Clin Orthop Relat Res (2010) 468:3–5
DOI 10.1007/s11999-009-1121-2

SYMPOSIUM: PAPERS PRESENTED AT THE ANNUAL MEETINGS OF THE KNEE SOCIETY

Biographical Sketch

Nathaniel Allison, 1876–1932

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Published online: 21 October 2009

Abstract This biographical sketch of Nathaniel Allison corresponds to the historic text, The Classic: Symposium on Arthroplasty: Arthroplasty: Experimental and Clinical Methods, available at DOI 10.1007/s11999-009-1120-3.

Nathaniel Allison was born in 1876 in Webster, Missouri, the son of James W. and Addie Schultz Allison. He attended Smith Academy in St Louis. He had a lifelong interest in the military and briefly attended West Point before entering Harvard College and then Harvard Medical School, from which he graduated in 1901. He interned and had surgical training at the Boston Children's Hospital [8]. He joined the faculty at Washington University, St. Louis in 1906 and in 1912 succeeded Dr. Aaron Steele (the first Chair of the department beginning in 1899) as Chair of orthopaedic surgery (Figs. 1, 2). From 1920–1923 Dr. Allison also served as Dean of the Washington University School of Medicine. He left Washington University in 1924 to become Professor of Orthopaedic Surgery at Harvard. In 1929 he became the first Professor of Orthopaedic Surgery at the School of Medicine at the University of Chicago. He continued in that post until his death in 1932.

Given his interest in the military, Dr. Allison promptly volunteered for service in the US Army on April 22, 1917 and sailed for France on May 19, 1917 with the rank of Captain in the Medical Corps [7]. He joined the American Expeditionary Force and was promoted to Major later that year, then to Lt Col in May, 1918 and subsequently to Colonel in October. He served in France until March 1, 1919 as Director Orthopaedic Surgery and Senior Consultant Orthopaedic Surgery. After the armistice he served as Advisor in Orthopaedic Surgery to the Chief Surgeon. He received the AEF Distinguished Service Medal with the following citation: "Awarded by the Commanding General of the AEF Nathaniel Allison Col USA for especial meritorious service. As Chief of the Orthopedic work in the zone of army he carried out in a most conscientious and painstaking Manner the splinting of the wounded resulting in the saving of many lives and greatly reducing the suffering of our wounded [7]." He was discharged from the service of the US Army in June, 1919, but in September was recalled to the service rank of Colonel and sent to Rome, Italy as a representative of the Medical Department of the Army to the International Conference on the after care of the war wounded. He was again discharged from the service in November, 1919, and returned to his post at Washington University (Fig. 3).

Dr. Allison was active in many organizations, including the Medical History Club of St. Louis. He served as co-editor of the American Journal of Orthopaedic Surgery (predecessor of *The Journal of Bone and Joint Surgery*) from 1917 to 1919. He was elected President of the American Orthopaedic Association in 1922. He wrote many papers published in the best journals: JAMA, the Archives of Surgery, Surgery, Gynecology, and Obstetrics; The Journal of Bone and Joint Surgery alone lists 23 of his articles published between 1905 and 1928. He published at least three books [2, 4, 5]. He had a particular interest in orthopaedic training and in 1921 wrote an article, "The Teaching of Orthopaedic Surgery" [1] in which he outlined certain principles of post-graduate training. At that time postgraduate training was based primarily on apprenticeships without any formal standardized structure. Allison

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Fig. 1 Nathaniel Allison, MD is shown ca 1911. Reprinted with permission of the Becker Medical Library, Washington University School of Medicine.

Fig. 2 Nathaniel Allison is shown in the operating room, ca 1911. Reprinted with permission of the Becker Medical Library, Washington University School of Medicine.

Fig. 3 Dr. Allison is shown with the Washington University surgical staff of 1920. Front row (seated) left to right: Vilray Papin Blair (plastic surgery), R. Walter Mills, Evarts A. Graham (chief of surgery), Nathaniel Allison, Ernest Sachs (first professor of neurosurgery). Second row left to right: James A. Brown, Sherwood Moore (first head of Mallinckrodt Institute of Radiology), John R. Caulk, Barney Brooks, Harry William Bond, B.Y. Alvis, Meyer Wiener, Archer O'Reilly. Back row left to right: Francis H. Straus, Glover H. Copher, George W. Belcher, Earl Padgett, Bransford Adelsberger, Edwin P. Lehman. Reprinted with permission of the Becker Medical Library, Washington University School of Medicine.

mentioned the efforts of the Committee on Education of the AMA to standardize medical education. These included (for orthopaedic surgery):

> "1. Standard medical school course, Class A school, four years.
> 2. Surgical internship at least one year.
> 3. Graduate course, one year as interne on service devoted entirely to orthopaedic surgery.
> 4. Six months in allied studies, physio-therapy, shop work, and schools for cripples."

These rules, of course, were not standardized across the United States for some time to come and, in fact, for some decades for full standardization, but Allison's thorough consideration of many aspects illustrates his vision.

Many of our readers trained in the total arthroplasty era (beginning in the late 1960s in the United States), and most will not be familiar with the dilemma of earlier surgeons in dealing with painful and stiff joints. Allison beautifully explored all aspects of the issues in the article we reproduce this month, "Arthroplasty: Experimental and Clinical Methods" [3]. The concept of arthroplasty is generally dated to 1827 when John Rhea Barton osteotomized the proximal femur of a patient with a hip fused in a poor position, then intentionally moved the leg postoperatively to create a stable pseudarthrosis [6]. However, Ollier introduced the concept of interposing soft tissue between mobilized fused or stiff joints in about 1885 [6]. Subsequently many surgeons had used a variety of absorbable (eg, fascia lata, chromacized pig bladder) or nonabsorbable (eg, silk, plates of magnesium, silver, gutta percha—a form of latex) materials for interposition arthroplasty. Allison reviewed the options of treating the stiff joint:

> 1. Repeated forcible manipulation of the stiff joint.
> 2. Production of a pseudarthrosis in the region of the ankylosed joint.
> 3. Resection of the joint.
> 4. Arthrolysis followed by simple closure of the joint.
> 5. Arthrolysis followed by placing the ends of the bones in a position of dislocation for a short period and then replacing them in the normal position.
> 6. Complete excision of the joint, followed by transplantation of the entire joint from another individual.
> 7. Arthrolysis with the interposition of various substances between the joint surfaces.

Dr. Allison was a realist, if a visionary. After carefully reviewing the literature, he concluded:

> "…it is to be emphasized that the results of all known operative methods for the relief of joint ankylosis are at best most often unsatisfactory. In general the hip, elbow and jaw results are fairly good. The results of

> arthroplasties on the knee joint are the least satisfactory. Every patient should, previous to operation, be clearly and frankly as possible told of the impossibility of restoration of complete normal joint function, and that the most he can hope for is improvement after a long and tedious treatment."

He died at a relatively young age (I have not been able to ascertain the cause), but one wonders how much more he might have accomplished had he lived longer. As it was, he made substantial contributions to orthopaedic surgery during its seminal years in the early 1900s.

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