John Charnley Biography

John Charnley

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Biography

A skilled and innovative orthopedic surgeon, John Charnley was born in Bury, Lancashire, England. He was an outstanding medical student at Manchester University, receiving his degree there in 1936. He served in the British army medical corps during World War II, supervising production of splints to be used for wounded soldiers suffering from bone fractures. After the war he joined the orthopedic department of the Manchester Royal Infirmary, leaving in the mid-1960s to develop the Centre for Hip Surgery at Wrightington Hospital in Lancashire. Under Charnley's direction, the Centre became the world's major, state-of-the-art center for hip replacement surgery.

In the earlier part of his career, Charnley worked out a method, called arthrodesis, of surgically fusing the surfaces of joints in patients suffering from rheumatoid arthritis. Although this made the joint immobile, it did eliminate pain in the joint. Charnley also wrote a notable book on orthopedic surgery, *The Closed Treatment of Common Fractures*, published in 1950.

Charnley's major contribution to orthopedic surgery was his development of successful methods of replacing hip joints. Earlier attempts at hip replacement had not achieved satisfactory results. Charnley realized that more than medical skill was needed to solve the problem. He made very careful, detailed studies of the engineering principals involved, and he investigated and tested new synthetic materials. He achieved initial success with low-friction Teflon to produce a smoothly moving joint. During the 1960s he had increasingly satisfactory results with high-density plastics and had perfected the procedure and materials by 1972. His studies on the control of infection after surgery, especially the use of air tents to maintain sterile conditions during the operation, also contributed to the success of his hip replacement procedure, which has become almost standard treatment for severe hip joint degeneration.

Charnley was knighted for his achievements in 1977 and became a Fellow of the Royal Society in 1975. He died suddenly in 1982.