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Letter to Editor

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Cisterns as Vital Structures: Byzantine Cisterns and Subarachnoid Cisterns

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Dear Editor,

In an exciting and innovative article, Hakan has compared the subarachnoid cisterns of the central nervous system with the cisterns built to store the water in the society (7). Hakan provides historical information about the Roman emperor Constantine I, who made a 242-km-long water line from the Strandzha Mountains to Constantinople in 330 AD (7). Constantinople is the modern city of Istanbul. 'Aqueduct of Valens' and 'cistern of Aetius', was constructed by Aetius in the year 421 AD. It is fantastic to know that this cistern could hold 250-300 tons of water since 1928, it is used as a football stadium. The illustrative examples of columns of the Basilica cistern and the medusa head depict a vivid and glorious historical past. This present article offers us an excellent combination of science and art related to Istanbul (7). Many studies about the subarachnoid cisterns are available in the scientific literature.

For example, Roldan-Valdez et al. present a collaborative stance of radiologists and neurosurgeons on clinical cisternal anatomy and pathology (11). Altafulla et al. discuss 335 articles of embryology, gross anatomy, surgical anatomy, and approaches to the significant basal cisterns (1). Eiora et al., discussed about the subarachnoid space and its cisterns in detail and their implications to the radiologists (5). Baka and Spickler, discussed the functional, gross and imaging anatomy of the suprasellar cisterns, including their borders and contents. They emphasized the third ventricle floor, along with the descriptive detail about the optic chiasm, optic tracts, anterior third ventricle, tuber cinereum, pituitary stalk (infundibulum), choroidal fissure, lamina terminalis, gyrus rectus, uncus, and the cerebral peduncles (4). Mortazavi et al. discussed the anatomy of subarachnoid trabeculae in intricate detail. They highlighted their mechanical support to the neurovascular structures, varied appearance, configuration, and proximity to blood vessels (10). Mortazavi et al. stated the importance of sharp microsurgical procedures over the blunt dissection, also commenting upon their relation to the CSF flow and hydrocephalus (10). Anık et al. reported that 3D sequencing and multiplanar reformat imaging will help study the Liliequist's and other membranes related to the cisterns (2). Anık et al. also observed that the Liliequist's membrane is a continuation of the basal arachnoid membrane (3). Etus et al. reported that hydrocephalus formation and its duration might alter Liliequist's membrane (6). There are several advanced studies available about the cisterns and their related structures. But there is no article in the scientific literature, which discusses the historical aspects of the subarachnoid cisterns. Key and Retzius were the first to use the word 'cisterna' to describe the subarachnoid structures and almost all the subarachnoid cisterns (8). Liliequist, who further highlighted these subarachnoid cisterns by

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performing the pneumoencephalography in corpses in 1956 (9). Hakan et al. has provided the best and vivid examples of subarachnoid cisterns and human-made water cisterns in the Byzantine Empire, Istanbul, Turkey (7). Hakan's article offered comprehensive information about several pioneers, legends, and inventors of the cisternal structure and function (7). During the teaching of medical students, we always explain the underlying meaning of cistern. Hakan examples of similarities in the functioning of cisterns built by man and those existing in the central nervous system can be treasures for the teachers who teach neuroanatomy to the students (7).

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