Endocrinology and Art

GOITER IN THE COURT OF THE BYZANTINE EMPRESS, THEODORA

This beautiful mosaic, which can be seen on an inner wall of the S. Vitale Basilica in Ravenna, Italy, portrays the Byzantine Empress Theodora (497-548 AD) and her court. The work was completed in 547 AD, and shows Theodora and her courtiers in the Sacre Palace of Emperor Giustiniano (her husband) in Constantinople. Note that the two male figures on the right side of the Empress have asymmetrical enlargement of their neck, suggesting nodular growth of the thyroid gland. Similarly, the group of female figures on the Empress' left side exhibit symmetrical swelling of the neck, suggesting the presence of diffuse thyroid enlargement. The fullness below the eyes on some of the figures might also be interpreted as periorbital edema. These figures contrast with the apparently normal appearance of Theodora's neck and the neck of her maid (second figure left of Theodora), raising the possibility that several of the individuals in Theodora's court may have had nodular or diffuse goiters and/or hypothyroidism.

The reasons for the development of goiters among subjects in the Byzantine court in the 5th century AD are, at present, only speculative. What we now commonly recognize as goitrous enlargement of the neck was thought during the Byzantine period to be due to lymph node enlargement and referred to as "bronchocele" or "struma". This misconception may have arisen from Galen's reference to this structure as a sort of lymph node in the lost treatise, "De Voce", written in the 2nd century AD. In fact, the personal physician of Emperor Giustiniano, Aetios of Amidia (527-565 AD), defined "bronchocele" in "Tetrabiblion" (ΒΙΒΛΙΩΝ ΙΑΤΡΙΚΩΝ, in ancient Greek) as chronic swelling of the "larynx lymph glands". It is of interest that Hippocrates, in the 5th century BC, suggested that neck swelling may be observed in individuals who drink water derived from rain or snow (which is deficient in iodine), a view reiterated in the 1st century AD by Pliny, relating "deformity of the throat" to the quality of the drinking water. Since the water supply to Constantinople during the reign of Giustiniano was mainly provided by underground cisternae that collected and filtered rain water (e.g. the famous Cisterna Basilica), it is possible that this, among other reasons, contributed to a limited iodine supply to the Byzantine population. Indeed, even at the present time, Turkey is considered to be a relatively iodine-deficient area based on World Health Organization criteria. We propose, therefore, that the mosaic of S. Vitale holds special significance for the history of endocrinology, and may provide documentation for the presence of endemic goiter in Turkey at the time of the Byzantine Empire.

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