

Until the mid-nineteenth century, anyone who underwent radical surgery (e.g. amputation of an arm or leg) expected horrendous pain, if not death. A surgeon's speed in his reputed skills generally became a hallmark of a successful practice, but mortality always remained high, ranging from 90% in hernial procedures to 60% fatalities from simple amputations. Surgeons sought patients who were known for their "bottoms," a murkily-understood ability to meet all the pains and injustice of life with cheerful unconcern. "Bottom and bottom only supported the patient who submitted to surgery until little more than a century ago" (Frederick F. Cartwright, *The Development of Modern Surgery from 1830* [New York: Crowell, 1968], p. 23). Thereby all the complex procedures in surgical techniques provided in medical texts from Greek and Roman antiquity, as well as Byzantine, Muslim, and Renaissance sources, are either hopeful propaganda set out for gullible patients, or outright falsehoods that were intended to mislead both lay and professional readers. The Hippocratic surgeons who set bones and attempted an occasional operation for such common afflictions as an inguinal hernia were, we are led to believe, engaged in a fool's errand, since without anesthesia or any comprehension of what we smugly call the 'germ theory' all doomed to fail. Likewise dismissed are the detailed accounts of surgical procedures given by Cornelius Celsus in the era of Tiberius, along with the multi-stage techniques of hernia repair documented in the pages of Galen, Oribasius, Aetius of Amida, Paul of Aegina, and many later Muslim surgeons, including the rightly famous Abulcasis. That these medical personnel engaged in surgery is without doubt, but moderns tend to chuckle at the almost laughable suggestions that surgical operations actually benefited anyone. Then why, we may justly inquire, is there an increasingly prominent array of surgical tools now known from ancient sites? Were these, too, simply part of a cultural self-deception? And how could a surgeon in Roman times advertise his artistry in bladder-stone removal (viz. lithotomy) if everyone died under his care?

Missing, of course, is an accounting of analgesics and anesthesia, substances known for millennia that deaden the senses or engender effects we term narcotic. Archaeologists can prove that the opium poppy was common as a cultivar 20,000 years ago, and ancient literature is replete with mentions and descriptives of narcotics as varied as mandrake, opium, hyoscyamus, the thornapple (*Datura* spp.), and a number of other plants that possess a phytochemistry of alkaloidal activity. Prominent in Greek and Latin texts is the mandrake ('apples,' roots, root-bark, occasionally stems and leaves), and Dioscorides (IV, 75. 7) is the most lucid depiction of its properties as employed in surgery, cautery, and other pain-inducing medical procedures. The great Anazarban emphasizes the rural and agricultural contexts of mandrake's common use, but it is in a well-known scene in Apuleius' *Metamorphoses* (X, 9. 11-12) that we gain a sense that "everybody knows this." Other texts in Greek, Latin, and Arabic suggest the same, and one can document the ordinary employment of narcotics, especially *Mandragora* spp., in apparently successful surgeries by Celsus, Oribasius, Aetius of Amida, Paul of Aegina, and Abulcasis. Given the evidence of our texts, coupled with the surgical instruments that have survived (and which are easily correlated with particular operations in, e.g. Celsus, Galen, Oribasius, and Paul), in turn linked with scholarship that shows our Greek and Roman ancestors shrewdly applying botanical substances from specific plants with powerful narcotic effects, one views a surgery in Roman and Byzantine times largely successful within the parameters set by the practitioners. Mandrake is cosmopolitan, easily transplanted, and its use is best suggested by the extended passages in Dioscorides and later in Aetius and Paul. Our question, now, becomes refocused: what happened after the Renaissance? Numerous passages in various sources indicate that the use of mandrake in the alleviation of pain did not disappear at any one point or at any single juncture in medical history, but by the time one reaches the Renaissance, mandrake turns up occasionally in playwrights and writers who speak of how witches "flew" under the influence (they thought they were actually flying). Surgery by the eighteenth century was, indeed, barbaric.