

Holistic concept of the stomatognathic system

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Introduction

Introduction The earliest concepts of the stomatognathic system derived from studies performed by Hanau, Trappozzano and Levin, were concentrated on relationship between occlusion and temporo-mandibular joints. The later concepts, described by Held (Fig.1), Wigdorowicz-Makowerowa et al. (Fig. 2), Majewski, Fuhr and Solberg as well as by Troest, stressed the importance of additional elements, such as periodontium, neuro-muscular system and CNS. In holistic concept of stomatognathic system proposed by Panek an environment is included.

Objectives

Presentation of own concept

In proposed concept the stomatognathic system is presented as a pyramid with four apices imaging CNS and three "joints" (TMJ, periodontium joint, occlusal joint), and the edges imaging the neuro-muscular system (Fig.3).The pyramid simply reveals that harmony in the stomatognathic system is dependent on interaction of particular elements of the system. The pyramid is placed inside a sphere imaging a human body, that means the dependence of stomatognathic system on general state of health. Moreover, the sphere representing the human body is placed inside the greater sphere imaging an environment. The environment may disturb the stomatognathic system directly or indirectly or even may effect the human genom by influencing the growth process and structure of stomatognathic system in a period of organopoiesis.

In such holistic presentation the stomatognathic system may be considered as a morphological-functional unit involved in dynamic transformation continued during the whole period of life. In such circumstances a "norm" of stomatognathic system in young persons with uncompleted growth may be different from that in older subjects, where it may be additionally influenced by various processes connected with ageing and "wearing" the particular elements of the system.

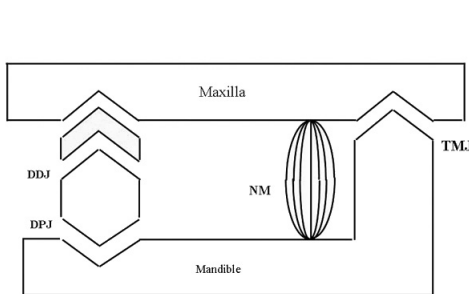


Fig.1: Stomatognathic system by Held (1963)

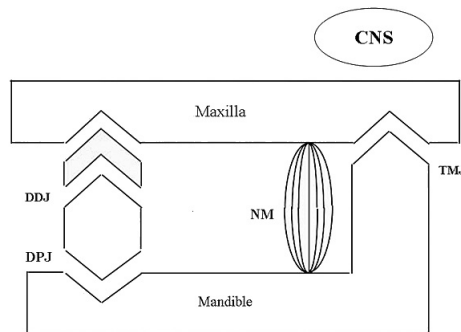


Fig.2: Stomatognathic system by Wigdorowicz-Makowerowa et al. (1970)

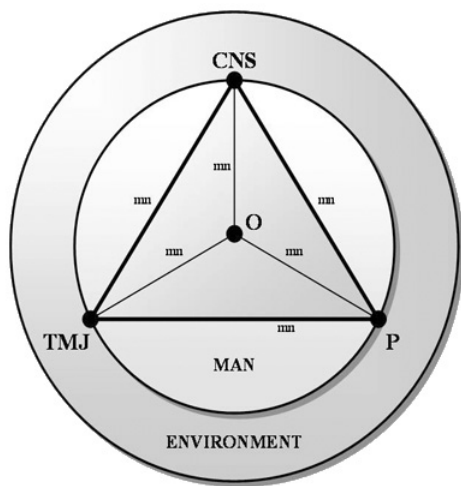


Fig.3: Stomatognathic system by Panek

Literature

1. Hanau RL: Articulation defined, analysed and formulated. JADA, 1926,1694-1709.
2. Trapozzano VR.: Laws of articulation. J Prosth Dent, 1963, 13, 1, 34-38.
3. Levin B: A reevaluation of Hanau's laws of articulation and Hanau Quint. J Prost Dent, 1978, 39,3, 254-258.
4. Held A.J: Physiologie und Physiopathologie des Kausapparates als nein dreigliedriges System betrachtet. Osterr Z Stomat, 1963, 65, 7, 242-253.
5. Wigdorowicz-Makowerowa N, Dadun-Sek A, Maslanka T, Panek H: Zaburzenia czynnościowe narządu żucia, PZWL Warszawa 1983.
6. Majewski S: Układ stomatognatyczny - współzależności morfologiczno-czynnościowe. Prot. Stom, 1996, 46, 267-273.
7. Rugh JR, Solberg WK: Psychological implications in temporomandibular pain and dysfunction, in: Zarb GH, Carlsson GE: Temporomandibular joint function and dysfunction. Munksgaard, Kopenhagen, 1979.
8. Koeck B, Troest T: Funktionsstorungen des Kauorgans. Edit. B. Koeck, Urban & Schwarzenberg, Munchen-Wien-Hamburg 1995.
9. Panek H: Historical overview of concepts of the stomatognathic system. Prot Stom, 2002, LII, 3, 129-133.
10. Panek H: Badania nad zależnościami czynnościowo-morfologicznymi narządu żucia ze szczególnym uwzględnieniem modeli funkcjonalnych zgryzu (Studies on functional-morphological relationships in the stomatognathic system with special regard to functional models of occlusion) (Rozprawa habilitacyjna). AM Wrocław 2002.

Abbreviations

CNS - Central Nervous System
 DDJ - Dens-dens joint
 DPJ - Dens-periodontium joint
 TMJ - Temporomandibular joint
 NM - Neuro-muscular system
 O - Occlusion
 P - Periodontium
 mn - neuromuscular system

This Poster was submitted by [Doc.Dr hab.n.med. Halina Panek](#).

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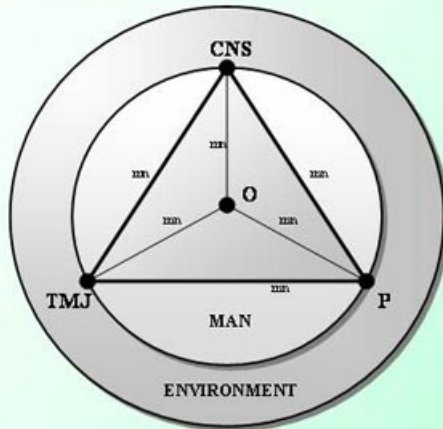
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INTRODUCTION:

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The stomatognathic system by Panek:

- a pyramid:

- with four apices imaging: Central Neural System (CNS) and three „joints“: Temporomandibular joints (TMJ), Periodontium (P), Occlusion (O),
- and the edges imaging the neuro-muscular system (mn),

- a part of human body:

- General state of health effects the health of stomatognathic system (through neurologic, vascular or lymphatic system),

- dependent on external environment of man:

- directly
- (eg. mechanical or thermal trauma etc.)
- indirectly
- (eg. stress generated by interpersonal contacts or threatens existing in nature).

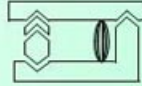
In such holistic presentation the stomatognathic system may be considered as a morphological-functional unit involved in **dynamic transformation** continued during the whole period of life.

Thus, a „norm“ of the stomatognathic system in young persons with uncompleted growth may be different from that in older subjects, where it may be additionally influenced by various processes connected with ageing or “wearing” the particular elements of the system.

References

1. Hanau R: Articulation defined, analysed and formulated. JADA, 1926,1694-1709.
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