Traces of goitre in some archaeological finds

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Abstract. The authors provide an original interpretation regarding two finds from archaeological excavations in health-sanctuary areas of Lazio (Latium). They believe that the presence of goitre may be detected by reading two female terracotta ex voto suscepto sculptures dating back, respectively, to the fifth-third and second centuries BCE. The two sites are located in the Lazio region but they are distant from each other though historically known for the presence of endemic goitre.

Key words: archaeology, goitre, thyroid.

Among the various human pathologies described since ancient times, goitre, the outcome of the proliferation of various kinds of disorders of the thyroid gland, manifests itself semiologically as a swelling of the neck, which alters its volume and profile to greater or lesser degrees. Historical information, largely uncertain, fragmentary and dating back to Roman classicism, deals with this malady. It has often been mistaken, due to the alternative of the term *struma*, for other frequent pathologies of the neck, caused by diseases of the lymph nodes ("*scrofula*") but whose appearance and evolution are quite unlike that of goitre.

Aulus Cornelius Celsus, who lived during the Augustan Age (27 BCE-14 CE) mentions a surgical operation for goitre (?) and Marcus Vitruvius Pollio

(first century BCE) and Juvenal (first century CE) frequently mention "goitrous" people (*tumidum guttur*) among the population of the Alps. Pliny the Elder (first century CE), that thorough observer of phenomena and customs, said that the peasant women of the Lombard Alps used to wear collars of amber thread to avoid, or at least mask, the appearance of goitre, caused, it was presumed, by the harmful action of local water. The recommended therapy was administration of the juice of algae and fish extracts. The Andalusian -Arab Al-Zaheawi, Latinised as Abulcasis (second half of the tenth century) posited an association between goitre and cretinism and proposed thyroidectomy. *Bocium* or *Botium* was identified by the Salerno School of Medicine and was deemed as being distinct from "*scrofula*" and treated with marine sponges. In his *Practica Chirurgiae* (the Practice of Surgery) Ruggero da Parma (twelfth-thirteenth centuries) wrote that an accumulation of "phlegmatic humor" was considered as the cause and recommended a conservative therapy using fish, roots, and sea sponges rather than surgical extirpation. Even Rolando, in his *De Chirurgia* written in 1230 (Rolandina), suggested medical rather than surgical treatment. Arnaldo da Villanova (1235-1311) agreed that the disease was endemic and discovered the "*buzuti*" of the upper Garfagnana area (Tuscany), believing that the air and water were responsible for the high incidence of the ailment and preferred conservative treatment though Bruno da Longoburgo, Teodorico da Lucca and Guglielmo da Saliceto placed particular emphasis on the surgical solution. From then on, knowledge regarding goitre gradually developed and improved until modern and contemporary medical science acknowledged the fact that this endocrinological endemic is caused by nutritional deficiencies of iodine (1).

After this brief description of the early sources of scientifically uncertain information, we shall continue

to discuss the two statues mentioned at the beginning of this paper. In several sites of Etruscan-Latium (also known as Etruria), from the north of the region near Vulci (Porta Nord, Legnisina fountain, etc ...), and from the south in the Province of Rome (the Sanctuaries of Hercules in Palestrina and of Juno Sospita at Pantanacci, Lanuvium), numerous finds of interest to the study of ancient medicine have come to light. These findings are terracotta artefacts (fifth-second centuries BCE) that reproduce organs and parts of the human body presenting evident signs of substantial pathological anatomical alterations (2,3). These artefacts were votive offerings made to invoke the curative intervention of the gods where the part of the body to be cured was emphasised. Investigations of this material, dating back to the late nineteenth century, were conducted by Sambon, Regnault, Holland, and Tabanelli. As regards our particular interest in goitre, we note that Louis Sambon described a "malignant tumour of the thyroid" in a terracotta artefact from Veii (about 20 km north of Rome) of which, however, only one drawing is conserved (5). A find excavated at Troy and now kept in the Louvre and believed to belong to the first century CE, also represents an "exophthalmic goitre". We have sought the possible presence of significant cervical deformation in the *ex voto* terracottas belonging to deposits found in sacred places. The votive collection of Tessennano (Vulci), Campetti di Veio, Belvedere di Lucera (province of Foggia, Puglia), Falerii (province of Viterbo), Ara della Regina (province of Viterbo), Porta Nord in Vulci, and among finds from Pantanacci, Palestrina, Lavinio (all three in the province of Rome) were all excavated in places where historical information concerning endemic goitre has been handed down. In particular, an amazingly varied collection of medical testimonies has been retrieved to date from the Pantanacci "votive collection" (4).

To ascertain the possible representation of goitre in these votive terracottas, we applied a scrupulous systematic procedure to compare these evidently singular specimens with those belonging to standard serial production. Our aim was to see whether the finished product contained evident signs of the immediacy of intent of the artist to reproduce a bodily alteration in the model, which differed significantly from the norm of typical specimens, while taking into account obvious defects due to possible artistic licence and firing of the clay. Based on the tests carried out, we believe our interpretative hypotheses to be plausible. The numerous terracotta items reproducing heads and necks found and examined thoroughly by us, present, as a rule, traits typical of standard serial production. Only one of the many examined differed significantly in two particulars. The neck was squat and wide at the base and in its anterior area an abnormal uniform protruding swelling extended transversely, which, due to its location and development, can be probably attributed to a malfunction of the thyroid. This particular aspect of the neck is not visible in analogous objects belonging to the numerous samples studied. The work with this deformation of the neck can be dated back to between the fifth and third centuries BCE and is compatible with popular pilgrimage to the Pantanacci health sanctuary. The goitre on this artefact is quite similar to that on the Louvre terracotta (Figure 1).

Our second sample is a head from Vulci (second century BCE) where the technique employed is more sophisticated and favours a slightly oblique, elegant pose, highlighting the gentle aesthetics of the features and the classical hairstyle. The alteration of the profile of the neck is quite telling; here too, we find a uniform basicervical transverse formation in the anterior area of the neck with traits recollective of a diffuse "parenchymatous goitre". There are no signs of exophthalmos (Figure 2).

Here, too, the accurate and systematic comparison made with standard artefacts of similar origin (the sanctuary dedicated to the goddess of fertility, Demeter or Juno) made it possible to establish the exclusivity of this particular specimen.

By way of corollary to and completion of our thesis, we wish to mention some unpublished examples which suggest the presence of goitre: a bronze female portrait from the Hellenistic period (ex Kircherian) with exophthalmos; an exhibit in the museum of the Baths of Diocletian, Rome; the basalt head of Queen Theodolinda with exophthalmos in the Sforza Castle, Milan. As regards signs of exophthalmos in ancient artefacts, it would be difficult and complicated to attribute this disorder to the Emperor Constantine based on the head exhibited in the Capitoline Museum, Rome. Here we see two enormous protruding eyes

Figure 1.

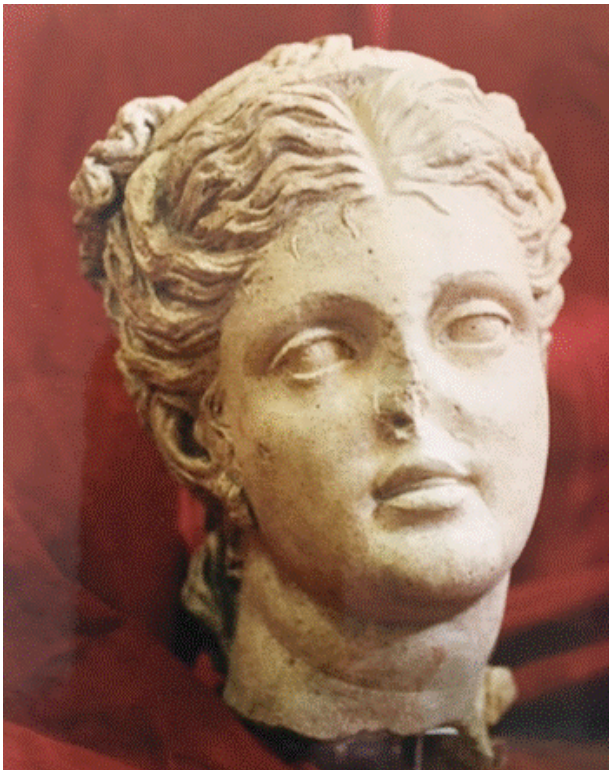

Figure 2.

that practically burst from their orbits. In our opinion, however, they served simply to underline the status and authority of the subject and degree of concentration and attention we can realistically imagine were required, given the enormous size of this gigantic work in marble.

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