Paul Langerhans: Physiologist, Pathologist and Biologist

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ABSTRACT

Paul Langerhans (1847-1888) studied at University of Jena and Berlin. He presented his thesis on “Contributions to the microscopic anatomy of the pancreas” and made several significant contributions to medicine such as discovery of Islets of Pancreas, description of epidermal cell layer, investigations related to the macrophage system and literature on marine vertebrates. He also had an interest in meteorology. He himself contracted tuberculosis while at Freiburg and later died of uraemia.

KEY WORDS: Langerhans; Pancreas; granular cells; Langerin; Invertebrates

INTRODUCTION

Paul Langerhans was born in Berlin on 25th July 1847. He studied medicine at the University of Jena and Berlin [1]. He made significant contribution to medicine during his undergraduate study period. He presented his thesis entitled “Contributions to the microscopic anatomy of the pancreas”. He described nine different types of cells including irregular polygonal cells which formed cell heaps (“Zellhaufen”) throughout the gland. In 1893, Languesse, a French histologist named these spots as “îlots de Langerhans”.

Contributions to Medicine [1,2,3,4,5]

a. Discovery of Islets of Pancreas which produce Insulin.

b. Described dendritic, non-pigmentary epidermal cells concerned with immune response, which he believed to be neurons.

c. Described granular cells in a layer of the epidermis (stratum granulosum) (Layer of Langerhans)

d. Contributed to investigations dealing with the macrophage system that later led to Aschoff’s theory of the reticuloendothelial system.

e. Langerin: a protein which in humans is encoded by the CD207 gene; expressed in the Birbeck granules of Langerhans cells

f. Involved in zoological studies- papers on heart of amphibian animals in Virchow’s Archives

g. Significant contribution to literature on marine invertebrates.

h. Papers on tuberculosis and leprosy.

In 1871, Rudolf Virchow facilitated his appointment at the University of Freiburg, where he studied the anatomy of sympathetic ganglion cells. However, in 1874, he contracted tuberculosis, possibly due to his work in the dissecting room. In 1875, he moved to Madeira. He wrote a handbook for travellers to the island and pursued studies in meteorology. He died of uremia on 20th July 1888. In the year after Paul Langerhans death, von Mering and Minkowski reported the appearance of diabetes after experimental pancreatectomy [6].

Short Communication
REFERENCES


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