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# FUNNEL CHEST IN 10–16TH CENTURY FOSSIL MATERIAL

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**Abstract:** *The authors describe two breast bones (sternum) on which the developmental deformity of funnel chest (Pectus excavatum) can be observed. Besides they make additional breast bone deformities known. The findings come from a cemetery of the 10–16th centuries, Transdanubia, Hungary.*

**Keywords:** *Funnel chest; Developmental deformity; 10–16th centuries; Hungary.*

## Introduction

Brothwell studies the deformities of the breast bone (sternum) on the basis of historical bone findings (Brothwell 1963). Among the other congenital anomalies he doesn't make the funnel chest (pectus excavatum) known. We have not found the making known of the deformity in the national and international literature which indicates the paleopathological results, too. On the basis of László Józsa's personal publication in 1995 (Department of Morphology, National Institute of Traumatology, Budapest) he could study the sternum in 15 percent of the 991 adult skeleton-remains (coming from Hungarian excavations). In this globally examined material he could diagnose 4 deformities of the breast bone (1 pectus excavatum, 2 pectus gallinaceum, 1 synchondrosis sterni). These cases have not been published yet.

The factors eliciting funnel chest have not been clarified yet. In spite of its unknown mode of inheritance, clustering within certain families has been observed (Keszler and Szabó 1996). In the pathography the deformity of the chest is presented on Figures 1 and 2 (after Seyfer et al. 1986).

## Material and Method

In autumn 1990, in the outskirts of Csepreg (Hungary, Vas County, 30 kilometres from Szombathely) a large quantity of human bone remains was found during the earthwork of a building. The excavation was directed by the archaeologist Ottó Sosztarits (Savaria Museum, Szombathely). On the basis of the enclosures found in the graves 176 graves of the churchyard (10–16 centuries) were excavated, remained in small depth and bad conditions. The burials around the church in the later period took place in the cemetery of the 10–12th centuries.

The paleodemographic researches were completed (Tóth 1996).

In this summary the deformities of the sternum examined by macroscope will be made known.

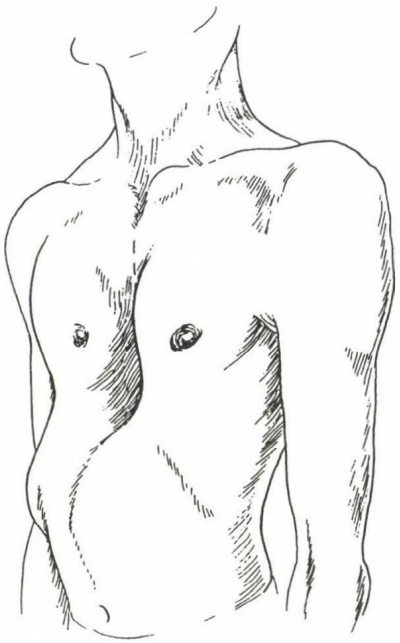

*Fig. 1:* A pectus excavatum presents the appearance of a sunken chest wall, often with inward rotation and hypoplasia of one breast (Seyfer et al. 1986).

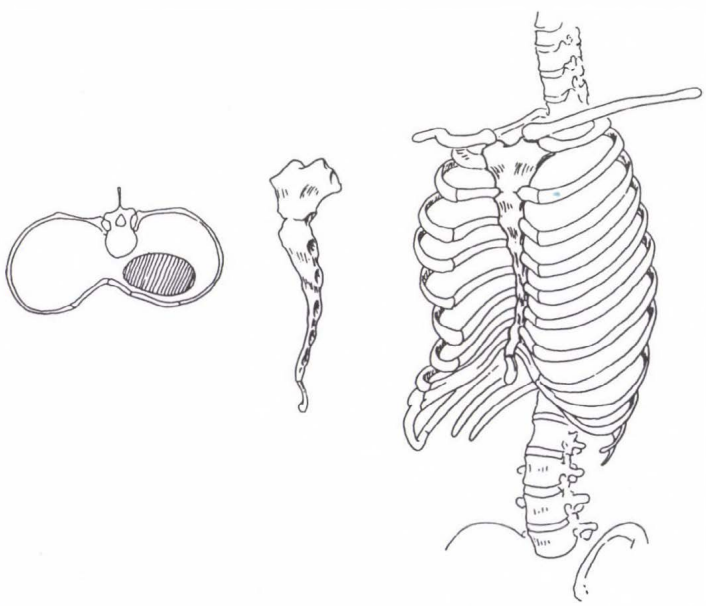

*Fig. 2:* The sternal depression and rotation along with the costal deformities are illustrated (Seyfer et al. 1986).

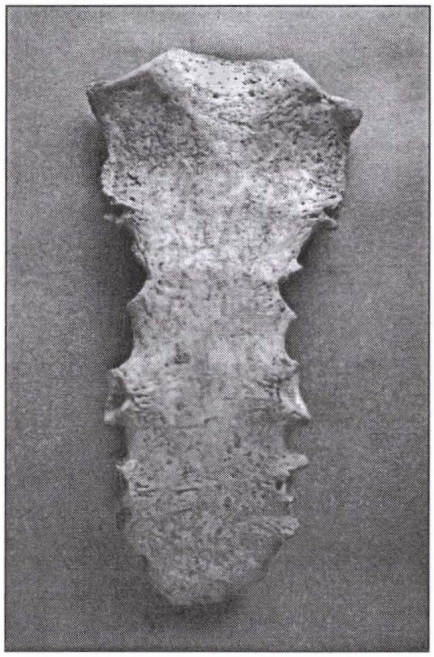

*Fig. 3:* Pectus excavatum, grave 57.

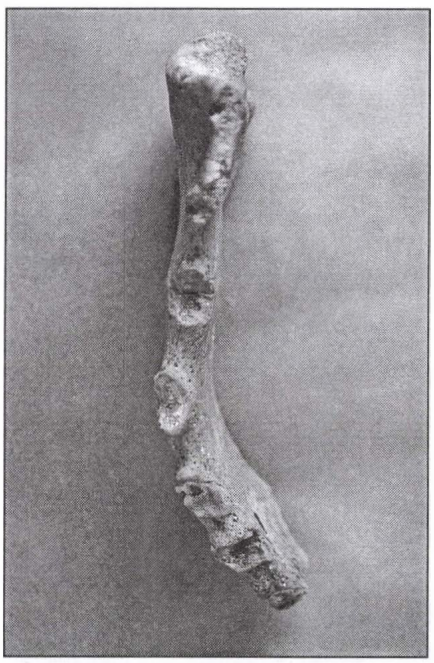

*Fig. 4:* Pectus excavatum, grave 57, lateral views.

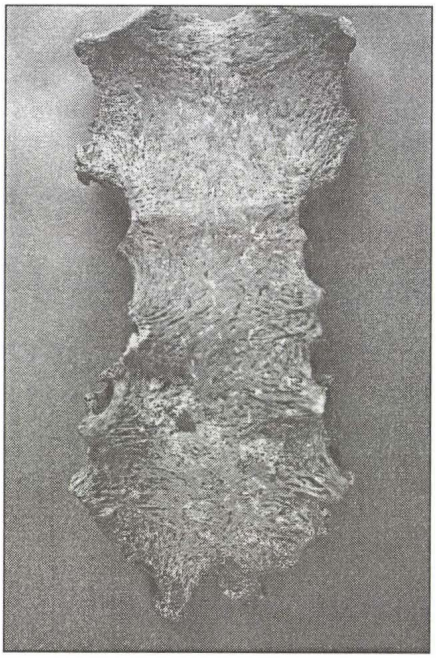

*Fig. 5:* Pectus excavatum, stray find.

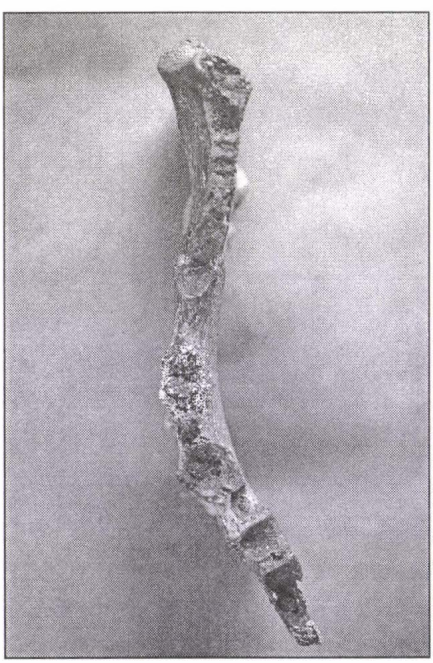

*Fig. 6:* Pectus excavatum, stray find, lateral views.

## Results and Discussion

In the examined material there are a lot of deformities of the sternum. Fenestratio sterni, which cause no clinical complaints and we can explain it by abnormal ossification, occurred accidentally in historical bone findings. In such a case a hole can be observed (about 5 mm) between the lower and the middle third of the sternum. In the adult population of Csepreg material 48 breast bones (with 5 stray find sternum) could be examined. 8 of them (16.67 %) proved to be abnormal. It means 6 fenestratio (12.5 %), one of them is stray find. The two other deformities are pectus excavatum (the 57th grave and a stray find). In this abnormal form the breast bone sinks in, on the remains a considevable curvature of the sternum can be observed. The manubrium and the corpus ossify together.

Grave No. 57 – woman, aged 37–41.

The corpus and the manubrium are ossified together, the processus xyphoideus is missing (Figures 3 and 4).

The measurements of the sternum:

the largest width of the corpus: 44 mm

the largest width of the manubrium: 63 mm

the largest length in the median sagittalis level: 124 mm.

Stray find sternum.

The corpus and the manubrium are ossified together, a processus xyphoideus is partly missing (Figures 5 and 6).

The measurements of the sternum:

the largest width of the corpus: 70 mm

the largest width of the manubrium: 73 mm

the largest length in the median sagittalis level: (without processus xyphoideus): 146 mm.

The frequent incidence of the deformities of the sternum can be explained by the marital customs of the population and the inheritance of the deformities.

## References


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