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HISTORICAL NOTE

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Robert Bárány

Magnus Gustaf Retzius (1842–1919) initiated the anatomical studies of the semicircular apparatus. The physiologist Jean Pierre Flourens (1794–1867) in 1825 had observed that when a pigeon's horizontal semicircular canal was destroyed, it went on turning horizontally in a circle. Purkinje (1787–1869) proved that changing the head position induced vertigo in man. However, no experiments on rotating the head in animals were performed, and as Bárány noted:

Science stood still in this respect for nearly 40 years.

In 1861, Ménière (1799–1862) had observed vertigo and tinnitus in inner ear disease. However, Goltz in 1870 deduced that if the destruction of the semicircular canal apparatus caused vertigo and imbalance, then the normal function of this apparatus must be to maintain equilibrium.

In the wake of these historical landmarks, Bárány discovered the caloric reaction, which initiated the systematic investigation of the vestibular apparatus. If the reaction was positive, the canals were excitable—that is, not totally destroyed; if it was negative then they were, with few exceptions, destroyed.¹ The caloric reaction arose from the semicircular canals, where the endolymph increases in specific gravity with cooling, showing a tendency to sink, whereas with warming, the specific gravity decreases and the fluid shows a tendency to rise.

Bárány found that syringing of the ear produced nystagmus and giddiness. The explanation came to him by pure accident.

A patient whose ears he was syringing said to me: "Doctor, I only get giddy when the water is not warm enough. When I do my own ears at home and use warm enough water I never get giddy." I then called the nurse and asked her to get me warmer water for the syringe. She maintained that it was already warm enough. I replied that if the patient found it too cold we should conform to his wish. The next time she brought me very hot water in the bowl. When I syringed the patient's ear he shouted: "But Doctor, this water is much too hot and now I am giddy again." I quickly observed his eyes and noticed that the nystagmus was in an exactly opposite direction from the previous one when cold water had been used. It came to me then in a flash that obviously the temperature of the water was responsible for the nystagmus.

Bárány's work followed that of Josef Breuer (1842–1925) in Vienna, Mach, and Crum Brown, who independently in 1874 had concluded that the semicircular canal was a sensory organ for the perception of rotary motion and vertigo was the result of abnormal excitation of this sensory organ.

Bárány was not slow to extend the use of his caloric reactions in labyrinthine disorders² that included "benign positional vertigo".³ In 1921, he described this syndrome of episodic vertigo, induced by sudden movement of the head; the vertigo was abrupt in onset and lasted a few seconds. Dix and Hallpike^{4,5} in 1952 gave a more detailed account, and named the syndrome "benign paroxysmal positional vertigo".

Robert Bárány (1876–1936)

Born on 22 April 1876, in Vienna,⁶ Bárány read Medicine at Vienna, graduating in 1900.⁷ He trained in otology under Politzer (1835–1920), founder of Austrian otology. He investigated the functions of the vestibular apparatus, the cerebellum and the muscular apparatus, establishing the vestibular reactions to movement, and Bárány's pointing test. His work greatly expanded the physiology of the vestibular mechanisms. His work is reflected in the eponymous Bárány's chair, Bárány's law, Bárány's pointing test Bárány's caloric test and Bárány's theory of endolymphatic flow.

In 1914, he was awarded the Nobel Prize (Some new methods for functional testing of the vestibular apparatus and the cerebellum) while incarcerated in a prisoner-of-war camp. After the personal intervention of Prince Carl of Sweden, he was released to receive the prize in 1916. From 1917, he worked in Stockholm and died in Uppsala on 8 April 1936. He was cremated in the Stockholm crematorium.

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