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Cephaloscopic Characterization of Acromegalic Patients

Preliminary announcement

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Acromegaly is a hormonal disorder that results from too much growth hormone (GH) in the body. The excess of GH comes from noncancerous tumors on the pituitary. The most common symptoms are abnormal growth of the hands and feet, brow and lower jaw protrude, the nasal bone enlarges, and the teeth space out.
This announcement concerns cephaloscopic characterization of investigated group till this moment, composed of 57 acromegalic patients, aged 26-77 years, 16 men and 41 women and distribution of cephaloscopic signs within.

The present results are only preliminary at early stage of the research.To terminate this study is necessary to examine more patients, anthropometric and anthroposcopic characteristics to be compared with in healthy persons. The data has to be statistically analyzed and the obtained result has to be discussed.

Key words: acromegaly, cephaloscopy.

Introduction

Acromegaly (from Greek – 'acros'-end, and 'megalos'-big) is a hormonal disorder that results from too much growth hormone (GH) in the body. Due to its low frequency and "hidden" onset it is hard to diagnose. In Bulgaria there are 400 registered cases of acromegaly and no full anthropological characterization of specific anomalies (enlargement) that occur the hands and feet as a consequence of the disease.

History

Ancients manuscripts describe legendary giants, as king Og from Basan ,who was so tall, that he was able to bake a fish in his hand only by stretching it to the sun. And the murder of Goliath by David, which are maybe the first balance-sheets of a physical disorders caused by a pituitary adenomas [7].

In 1886 Pierre Marie (1853 Paris (France) – 1940 Paris (France) used the term "acromegaly" for the first time and gave a full description of the characteristic clinical picture [3].

At this time he did not realize the role of pituitary, because the knowledge of endocrine system marked a remarkable progress not until Renaissance. Endocrinology is formed as a discipline after the appearance of experimental medicine whose "father" is Claude Bernard who proposed the theory of "internal secretion" after he had investigated cells with glandular structure [6].

Marie, however, was not the first physician to give a clear description of the clinical picture of acromegaly. Others had done this years before him, like (possibly) the Dutch surgeon and active opponent of superstition and witch-burning, Johannes Wier (1515–1588) already in 1567 , or Saucerotte in 1772 . Other physicians had also given the disease different names including Alibert in 1822 calling it "Ge'ant scrofuleux", Verga in 1864 calling it "Prosopoectasia"and Lombroso in 1869 calling it "Macrosomia". A total of more than 20 physicians had already published on disorders, which later could be reclassified as cases of acromegaly [3].

Symptoms

The name acromegaly comes from the Greek words for "extremities" and "enlargement", reflecting one of its most common symptoms – the abnormal growth of the hands and feet. Swelling of the hands and feet is often an early feature, with patients noticing a change in ring or shoe size, particularly shoe width. Gradually, bone changes alter the patient's facial features: The brow and lower jaw protrude, the nasal bone enlarges, and the teeth space out. Overgrowth of bone and cartilage often leads to arthritis. When tissue thickens, it may trap nerves, causing carpal tunnel syndrome, which results in numbness and weakness of the hands. Body organs, including the heart, may enlarge [1, 2].

Morbidity

Used data for 700 patients between 1970-2009 show the following distribution by sex and age:

– Middle age 42,3y.*

– Top age of morbidity-40-50y.*

– 63% women и 47% men (for Bulgaria)*.

In medical literature the separation by sex is 50/50 %, no data for sexual dimorphism.

In Bulgaria the different separation is assigned by endocrinologists to more rarely visit at the doctor from men's side [9].

Medico-anthropological aspects

Since acromegaly is often difficult to diagnose until later in life, recent studies are focusing on the best and most efficient way to determine a problem before major irreversible damage occurs. Unfortunately, since the disease is so rare, major symptoms generally have to occur before the afflicted is even tested for the disease.The problem is until recently, scientists have based their diagnoses almost entirely upon phenotypic characteristics and what is known about pituitary adenomata; So further medico-anthropological studies on metric and scopic characteristics of patients with acromegaly and comparison with control groups are needed to determine the level of abnormal changes occurring orofacial and somatic structures, and some anthropological signs evoking eventual onset of the disease may be discovered [5, 6].

*According to unpublished data from national clinics of endocrinology.

Anthropological research

This announcement concerns cephaloscopic characterization of investigated group till this moment, composed of 57 acromegalic patients, aged 26-77 years,16 men and 41 women.

Investigated cephaloscopic symptoms :

Macroglosia , exophtalmus, prognatism, tuffs of distal phalanx and level of expression of sulcus mentolabialis.

For anthropological investigation are used anthropological methods proposed by R. Martin–K. Saller, 1957 y., defining bite type by R. Martin–K. Saller, 1957 y. [4], and defining level of expression of sulcus mentolabialis by E. Eickstedt, 1943 y. [8].

Intermediate results

Distribution of cephaloscopic signs shows high percent of patients with Exophtalmus and macroglosia (Fig. 1).

Separation by sex does not show a sexual dimorphism (Fig. 2).

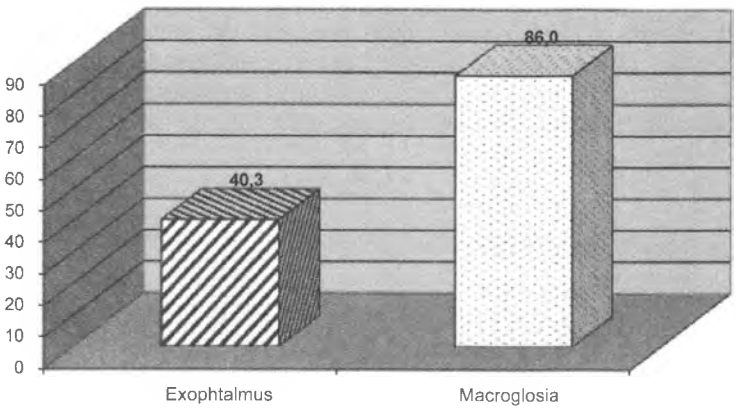

Fig. 1. Exophtalmus, macroglosia distribution

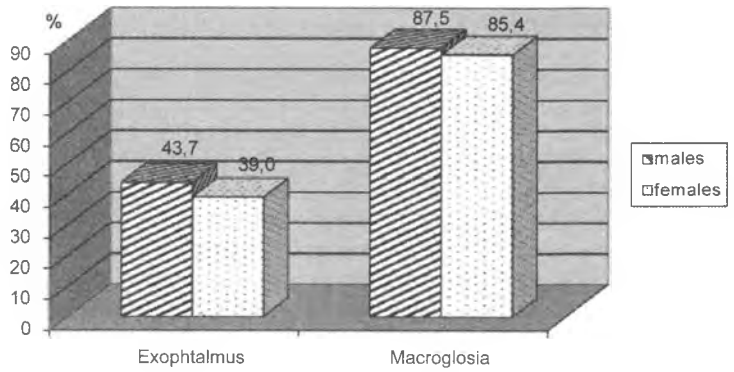

Fig. 2. Exophtalmus, macroglosia separation by sex

The research shows most recently level of expression 2 (well developed) Sulcus mentolabialis in both sexes (fig. 3).

The investigation of bite shows high percent of progenia in patients of both sexex but mostly in men (fig. 4).

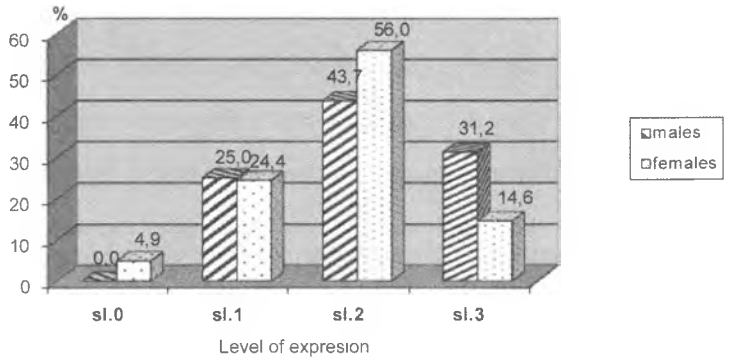

Fig. 3. Distribution of Sulcus mentolabialis by sex

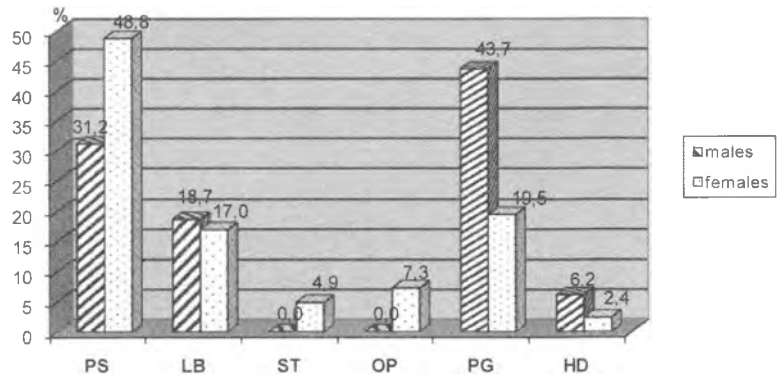

Fig. 4. Separation of bite type by sex

The present results are only preliminary at early stage of the research.To terminate this study is necessary to examine more patients, anthropometric and anthroposcopic characteristics to be compared with those ones in healthy persons. The data has to be statistically analyzed and the obtained result has to be discussed.

This study aims to present detailed anthropological characterization of acromegalic patients, which presents an interest for theoretical physical (medical) anthropology and medical practice as well.

The discovery of a metric or scopic symptoms presented in statistically significant values would give assistance to diagnose acromegaly.

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