

Curiositas

UNDERGRADUATE QUIZ 1



1. What device is responsible for this cranial opening?
2. What was the reasoning behind the use of this technique?
3. Is this technique employed today?

Aaron Vage (PhD Student, Centre for Medical Education, Queen's University Belfast), Mr Thomas Flannery (Consultant Neurosurgeon).

POSTGRADUATE QUIZ 1



1. What does this case contain?
2. In what era were they used?
3. Are they still used today?

Aaron Vage (PhD Student, Centre for Medical Education, Queen's University Belfast), Prof Mary Frances McMullin (Consultant Haematologist).

UNDERGRADUATE QUIZ 2



1. What is happening here?
2. Why would this procedure be employed?
3. Does it have any place in modern medicine?

Aaron Vage (PhD Student, Centre for Medical Education, Queen's University Belfast), Dr Aidan Turkington (Consultant Psychiatrist).

POSTGRADUATE QUIZ 2



1. What is this contraption?
2. What is its purpose?
3. Is this type of procedure popular today?

Aaron Vage (PhD Student, Centre for Medical Education, Queen's University Belfast), Mr Brendan Hanna (Consultant ENT Surgeon).

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Curiositas: Answers

UNDERGRADUATE QUIZ 1

1. The technique of trephination is one enshrined in lore, reminiscent of a more primitive time in our human existence. From South American tribal ritual to the emergent medicina of the Roman Empire, the trephine has been a source of terror for millennia. Archaeological sites in Europe, Asia, Australasia, and The Americas have yielded a series of archaic crania exhibiting the circular openings often associated with trephination; the oldest dating back to 8,000 BCE¹.

2. Within Peruvian tribal culture the skulls of those suffering from severe headaches, delirium and behavioural abnormalities were penetrated with blades of obsidian known as 'Tumi', creating a gateway through which afflicting spirits could leave. In ancient Greek medicine it was believed that the use of a trephine to create a cranial opening allowed stagnant blood to drain from the head before turning to pus². Proponents of trephining in Western medicine often used the technique in the treatment of cranial fractures³. However, the use of trephination as a therapeutic technique continued; shockingly, English miners in the 19th century insisted on having their skulls punctured after a blow to the head, despite no obvious signs of fracture⁴.

3. In the modern era of neurosurgery, mini-craniectomies or burr hole openings in the skull are commonly employed to drain chronic subdural haematoma or facilitate ventriculostomies to combat hydrocephalus⁵ and could thus be considered forms of trephination. Indeed, a more generous form of trephination, in the guise of decompressive craniectomy (with temporary storage of the bone flap in an abdominal subcutaneous pouch), may be required in patients with raised intracranial pressure secondary to traumatic brain injury⁶. Thankfully, the days of using trephination, per se, as a therapeutic intervention are past. However, it always makes one think, what practices are currently in vogue that may be deemed barbaric in the future?

¹Parapia, LA 2007. *British Journal of Haematology*, 139, 14-19.

²Bender, GA 1966. *Great moments in history: trephining in ancient Peru*. Detroit. Northwood Institute Press.

³Newman, WC *et al* 2016. *World neurosurgery*, 92, 148-150.

⁴Gross, CG 1999. *Neuroscientist*, 5, 263-269.

⁵Bartlett, HH *et al* 2021. *World Neurosurgery*, 155, 115-121.

⁶Flannery, T & McConnell, RS 2001. *British Journal of Neurosurgery*, 15, 518-520.

UNDERGRADUATE QUIZ 2

1. As Nazi Germany annexed neighbouring Austria during the 1938 Anschluss, over 900 kilometres away in Rome, colleagues Ugo Cerletti and Lucio Bini had developed a device to treat the symptoms of psychosis – a technique that would become known as electroconvulsive therapy (ECT). In the early 20th century asylums were overflowing with untreatable psychiatric patients. Therefore, on reporting a 'staggering' improvement in the psychotic symptoms of a number of patients post-ECT, it wasn't long before Cerletti and Bini's brand of shock therapy was being rolled-out in psychiatric institutions across the globe¹.

2 & 3. The way in which ECT acts as a therapeutic intervention is multifaceted – neurotrophic factors, modulation of emotional circuitry and neurogenesis all touted as key elements². ECT's public image is controversial. On one hand, there are parts of the world where the practice is banned – largely due to its horrific application within the Nazi era³; not to mention its unfavourable portrayal in Ken Kesey's novel, 'One Flew Over the Cuckoo's Nest.' On the other hand, ECT now has an established evidence base and is recognised as one of the most effective treatments for severe depression^{4,5}. In recent years, the technique of transcranial magnetic stimulation (TMS) has emerged as a more 'acceptable' procedure in terms of treating major depression. However, ECT has consistently outperformed TMS in a number of randomised

control-trials⁶. It is therefore no shock that ECT has gained a foothold in modern medicine that it won't give up so easily.

¹Faedita, GL *et al* 2010. *Journal of Affective Disorders*, 120, 12-15.

²Gazdag, G & Ungvari, GS 2019. *World Journal of Psychiatry*, 9, 1-6.

³Gazdag, G *et al* 2017. *History of Psychiatry*, 28, 482-488.

⁴Nordanskog, P *et al* 2015. *Journal of ECT*, 31, 263-267.

⁵UK ECT Review Group. 2003. *Lancet*, 361, 799-808.

⁶Milev, RV *et al* 2016. *Canadian Journal of Psychiatry*, 61, 561-575.

POSTGRADUATE QUIZ 1

1 & 2. Blood, phlegm, black and yellow bile are the four constituent humours of the human: according to the godfather of medicine, Hippocrates. The notion of letting blood was largely influenced by the theories of Hippocrates, and his Greek counterpart, Galen; both believing that an unbalanced proportion of these aforementioned humours was to blame for all illness¹. In the early days, a selection of crude instruments were employed to allow blood to escape from the afflicted². However, as with most outrageous medical practices, the 19th century is where bloodletting reached its dizzy heights. The humble leech eventually became the creature of choice concerning the letting of blood. Although, a French surgeon by the name of Charles Louis Heurteloup thought that an artificial version of the organic bloodsucker would be a more precise tool; thus, creating the spring-loaded, vacuum pump device known as the artificial leech, in 1840³.

3. As the medical world eventually realised the error in many ancient Greek theories, techniques such as bloodletting fell by the wayside; one of its last endorsements appearing in the 1923 edition of *Principles and Practice of Medicine*⁴. Today therapeutic phlebotomy is used to manage conditions such as haemochromatosis and polycythaemia vera, in order to reduce the iron load or lessen the risk of cardiovascular events⁵.

¹Greenstone, G 2010. *BC Medical Journal*, 52, 12-14.

²Bell, TM 2016. *Journal of Lancaster General Hospital*, 11, 4.

³Feldman, H 1994. *Laryngorhinology*, 73, 551-555.

⁴Osler, W & McCrae, T 1923. *The principles and practice of medicine*. New York. D. Appleton & Co.

⁵Assi, TB & Baz, E 2014. *Blood Transfusion*, 12, s75-83.

POSTGRADUATE QUIZ 2

1 & 2. As the 19th century drew to a close, the tonsillectomy was reaching its zenith as the surgeons' procedure of choice in the battle against a variety of infectious respiratory diseases. Fast forward to the modern era, and the advent of antibiotics has seen a steady decline in the need for this procedure. The removal of human tonsils has been performed since antiquity; the Roman encyclopaedist Cornelius Celsus documented a tonsillectomy with use of the fingers during the 1st century¹. As time passed, a variety of string- and snare-based contraptions were employed in the business of tonsil removal². However, the distinct lack of anaesthesia in the 18th century saw the rise of blade-like instruments, unaffectionately termed tonsil guillotines. The so called 'tonsil guillotine' was adapted from a device known as the uvulotome; developed by the Norwegian, Canute of Thorbern, as a means to remove oedematous uvulae³.

3. In 2002, Matthews *et al.*³ conducted a postal survey of 329 UK consultants, aiming to examine the role of guillotine tonsillectomy in modern otolaryngology. Interestingly, they found that more recently appointed consultants (< 10 years in post) preferred the use of guillotine tonsillectomy over other methods. However, due to the advent of intracapsular techniques, like 'Coblation', the use of guillotine tonsillectomy has since fallen from the cutting edge.

¹Younis, RT & Lazar, RH 2002. *Laryngoscope*, 112, 3-5.

²Hultcrantz, E & Ericsson, E 2013. *ORL*, 75, 184-191.

³Matthews, J *et al* 2002. *Journal of Laryngology*, 116, 988-991.

