deep portion of the subcutaneous tissues as a single layer is recommended.
- If the graft has been properly cut, little shaping is necessary. Our practice is to remove the endosteal side of the graft because (1) the thin endosteal portion provides a graft to be placed across from the cortical graft; and (2) the endosteal surface, being rough and irregular, should be removed to ensure good contact of the graft with the host bone.

REMOVAL OF FIBULAR GRAFTS

Three points should be considered during the removal of a fibular graft: (1) the peroneal nerve must not be damaged; (2) the distal fourth of the bone must be left to maintain a stable ankle; and (3) the peroneal muscles should not be cut (Figure 1-2).

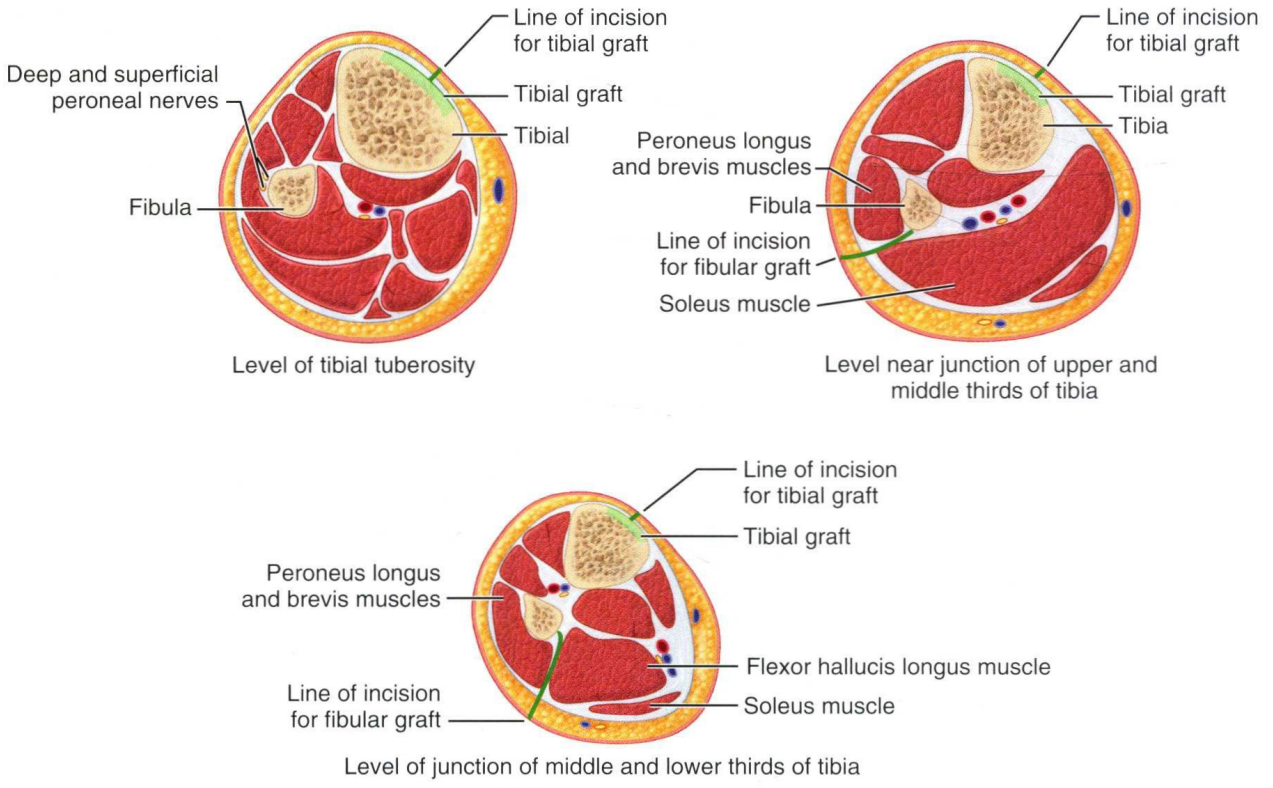

Figure 1-2

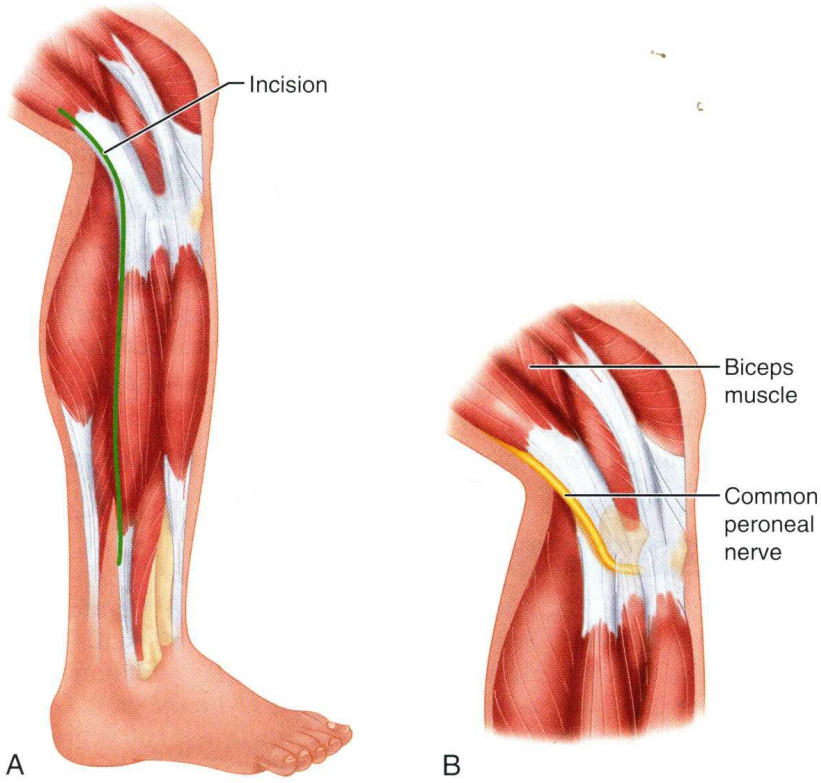

Figure 1-3

- For most grafting procedures, resect the middle third or middle half of the fibula using a Henry approach (Figure 1-3).
- Dissect along the anterior surface of the septum between the peroneus longus and soleus muscles. Identify the common peroneal nerve at the fibular head.

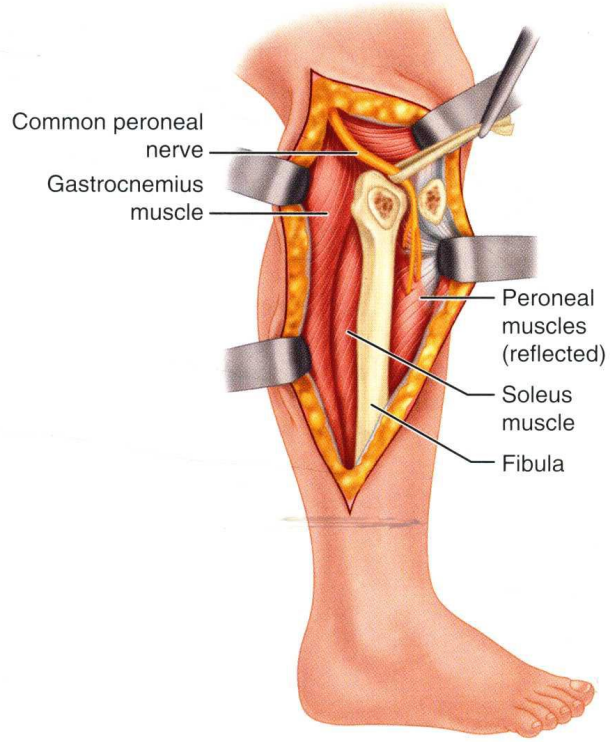

Figure 1-4

- Reflect the peroneal muscles anteriorly after subperiosteal dissection (Figure 1-4).
- Begin the stripping distally and progress proximally so that the oblique origin of the muscle fibers from the bone tends to press the periosteal elevator toward the fibula.