Modern induced skull deformity in adults

WILLIAM GUMP, M.D.

Division of Pediatric Neurosurgery, Norton Neuroscience Institute, Louisville, Kentucky

The practice of induced skull deformity has long existed in numerous disparate cultures, but for the first time in history it can be applied to adults. While extremely limited in application, some ideas have persisted in the far fringes of modern Western culture with remarkable tenacity. Practitioners of extreme body modification undergo procedures, outside the sphere of traditional medical practice, to make striking, permanent, nontraditional esthetic tissue distortions with the goal of transgressing societal norms. The International Trepanation Advocacy Group represents another example of a fringe cultural movement, whose goal, rather than being purely aesthetic in nature, is to promote elective trepanation as a method for achieving a heightened level of consciousness. Both movements have relatively short and well-defined histories. Despite their tiny numbers of adherents, neurosurgeons may be called on to address relevant patient concerns preprocedurally, or complications postprocedurally, and would benefit from awareness of these peculiar subcultures. (DOI: 10.3171/2010.10.FOCUS10203)

KEY WORDS • skull deformity • trepanation • skull modification

Historically, skull modification has essentially been limited to infants in cultures in which this practice occurred. These traditions have been documented extensively in the anthropology literature and have been carried out at some time on every inhabited continent. Study of the history of neurosurgery supports the hypothesis that, until modern times, most cranial procedures in adults were undertaken to relieve mass effect from such entities as hematoma, abscess, or depressed skull fracture. This limited scope of cranial intervention, especially on an elective basis, was primarily due to technological constraints. These constraints have largely been overcome, and a wide spectrum of cranio-plasty procedures is now standard in the modern neurosurgical armamentarium.

Interestingly, there has been some movement in the past few decades, within some far-fringe elements in society, toward applying this technology outside the bounds of traditional medicine. There are 2 new general perspectives on the role of cranial modification that have emerged in 20th century Western culture and that may represent the first time that elective skull deformity procedures have been applied to adults. These ideas include the concept of extreme body modification, and the position promoted by the International Trepanation Advocacy Group. Both movements have relatively well-defined modern histories.

Body Modification

Deliberate alteration of the human body for non-medical reasons has a lengthy and rich history in human culture. These practices can be carried out for religious reasons, aesthetic purposes, sexual enhancement, as a rite of passage, to denote affiliation, or for shock value or self-expression. Male circumcision and ear piercing represent 2 of the more common and socially accepted practices today. One views these particular examples as one end of a spectrum, whereas at the other end one sees the psychopathology known as apotemnophilia, a disorder in which an otherwise rational individual has a strong and specific desire for the amputation of a healthy limb or limbs.

Although deliberate deformation of the skull has historically been restricted to infants, modern science now allows us to realistically consider previously impossible feats of modification. These boundaries have been explored and expanded outside the context of medical practice. The foremost practitioner of this extreme body modification is former piercer Steve Haworth. Haworth is the body modification artist credited with inventing and popularizing techniques that facilitated such creations as the infamous “Metal Mohawk” on client Joe Aylward (Fig. 1). This particular project was completed in 1996 and remains one of Haworth’s more notorious accomplishments. Among his many contributions to the advancement of body modification are techniques for subdermal and transdermal implants that alter the appearance of the individual’s head. (Figs. 2–4) (http://www.stevehaworth.com/wordpress/index.php/archives/category/modify-blog). The very limited but consistent demand for such procedures suggests that more radical cranial modifications will emerge in the future. Haworth and others continue to push back the boundaries of what is technically achievable. To date, no medical complications of procedures such as these have been reported in the neurosurgical literature.
The history of the International Trepanation Advocacy Group can be traced back to a Dutch medical student and admitted polysubstance abuser named Bart Huges, who was ultimately denied his medical degree by the University of Amsterdam at least in part for his vocal advocacy of marijuana use. During one particular episode in the early 1960s while under the influence of recreational psychoactive drugs, Huges came to believe that drilling a hole in one’s head would allow blood to more freely pulse around the brain, reproducing the state of an infant’s brain prior to closure of the cranial sutures. He was aware that by adulthood, the brain is denied an elastic bony covering against which to expand; in addition, he proposed that gravity gradually robbed the brain of some of its blood volume.12 Trepanation, as his theory went, had the potential to reverse both of these processes. Huges felt that prolonged standing on one’s head could yield the same result, albeit temporally, but only with trepanation could a long-term so-called “permanent high” be attained. He eventually delineated his ideas in a 1962 monograph alternately entitled either Homo Sapiens Correctus, named for what he believed would describe a new species of humans with holes in their skulls, or The Mechanism of Brainbloodvolume (BBV). He later also authored the book, Trepanation: the Cure for Psychosis, and an autobiography, The Book With the Hole. Although never finishing medical school, he did in 1965 successfully self-trepan, and, based on what he felt was an excellent benefit from this procedure, later convinced others to do the same.2

Huges met his first trepanation converts, Englishman Joe Mellen and his companion Amanda Feilding, in Spain in 1966. Three years later, Mellen was the second, after Huges, to self-trepan, with the goal of reaching an elevated state of consciousness. Unfortunately, his process was not at first successful; he made several bloody, botched attempts himself with a twist drill over several weeks before finally breaking through the inner table with a power drill. He apparently survived these traumas with minimal morbidity.12 Now an art dealer and publisher in London, Mellen described this series of actions in graphic detail in his autobiography entitled Bore Hole.

However, it was Amanda Feilding who was to become the standard-bearer for this procedure.2 Shortly after Mellen’s ultimately successful trepanation, she decided to undergo the procedure herself and, perhaps moved to greater caution from his series of attempts, searched for over a year to find a physician who would perform the trepanation. None could be found, so in 1970 she also performed her own self-trepanation. In addition, she had Mellen film it. The footage was used to create the short film, Heartbeat in the Brain, which clearly documents her making an incision in the middle of her forehead, drilling through her skull with a power drill, and then wrapping her head in a turbanlike bandage and mopping the copious blood from her face and white gown, all while standing in front of a mirror.
Feilding claimed that she first felt the beneficial effects about 4 hours later, describing the sensation as, “a lifting upwards, like the tide coming in, and at the same time a feeling of relaxation and silence in the head, a peace, a stopping of that voice in the head.” Feilding was so convinced of its beneficial effects that she twice ran for Parliament in the late 1970s under the banner, “Trepanation For the National Health.” She and Mellen remained companions for many years, had two sons together, but eventually split.

Feilding and Mellen later both remarried, and fascinatingly, each convinced his or her spouse to undergo trepanation as well. Feilding’s husband, Lord James Neidpath, was a former Oxford professor who, it turns out, taught an international relations course attended by Bill Clinton during his Rhodes Scholarship. Neidpath’s trepanation was performed by a surgeon in Cairo in 1995. Feilding herself had her own trepanation redone by a surgeon in Mexico in 2000.

In 1997, the case of a 65-year-old Englishman who self-trepanned using a power drill was reported. He apparently had been inspired by a recent BBC documentary featuring Feilding and Neidpath. He presented to a local emergency department several hours after successfully drilling through his skull with a power tool, with the initially profuse bleeding mostly stopped, but a CSF leak was still active. On presentation, the authors described a “curious ambivalence to the unusual nature of his actions.” Surgery was performed: the blood clot was evacuated, the dura mater closed, and the wound debrided; recovery was described as otherwise uneventful.

Feilding has used some of the substantial fortunes of her and her husband’s families to establish the Beckley Foundation, with the goal of funding scientific research in nontraditional avenues of the study of consciousness, including the effects of LSD on the brain. One 2008 publication by a Russian research group, funded by the Beckley Foundation, claimed to offer empirical evidence of cerebral hemodynamic benefit from trepanation but failed to attract much attention in the scientific community at large.

The Beckley Foundation also helped to fund the International Trepanation Advocacy Group, which was founded by American Peter Halvorson, who himself self-trepanned in 1973, inspired by the successes of Huges and Feilding, after his own unsuccessful search for a physician who would perform the procedure for him. The International Trepanation Advocacy Group currently estimates that over a dozen people worldwide have undergone trepanation since Bart Huges.

Halvorson himself was the center of controversy some years later when, in 2000, he allowed a camera crew from the American news magazine show 20/20 to film him and an assistant perform a trepanation on a willing adult subject. This ultimately led to criminal charges against Halvorson for practicing medicine without a license, although the “patient,” Englishwoman Heather Perry, suffered no overt complication and made no complaint herself; in fact, she reported relief from her chronic depres-
sion and fibromyalgia since the trepanation. Given that this procedure is not available in any sanctioned medical context, the majority of these have been self-performed.

**Discussion**

The increasing popularity of body modifications such as piercing and tattoos pushes those who wish to defy social norms to more radical lengths to achieve desired shock value. Given this small but persistent demand, as well as the existence of neurosurgical cranioplasty technology, it is only a matter of time before complications from these procedures are brought to the attention of our profession.

At least one such instance has already been documented from the practitioners of self-trepanation. Although highly unlikely to ever become a popular or widespread practice, Amanda Feilding and the International Trepanation Advocacy Group demonstrate that this idea resonates deeply with a small number of people. Given modern communications technology, their opportunity to share their vision with the rest of the world has never been greater. It remains a responsibility of the medical community to keep aware of practices such as these, for which the potential risks and consequences remain to be defined.

**Disclosure**

The author reports no conflict of interest concerning the materials or methods used in this study or the findings specified in this paper.

**References**


Address correspondence to: William Gump, M.D., Division of Pediatric Neurosurgery, Norton Neuroscience Institute, 210 East Gray Street, Suite 1102, Louisville, Kentucky 40202. email: william.gump@nortonhealthcare.org.