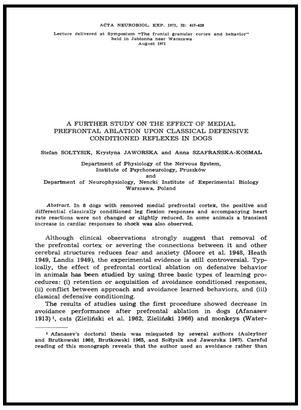
Frontal granular cortex and behavior - a symposium

- - Differential behavioral effects in frontal lobe disease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A FURTHER STUDY ON THE EFFECT OF MEDIAL PREFRONTAL ABLATION UPON CLASSICAL DEFENSIVE CONDITIONED REFLEXES IN DOGS

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Abstract. In 8 dogs with removed medial prefrontal cortex, the positive and differential classically conditioned leg flexion responses and accompanying heart rate reactions were not changed or slightly reduced. In some animals a transient increase in cardiac responses to shock was also observed.

Although clinical observations strongly suggest that removal of the prefrontal cortex or severing the connections between it and other cerebral structures reduces fear and anxiety (Moore et al. 1948, Heath 1949, Landis 1949), the experimental evidence is still controversial. Typically, the effect of prefrontal cortical ablation on defensive behavior in animals has been studied by using three basic types of learning procedures: (i) retention or acquisition of avoidance conditioned responses, (ii) conflict between approach and avoidance learned behaviors, and (iii) classical defensive conditioning.

The results of studies using the first procedure showed decrease in avoidance performance after prefrontal ablation in dogs (Afanasev 1913)[1], cats (Zieliński et al. 1962, Zieliński 1966) and monkeys (Water-

[1] Afanasev's doctoral thesis was misquoted by several authors (Auleytner and Brutkowski 1960, Brutkowski 1965, and Sołtysik and Jaworska 1967). Careful reading of this monograph reveals that the author used an avoidance rather than

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Apathy and the Functional Anatomy of the Prefrontal Cortex

Moreover, in neurological diseases such as Alzheimer and Parkinson's diseases, where apathy and depression can coexist in a given patient, they have been shown to be different in terms of the correlation with other signs and symptoms and in terms of the location of the lesions ; ; ;.

The Frontal Granular Cortex and Behavior.

It is thus very likely that apathy in depression results from an alteration of the emotional and affective processing via: i a marked sensitivity to emotionally negative situations inducing a negative bias interfering with attention resources and executive functions; or ii as the consequence of anhedonia insensitivity to pleasure , which limits the will to perform actions. The PET picture confirms diminished metabolism in frontal and temporal areas.

Frontal Granular Cortex and Behavior.

Arrows in the striatum represent electrical activation in distinct striatal territories.

Chapter 24 Social behaviour and the prefrontal cortex

This role in Pavlovian reversal is in contrast with perspectives that have proposed that the primary role of OFC is the inhibition of inappropriate behavior e. For permissions, please e-mail: journals.

Apathy and the Functional Anatomy of the Prefrontal Cortex

These areas within the basal ganglia are without doubt limbic and associative territories, which probably explains the absence of extrapyramidal motor signs in this syndrome. Cortical or subcortical lesions affecting the anterior portion of the medial wall of the dominant hemisphere may produce a motor transcortical aphasia, in which one can observe a sharp decrease in spontaneous speech contrasting with normal language abilities in repetition tasks, again indicating that the impairment mostly concerns the ability to self-generate verbal output.

Apathy and the Functional Anatomy of the Prefrontal Cortex

This apathetic syndrome is generally due to restricted and specific lesions in the basal ganglia, in most cases affecting, bilaterally, the internal portion of the pallidum ; ; ; ; ;. That the simultaneous lesions did not affect the speed of acquisition or reversal appears to be rather perplexing, because it implies that the expectancy system is not really very useful.

The frontal granular cortex and behavior. (1964 edition)

Often, the accompanying motor behavior may be bizarre; and, since the surface electroencephalogram EEG may be normal, these attacks may readily be diagnosed as hysterical pseudoseizures. Special techniques are required to examine frontal lobe function, and care finding out how the patient now behaves and how this compares with his premorbid performance.

The frontal granular cortex and behavior. (1964 edition)

GP, globus pallidus; PFC, prefrontal cortex. In everyday life this can be extremely deceptive and lead the unwary observer to consider the patient to be either unhelpful and obstructive or for example, in a medicolegal setting to be a malingerer.

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