Correct diagnosis and surgical planning is the key to successful surgical outcomes. Many controversies exist in the management, indications for surgery, and the correct surgical procedure in temporomandibular joint disease. As a number of interventions and management schemes are currently accepted in the literature, these controversies only serve to complicate decision making in temporomandibular joint surgery for internal derangement, trauma, and management of benign and malignant disorders. Several excellent comprehensive textbooks on temporomandibular joint disorders explore the basis for these controversies and provide a historical and scientific overview of this problematic area of maxillofacial surgery.

The intent of this text is simply to illustrate the technical aspects of the various surgical procedures on the temporomandibular joint. No attempt was made to champion a single approach to temporomandibular joint surgery. Ultimately, only well-designed clinical studies can prove, or disprove, the safety and efficacy of the individual procedures. It is our hope that scientific evidence will one day provide the sine qua non that will dictate the proper role for all the potential surgical modalities, including arthroscopy, meniscal repair, and the use of both autogenous and alloplastic materials in joint reconstruction, and eventually, the use of tissue engineering in the management of temporomandibular joint reconstruction. Although serious mistakes have been made in the management of the temporomandibular joint, surgeons cannot allow the failures of the past to obscure the needs of the future.

This text is based on the assumption that primarily extra-articular conditions are most amenable to nonsurgical care. Patients with true internal derangements may benefit from nonsurgical care, and all these modalities should be exhausted before proceeding with any surgical option. The following algorithms are useful as guidelines but must always be modified according to the needs of the individual patient. These algorithms list only current acceptable surgical techniques for various conditions and make no attempt to advocate one surgical procedure over another one. Because several excellent comprehensive texts dealing with arthroscopic techniques are available, this book deals only with open-joint surgical procedures.
Internal derangement

Nonsurgical care

Surgical options

Minimally invasive

Arthrocentesis

Arthroscopy (lysis and lavage)

Arthroscopy
1. Disc release
2. Disc repositioning

Disk repositioning (open)

Disk removal (open)

Disk plication (with or without recontouring)

Eminoplasty in conjunction with disk repositioning

Disk removal (without replacement)

Disectomy (with replacement)
- dermis, fascia, muscle flap, platelet rich plasma

Internal derangement (advanced degenerative disease)

Surgical options (Wilkes III–V)

Joint replacement

Joint regeneration

Arthroplasty

Autogenous:
1. Costochondral
2. Fibula
3. Sternoclavicular

Alloplastic (stock or custom)

Distraction osteogenesis

Conservative removal of osteophytes and fibrosis

Interpositional:
- Fat
- Temporalis fascia
- Temporary silicone
Surgical decision making for temporomandibular joint surgery

Ankylosis

Fibrous “false”
- Arthroplasty with meniscal salvage
- Arthroplasty with meniscectomy

Bony “true”
- Arthroplasty with:
  1. Interpositional graft (fascia, fat, dermis)
  2. Temporalis muscle flap
- Gap arthroplasty (2.5–3.0 cm minimal osteotomy with):
  1. Autogenous graft
  2. Alloplastic prosthesis (stock or custom)

Condylar fractures

Closed reduction
- 1. Intracapsular
- 2. Minimal displacement
- 3. "Greenstick" in children

Open reduction
- 1. Marked displacement of condyle out of glenoid fossa
- 2. Bilateral condylar fractures with apertognathia
- 3. Displaced condylar fractures with concomitant midface fractures
- 4. Continued pain, malocclusion, or obstructed opening following closed reduction (10–14 days)
- 5. Medical conditions precluding intermaxillary fixation