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Alpaslan ŞENKÖYLÜ¹

¹*Doç. Dr. Orthopedics and Traumatology Specialist, Orthopedics and Traumatology Department, Gazi University Medical School, Ankara.*

Address: Alpaslan Şenköylü,
Ortopedi ve Travmatoloji
A.D., Gazi Üniversitesi, 06510
Beşevler / Ankara
Tel: 312 2025529
Fax: 312 2129008
E-mail: senkoylu@gazi.edu.tr
Received: 1st April, 2012
Accepted: 1st June, 2012

SUMMARY:

Arthur R. Hodgson was a surgeon and scientist who defined the Hong Kong procedure for the treatment of spinal tuberculosis. He contributed to the improvement of the management of spinal disorders with his surgical experience of anterior spinal fusion.

Key Words: A.R. Hodgson, Pott disease, tuberculosis spondylitis

Level of evidence: Biography, Level V

ÖZET:

Arthur R. Hodgson omurga tüberkülozunun tedavisi için "Hong Kong Ameliyatı" nı tanımlamış cerrah ve bilim adamıdır. Anterior omurga füzyonundaki deneyimiyle, diğer omurga sorunlarının tedavisinin gelişimine büyük katkı sağlamıştır.

Anahtar Kelimeler: A.R. Hodgson, Pott hastalığı, omurga tüberkülozu

Kanıt Düzeyi: Biyografi, Düzey V

INTRODUCTION:

Prof. A. R. Hodgson, known as “Hoddy”, was the surgeon who provided the modern definition of the treatment of spinal tuberculosis (Pott disease) that in the second half of the twentieth century was rife worldwide, particularly in the least economically developed countries. He transferred his vast surgical experience about the treatment of this disease to other spinal problems, and so the Hong Kong University Orthopedia and Traumatology Department became one of the most prestigious spine surgery centers in the world.

BIOGRAPHY:

Arthur R. Hodgson was born on 3 July 1915 in Montevideo, the capital of Uruguay, where his father worked. In 1939, he completed his medical education. He got his surgery major in Norfolk and Norwich Hospitals in 1943, and worked as a doctor in far-eastern military units belonging to the Royal Army until 1947. After returning from the military, he finished his orthopedic major at St. Bartholomew’s Hospital, Rochester, and he worked as chief assistant in the same clinic until 1950. Later, he directed the Orthopedia Surgery Unit in the Surgery Department of Hong Kong University between 1951 and 1961. He received the title of Professor in 1961, and supervised the establishment of the Orthopedia Department at the same university (Figure-1).

In 1975 he retired, while maintaining the presidency. After ten years in Hong Kong, Hoddy returned home to England and spent his last years with his family. Prof. Hodgson passed away on 16 November 1993 in England¹.



Figure-1. Arthur R. Hodgson



Figure-2. Arthur R. Hodgson training his assistant and explaining his examination methods.

CONTRIBUTIONS TO SPINE SURGERY:

When Prof. Hodgson came to Hong Kong in 1951, he was assigned to the Surgery Department and he established the Orthopedia Unit. During those years, tuberculosis and its involvement in the spine were quite common in Southeast Asia, as well as the rest of the world. There was active tuberculosis in 2% of the population of Hong Kong and there were relatively large amounts of patients with Pott paralysis¹ (Figure-2). The treatment used was mostly limited debridement and follow-up with bed rest in plaster.

Hodgson defined the Hong Kong procedure, a breakthrough in the treatment of Pott disease, with Stock, with whom he worked in the Surgery Department.

This surgery includes anterior radical debridement and autogenous grafting. Originally, radical debridement was defined as the removal of necrotic tissues until bleeding healthy bone is observed (Figure-3)^{2,3}.

Hoddy also revealed some basic concepts about Pott disease. One of these is Pott paralysis. Hoddy also defined the pathogenicity of this problem, which at that time had great importance⁴.

In 1966, he started a Study Group at the Medical Research Council (MRC) in London, conducting the first prospective study about spinal tuberculosis treatment. Accordingly, Hong Kong became the center that compared the results of basic and radical debridement. Other countries, including Zimbabwe, South

Africa and Korea, also reported the results of basic debridement, bed rest and ambulant treatment (with/without a plaster jacket)⁵. The MRC Study Group discussed the treatments applied and published a report by meeting in certain years. As a result of these comparisons, the technique of anterior radical debridement and structural grafting that was defined in Hong Kong was accepted as a worldwide gold standard⁶.

The experience of spinal tuberculosis that began in the 1950s increased in subsequent years, and provided important contributions to the development of surgical techniques for other spinal pathologies. The most striking of these was the development of an anterior method for scoliosis surgical treatment by Anthony F. Dwyer. Dwyer shared his idea with Hodgson and he worked on the design and application of a screw-cable system by visiting Hong Kong⁷. This system was used for long periods, until it was later modified by Zielke.

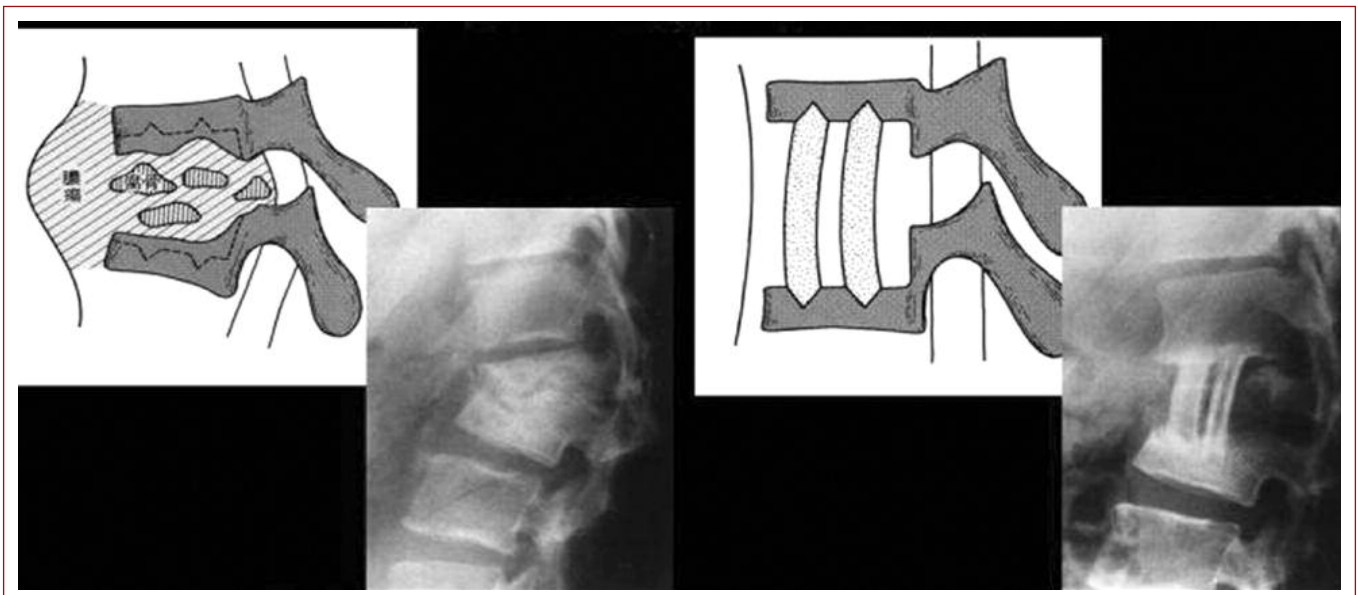


Figure-3. Hong Kong method introduced by Arthur R. Hodgson (X-rays belonging to one of his patients).

Another important discovery was the halo-pelvic device, where biomechanical principles were combined with experience gained from many spinal tuberculosis surgeries.

This device was an effective method for spine fixation and patient ambulation after spine osteotomies, at a time when pedicular screw systems were not yet developed.

John O'Brien, who subsequently established the Oswestry index, made great contributions to the development of this system. O'Brien worked with Professor Edward Yau, who was the head of the department after Hodgson. Yau developed the techniques of circumferential osteotomy and gradual correction approaches with a halo-pelvic device in tuberculosis kyphosis (Figure-4,5). These techniques benefit from the viscoelastic properties of the spine, and therefore provide satisfactory improvement and prevent neurological complications by gradually restoring deformities in the long term^{8,9}.

CONCLUSION:

Hoddy was described as an extremely good surgeon and, personally, as a good man by those who knew him well¹⁰. He tried to use his surgical experience in one area to approach other different pathologies, and shared anterior approaches to the cervical, thoracic and lumbar spine with his colleagues in his papers in detail^{11,12}. The international spinal fellowship system that was founded and started in the department by him 50 years ago still continues, and contributes to the education of surgeons worldwide.

ACKNOWLEDGMENT:

I thank Prof. Keith Luk, the head of the Orthopedia and Traumatology Department of Hong Kong University, for his support in terms of photographs and written documents.

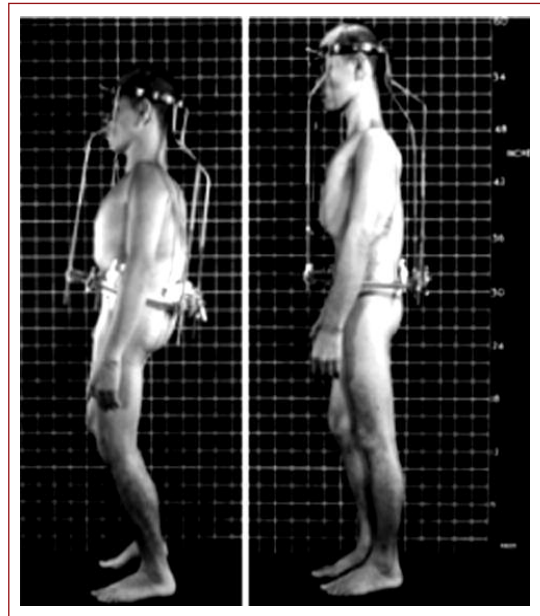


Figure-4. A Pott disease patient treated with a halo-pelvic device during and after osteotomy

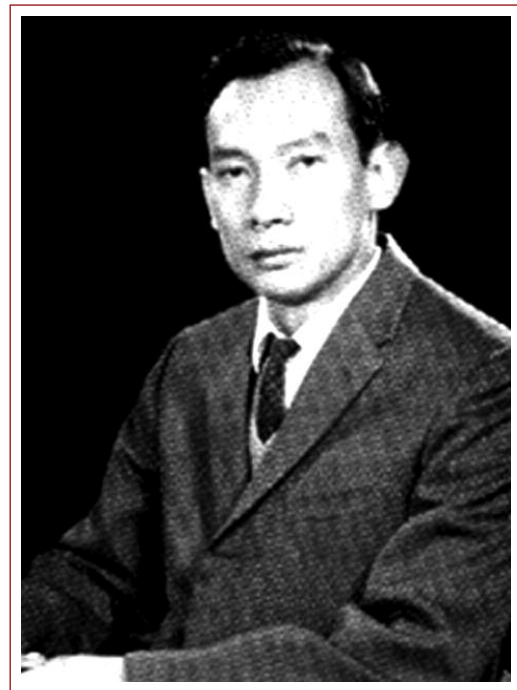


Figure-5. Hodgson's student and close friend, Prof. Yau

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