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Recensioni

Reviews

Galen's Recipe for Untypical Sitz Bath (ἐγκάθισμα)

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ABSTRACT – The article discusses an unusual prescription for a sitz bath (ἐγκάθισμα) derived from Galen's treatise *De compositione medicamentorum per genera*. The term ἐγκάθισμα is not used in any other known fragment of the writings of the famous Pergamonian. The prescription given in discussed passage differs from most of the known prescriptions for sitz baths preserved in other medical authors of antiquity, because it consists mainly of metals and their minerals.

KEYWORDS – ancient medicine; Byzantine medicine; Galen; hydrotherapy; metals in medicine; sitz baths – bagni da seduti; Galeno; idroterapia; medicina antica; medicina bizantina; metalli in medicina.

Water has been one of the most important substances in medicine since ancient times. People engaged in healing were interested in its properties, origin, and influence on the human body. In the Greek context, which interests us here, we find traces of this phenomenon already in the *Corpus Hippocraticum* (V/IV century BC, and later) [1], as well as in many other authors and physicians, such as Diocles of Carystus (IV century BC), Praxagoras (IV century BC), or Erasistratus (IV/III century BC) [2].

The Greeks, on the one hand, described water itself, being well aware that the determination of its characteristics has an overwhelming influence on the preservation of health in the first place because we drink it. They therefore distinguished between rainwater (considered the healthiest), spring water (taking into account additional geographical conditions), well water, and finally river and lake water [3]. They foresaw different procedures to make water fit for drinking [4]. On the other hand, they wrote about its specific applications in medicine [5].

[1] Walton - Beeson - Bodley Scott 1986, 794.

[2] Cf. Ath. II 46 a-d (Kaibel 1887-1890).

[3] Cf. Hippoc. *Aer.* 7-9 (Marchewka - Świder 2014); Orib. *Coll.* V 1 (Raeder 1928-1933); Aet. III 165 (Olivieri 1935-1950); Paul. Aeg. I 50 (Heiberg 1921-1924).

[4] Kokoszko - Jagusiak 2010, 32-33.

[5] Zytka 2019, 128.

One of the most important applications in Greek and Roman [6] times was to arrange appropriate baths adapted to the patient's condition. Here, as in the case of consumption, it was necessary to determine the nature of the water to be used in therapy. One of the main factors – besides its temperature [7] – in this case were the additives contained in the liquid that affected its properties. These could be added intentionally to get the desired effect of the water (e.g. oil, rosemary, salt, pumice stone, fenugreek, linseed, myrtle etc.), but they could also enrich it naturally. In this case it is, above all, the minerals contained in the liquid that were of great importance in the context of therapeutic applications, since it was possible to distinguish between the advantages and disadvantages of nitrous, saline, aluminous, sulphurous, copperish and other baths [8] (metals and its minerals could also be added to water intentionally). Depending on the mineral content of the water (which most often was strongly connected with different place of its origin), it was suitable for treating other ailments [9] (but definitely not for drinking, according to the sources) [10]. Thus, for example, copious hot discharges were to be best treated with iron (II) sulphate dissolved in water, which was then to be used for washing the eye, and washing the body that was linked with early stages of oedematous afflictions of the stomach, was to be treated with natural baths of aluminous, nitrous and sulphurous waters [11].

The knowledge of mineral baths at that time stemmed from centuries of tradition. It was largely based on observations of people working in mines about certain metals or connected to metallurgy. Wounds and injuries of various kinds that these people sustained sometimes healed faster and without complications. After some time, it was realized that this was closely related to the presence of these metals. This gave rise to the tradition, already well established in the medicine of Galen's time (II/III century AD) [12], of the external use of biocidal properties of metals,

[6] On the Roman culture of bathing see, for example, Fagan 2001, 403-426; Fagan 2006, 190-207.

[7] Cf. Tsitsis *et al.* 2013, 464-465.

[8] Orib. *Syn.* I 29 (Raeder 1964); Aet. III 167; Paul. Aeg. I 52; cf. Gianfaldoni *et al.* 2017, 566-567; Zytka 2019, 130.

[9] Cf. Кирова 2010, 156-159.

[10] Kokoszko - Jagusiak 2010, 30.

[11] Zytka 2019, 140, 142.

[12] Galen was the most prolific medical (and also philosophical) author of antiquity, who left hundreds of treatises, of which more than one hundred survived. Strongly influenced by humoral theory, he developed it in his works. Galen was active on the field of various scientific disciplines, including anatomy, pharmacology, physiology, pathology, and neurology. Esteemed and successful in life, he was highly regarded as

like copper, zinc, gold, or silver, and its minerals [13], which was, on the other hand, far from being precise, as the properties of the same mineral could vary depending on the place of origin [14].

Therefore, in the preserved medical sources we find a number of applications for therapeutic baths in waters with appropriate mineral content. Appropriately selected water was supposed, for example, to help with some ophthalmological ailments [15], it was also suitable for convalescence after apoplexy (stroke) [16], in oedema [17], or in dermatological problems (pruritus) [18].

A specific form of therapeutic baths used in antiquity were sitz baths, which in Greek were referred to as ἐγκάθισμα (*enkáthisma*). As a form of medicine, they are classified in pharmacy as infusions.

One of the most pertinent and representative, yet concise descriptions of sitz baths is a passage by Aetius of Amida (VI century AD) [19], from the third book of his *Iatricorum libri*. This description is worth quoting:

> Περὶ ἐγκαθισμάτων.
> Ἐγκαθίσματα παραλαμβάνομεν ἐπὶ τῶν φλεγμαινόντων μερῶν ἢ δι' ἀπορίαν βαλανείου ἢ διὰ τὴν τῆς δυνάμεως ἀσθένειαν ἢ δι' ἕτερόν τι κωλύον. ἐπὶ μὲν οὖν φλεγμαινόντων νεφρῶν χρώμεθα ἀφεψήματι τήλεως, μαλάχης ἡμέρου τε καὶ ἀγρίας λινοσπέρμου· ἐπὶ δὲ λιθιώντων τούτοις μὲν αὐτοῖς διὰ τὴν φλεγμονὴν καὶ ἀρτεμισίας δὲ ἀφεψήματι καὶ λιβανώτιδος καὶ πετροσελίνου καὶ ναρδοστάχυος. τοῖς δ' αὐτοῖς χρηστέον καὶ ἐπὶ κύστεως προσβάλλοντες καὶ πήγανον. ἐπὶ ὑστέρας δὲ ἀρτεμισίας ἀφεψήματι ἐλελισφάκου καὶ δάφνης καὶ τῶν ὁμοίων· ἐπὶ δὲ κώλου σίνωνος καὶ πάνακος ἀφεψήματι καὶ δάφνης καὶ

authority by the next generations of physicians, who often followed his opinions. Cf. Sarton 1954; Hankinson 2008, 1-33; Nutton 2020.

[13] Laskaris 2016, 149-154; cf. Gabriel 2012, 153.

[14] These substances may have had somewhat different characteristics in the different regions where they were found, despite appearing under the same name. This, in turn, may have influenced their therapeutic efficacy. Ancient sources sometimes provide, in connection with this phenomenon, additional information related to the place of origin of the metal or mineral in question, which indicates an awareness of the existence of these differences. Cf. Photos-Jones 2018, 418-433; Photos-Jones *et al.* 2018, 179-192.

[15] Alex. Trall. II 59 (Puschmann 1963).

[16] Gal. *De loc. aff.* 3, 11 (Kühn 1824); Orib. *Syn.* VIII 14; Aet. VI 26; Paul. Aeg. III 18.

[17] Paul. Aeg. III 48.

[18] Aet. XIV 20; Paul. Aeg. IV 4. See also Zytka 2019, 142-143.

[19] Aetius was one of the early Byzantine physicians, who followed Galen (and Oribasius). His treatise repeats (usually in shortened and condensed way) Galen's statements and observations. Because of that, it lays among the most important examples of the phenomenon called Galenism. Cf. Lehmann 1930, 205-206; Schulze 2003, 120-121; Garzya 2005, 19-20; Scarborough 2013, 742-762; Salazar - van der Eijk 2020, 1-22.

τῶν ὁμοίων· ἐπὶ δὲ ἕδρας μελιλώτου κωδύων ῥόδων· ἐπὶ δὲ ῥευμάτων ὑστέρας καὶ αἱμορροίδων ἐν ἕδρᾳ ἀρνογλώσσου ἀφεψήματι πολυγόνου σιδίων ῥόδων βάτων καὶ τῶν ὁμοίων· ἐπὶ δὲ τραυμάτων σπασμὸν καταγγελλόντων ὑδρέλαιον λιπαρόν. συγχριστέον μὲν οὖν πάντας καὶ ἐμβιβαστέον μέχρι κατωτέρου τοῦ ὀμφαλοῦ. δεῖ δὲ προλελιπάνθαι καὶ τὰ μὴ βρεχόμενα μέρη καὶ μάλιστα τὴν κεφαλὴν καὶ σκέπτεσθαι ὅπως μὴ συμπληροῖτο. [20]

On sitz baths.
We use sitz baths on parts of the body with inflammation, or when baths cannot be used, or because [the patient's] strength is weakened, or for some other reason. In kidney inflammation we use fenugreek (*Trigonella Foenum-graecum*), common mallow (*Malva silvestris*), and wild linseed (*Linum usitatissimum*) seeds. In patients suffering from bladder stones and because of its inflammation, the infusion of wormwood (*Artemisia abrotanum*), parsley (*Petroselinum crispum*), and spikenard (*Nardostachys jatamansi*) should be used. These should be used for cystitis by adding rue (*Ruta graveolens*). For inflammation of the uterus, infusion of wormwood, wine flavoured with sage (*Salvia officinalis*), laurel and the like should be used. Decoction of stone parsley, panacea, laurel (*Lauraceae*) and similar – for intestines. For diseases of the anus – fenugreek, tassel hyacinth (*Leopoldia comosa*) inflorescence, and rose (*Rosa*). For uterine discharge and haemorrhoids in the anus – a decoction of greater plantain (*Plantago major*), common knotgrass (*Polygonum aviculare*), pomegranate-peel, rose, blackberry (*Rubus*) and the like. Water mixed with olive oil [helps] for wounds that cause contraction. You should spread everything and enter it down below the navel. Lubricate those parts that are not wet and previously anointed. You should cover your head so that the head does not get bloodshot.

In the above passage, Aetius listed several characteristics that were typical of the therapy by sitz baths that we find in the Greek medical literature of antiquity and the Byzantine era. According to Aetius' description, ἐγκαθίσματα was used for a number of abdominal ailments of various aetiologies, such as inflammations (e.g. nerves, bladder), mechanical injuries, kidney stones, discharge, etc. Their common feature, according to Aetius' remarks, is the use of various organic products. These are primarily plant products. The author of *Iatricorum libri* mentions fenugreek (*Trigonella foenum-graecum* L.), mallow (*Malva silvestris* L.), parsley (*Petroselinum crispum* Mill.), tassel hyacinth (*Leopoldia comosa* Parl.), blackberry (*Rubus fruticosus* L.), among others, but the list of species used in ancient and Byzantine medicine was much longer, since in treatises written by other authors of that period we find, for example, mentions of plants such as myrtle (*Myrtus communis* L.), chasteberry

[20] Aet. III 173.

(*Vitex agnus-castus* L.), Sicilian sumac (*Rhus coriaria* L.), etc. Additionally, according to Aetius, sometimes substances of animal origin (mostly fat) were also used in therapy with ἐγκαθίσματα.

Almost all the sitz baths described in Graeco-Roman and Byzantine medical literature consist of such a more or less complex mixture of ingredients. Some of the earliest known examples of their use in Greco-Roman medicine are given in large numbers by Pedanius Dioscorides (I century AD) [21] and Soranus of Ephesus (I/II century AD) [22] in their treatises, and this applies mainly to gynaecological ailments.

In this context, the recipe we would like to discuss in more detail in our presentation appears to be original, as it is composed almost entirely of metals and its minerals, and it is the only known recipe of this kind. It is also interesting because in Galen's surviving oeuvre there are no more prescriptions for sitz baths [23], in other words, this particular medical term ἐγκάθισμα does not appear in his works in any other place. The fragment in question comes from the treatise *De compositione medicamentorum per genera*.

> ἐγκάθισμα πρὸς αἱμορῥοΐδας τὸ Φανίου.
> χαλκάνθου, στυπτηρίας σχιστῆς, χαλκίτεως, μίσυος ὠμοῦ, σανδαράχης ἀνὰ δραχμὰς δ΄. λεῖα πάντα ἔχε. ἐπὶ τῆς χρήσεως οὖρον παλαιὸν ταριχηρὸν ἀνδρὸς ἑνός, μέτρῳ ξε. β΄. βάλε εἰς ὀστρακίνην λεκάνην, τοῦ δὲ φαρμάκου < ιβ΄. Προσέγχεον τοῦ οὔρου, ὥστε ἀεὶ τοὺς δύο ξέστας τηρεῖσθαι. τούτῳ χρῶ ἐγκαθίζων ἐπὶ ἡμέρας ζ΄. ἐν ταύταις γὰρ ἐνεργεῖ. [24]
>
> Phanias' [25] sitz bath for haemorrhoids: Equally four drachmas of a copper sulphate solution, divided alum, Cypriot copper ore, copper sulphide, unfired arsenic sulphide. Grind it all. For this, use the old salted/pickled urine of one man in the amount of two xestes [1091 mL; 1 xestes = 545,5 mL]. Put in a clay bowl 22 drachmas [90,64 g; 1 drachma = 4,12 g] of the medicine. Add the urine so that you always make sure it is two xestes [1091 mL]. Use the medicine by sitting for seven days, for then it works. When it becomes a sticky sludge, lubricate the anus.

[21] Cf. eg. Dsc. I 18; I 78; I 103; I 107; I 112; III 113; III 123; V 3 (Wellmann 1906-1914).

[22] Sor. *Gyn*. III 23; III 28; III 38; IV 38 (Ilberg 1927).

[23] It should be added that the term ἐγκάθισμα is mentioned twice in Pseudo-Galenic treatise entitled *De affectuum renibus insidentium dignotione et curatione* (XIX 668; XIX 669 [Kühn 1830]).

[24] Gal. *Comp. Med. Gen*. XIII 840 (Kühn 1827).

[25] Phanias was a doctor active between III and I century BC. This passage was cited by Andromachus, who, in turn, was later cited by Galen. Cf. Keyser - Irby-Massie 2008, 641.

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In the medical literature of antiquity and early Byzantium, the ingredients listed by Galen have been characterized according to their properties.

Copper II sulphate (*chalkánthos*) had, according to ancient physicians, a warming astringent effect and healed wounds causing eschars. It was used for flat worms and as an antidote for poisonous fungi. It was also used in head hygiene [26], for dandruff [27] and headaches [28]. It was used to soften hard eyelids [29]. Moreover, it helped as a part of collyria (a type of drop) for eye diseases [30], for purulent wounds/white coloured wounds, and gout [31].

The action of the second ingredient, alum (*styptería*), is, according to the sources, warming and astringent. It cleans pupils endangered by cataract and helps in case of tumours. Sources claim that alum is more effective when not ground. Burned as cooper ore, it stops gangrene/arthritis and haemorrhages. It also helps in gums disease, and loosened teeth. Moreover, it helps aphthae and ear leaks, leprosy, blisters from frostbite, and removes foetuses [32]. What is more, it is used in case of *haemorrhage* [33].

The third ingredient, copper ore (*chalkítes*) has an astringent and warming effect according to ancient and early Byzantine authors. Besides this, it accelerates the healing of wounds by producing eschars. It cleanses canthi of the eyes and eyes moderately, belongs to astringents. It helps against erysipelas, against snakebites, and against uterine and nasal bleeding. In dry form it works on growths occurring on the gums, on ulcers and tonsillitis. When burned it is especially used as an ingredient in medicines used for ophthalmological complaints. In turn, when melted, it has a beneficial effect on hardened eyelids [34].

The fourth of the mentioned ingredients is copper sulphide (*mísy*). The best, according to sources, came from Cyprus, although the one extracted in Egypt was also good. It had similar properties to *chalkítes*. It was considered a caustic and an astringent [35]. It was applied on contaminated wounds [36], in therapy of people spitting blood [37], in cases requiring

[26] Dsc. V 98; Gal. *SMT* XII 238 (Kühn 1826).
[27] Paul. Aeg. III 3.
[28] Paul. Aeg. III 4.
[29] Aet. I 77.
[30] Paul. Aeg. III 22.
[31] Aet. II 3.
[32] Dsc. V 106; Gal. *SMT* XII 236; Aet. II 74.
[33] Orib. Ecl. 147 (Raeder 1933); Aet. XI 27.
[34] Dsc. V 99; Paul. Aeg. VII, *s.v.*
[35] Aet. II 64; Paul. Aeg. VII 3, *s.v.*
[36] Paul. Aeg. VII 17.
[37] Paul. Aeg. VII 17.

stopping bleeding [38]. Moreover, it was recommended for the treatment of gout [39], mouth [40] and ear wounds [41].

The fifth component, arsenic sulfide (*sandaráke*), particularly realgar, or in different words tetraarsene tetrasulfide had, according to the sources, the same properties as orpiment [42]. It was classified as a caustic [43] and an astringent [44]. It was used as a component of medicines for skin diseases, e.g. dandruff [45], it helped in the treatment of baldness. With olive oil it was used for lice [46]. Furthermore, it was used to treat various nose and mouth sores, rashes and tumours in lung diseases, it belonged to smoke disinfectants and was therefore used as an expectorant in long-term coughs [47]. *Sandaráke* also helped with the voice when given with honey in medicines for asthma. Finally, it was used to treat diarrhoea, abdominal diseases, haemorrhoids [48], and for ulcers of various types [49].

Urine, mentioned in the prescription, was an ingredient used by ancient physicians as an additive to medicines probably (according to our supposition) because of its emollient properties, which were due to the presence of ammonia in its composition.

It is interesting that Galen did not list water in his prescription, and the only fluid mentioned by him is urine. (Of course, urine consists of more than 90 percent of water, but it's not the same.) It is an open question whether the medicine actually did not contain it, or this addition was so obvious that Galen decided not to mention it.

Today, sitz baths are less and less frequently used as a traditional treatment method. They are used to alleviate discomfort and pain in the area of the anus and genitals in such diseases as: haemorrhoids, anorectal injuries, perianal fistulas, perineal incision or vaginal diseases. The mechanism of action of the raw materials used in the preparation of the pessaries is mainly based on their astringent, anti-inflammatory, antimicrobial and circulation-enhancing properties.

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[38] Paul. Aeg. VII 17.
[39] Paul. Aeg. VII 17.
[40] Aet. II 3.
[41] Aet. VI 82.
[42] Gal. *SMT* XII 235; Orib. *Coll.* XIII 1; Aet. II 68; Paul. Aeg. VIII 3, *s.v.*
[43] Aet. II 69.
[44] Aet. II 229.
[45] Gal. *Comp. Med. Loc.* XII 463 (Kühn 1826-1827).
[46] Gal. *Comp. Med. Loc.* XII 463.
[47] Aet. III 229.
[48] Dsc. V 105; Orib. *Ecl.* 54; Paul. Aeg. V 61.
[49] Orib. *Ecl.* 107; Paul. Aeg. IV 33.

Was the therapy with the discussed sitz bath effective for haemorrhoids in the light of modern pharmacology? Clinical studies would have to be carried out to determine this. However, taking into account that all the ingredients had astringent properties, not only according to the medicine of that time, but also according to contemporary pharmacology, it seems reasonable to assume that it could help in some stages of haemorrhoidal disease.

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