

Cases of trephination in ancient Armenia skulls

Trepanation of the cranial vault, one of the most intriguing paleoneurosurgical techniques. Trepanation has garnered intense interest, because it represents an early form of cranial surgery practiced well before the advent of modern medicine. Trepanning seems to have been prescribed as a treatment measure for headache, mental illness, epilepsy, and most of all, head trauma. Instruments employed included trephines, knives, tumis (T-shaped knives), saws, chisels, burins, hammers, sharp stones, and forceps. Individuals often survived the initial surgery and several subsequent surgeries (despite a lack of anesthesia and antibiotics), as shown by individuals with multiple, well-healed trepanations.

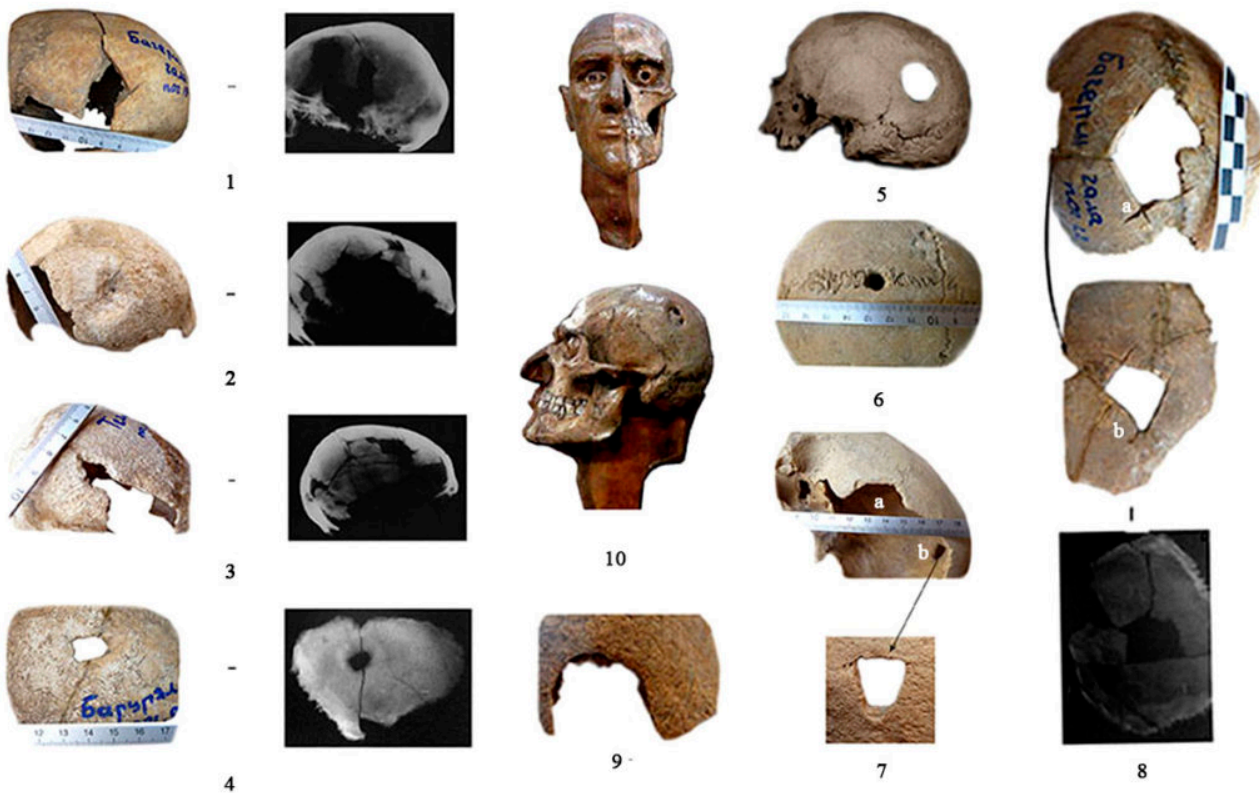


Fig. 1. Trepanations in ancient Armenia: 1. Bakheri chala: bur. 18, 2. Bover: bur. 7, 3. Tekhut: bur. 1, 4. Barcryal: bur. 9, 5. Lchashen: bur. 83, 6. Karmir: bur. 1, 7. Artsvakar: bur. 5, 8. Bakheri chala: bur. 22, 9. Shirakavan I: bur. 9, 10. Lchashen: bur. 193/6.

Trepanned skulls from the Bronze and the Iron Ages, have been found in Armenia. Traces of trepanations were found on 12 skulls (Lchashen: bur. 71, bur. 83, bur. 193/6; Artsvakar: bur. 5; Tekhut: bur. 1; Karmir: bur. 1; Bakheri chala: bur. 18, bur. 22; Barcryal: bur. 9; Karashamb: bur. 9;

Noratus: bur. 7), with the adhesion signs on six of them (Lchashen: bur. 71, bur. 83, bur. 193/6; Artsvakar: bur. 5; Tekhut: bur. 1; Barcryal: bur. 9; Shirakavan I: bur. 9). Skull have also been found showing incomplete trepanation, his was probably due to death of the individual during the procedure, which was then halted (Fig. 1-1). Trepanned skulls most frequently belong to adult males, but others have been found from women and children under 9. In these cases the individuals showed evidence of previous trauma to the skull or infection (mastoiditis, tuberculosis), suggesting that the operation had been carried out for therapeutic purposes. One of the examples is the skull of an individual from a burial ground of Lchashen (Fig. 1-10), the half-face facial reconstruction, made by the doctor A.D. Dzhagaryan and currently housed in the museum in Sardarabad, shows possible intravital perforation of the skull on its exposed side. Trephination-like holes were also made on corpses in order to obtain bony fragments with magic properties or for other purposes (Fig. 1-7b). The Late Bronze Age Armenian population demonstrated both clear intravital trepanations and «geometrically» openings without healings. These are the so-called cultical trephinations. The third type, the custom of symbolic trephination (Fig. 1-2). Symbolic trepanations could possibly simulate actual penetration into the cavity of the skull. Individual from Bover (bur. 7) is the example of trepanation where the scraping technique has been used. Therapeutic motivation of such kind of activity is not excluded, but it seems to be doubtful. External «trepanning» sometimes looks to be a part of initiation rite, indicating transition of individual to other age and social category (teenagers transition, marriage, child birth in women). Individuals from the Bronze and Iron Ages dug up with rich grave furniture and supposed to belong to this upper stratum of society are primarily characterized by the custom of trephination, and, as our results demonstrate, craniologically they seem to be more homogeneous. Our ancestors from the Bronze and the Iron Ages actually may have performed seemingly dangerous and invasive surgery with unprecedented and surprising success.

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