

Hip Arthroscopy

A Brief History



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KEYWORDS

- Hip arthroscopy • History of hip arthroscopy • Evolution of hip arthroscopy
- Arthroscopy • Sports medicine

KEY POINTS

- Hip arthroscopy was first described by Michael S. Burman in 1931.
- The procedure was revisited in the mid-1970s, continues to become more popular, and now is one of the fastest growing areas within orthopedic surgery.
- Instrumentation has improved over the past 2 decades to better access the hip and treat intra-articular abnormalities.
- Indications continue to expand from treating hip abnormality to treating the underlying cause, and reconstructive procedures are being developed for damage that is not repairable.
- New complications are being encountered as utilization expands and more complex procedures performed.

INTRODUCTION AND KEY HISTORICAL DEVELOPMENTS

Hip arthroscopy was first described more than 80 years ago when Michael S. Burman performed the first recorded hip arthroscopy attempts on cadavers in 1931.¹ Hip arthroscopy was effectively deemed a futile procedure from the start by Burman, going so far as to say it is “manifestly impossible to insert a needle between the head of the femur and the acetabulum.” However, although Burman had difficulty accessing the central compartment, he was able to visualize the peripheral compartment well.

Despite his ominous declaration, Burman made many important contributions to hip arthroscopy. First, he was the first to describe the paratrochanteric portal,

Disclosure Statement: Nothing to disclose. No commercial or financial conflicts of interest or any funding sources (A. Kandil). Nothing to disclose related to this article. Fellowship support: Össur, Breg, ConMed Linvatec, Smith and Nephew (M.R. Safran).

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Clin Sports Med 35 (2016) 321–329

<http://dx.doi.org/10.1016/j.csm.2016.02.001>

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which is close in proximity to the commonly used anterolateral portal today. He states, “The anterior para-trochanteric puncture is undoubtedly the best and is made slightly anterior to the greater trochanter along the course of the neck of the femur.”

Second, he described the necessity of using long instruments to adequately traverse the generous soft tissue envelope surrounding the hip, an important feature in modern hip arthroscopy. He states, “A special long trocar [sic] with a correspondingly long telescope should thus be used for the hip joint.” Current hip arthroscopy trays include extralong scopes as well as shortened bridge connectors to the camera that allows for a functionally greater working length while using regular knee arthroscopy scope lens.

Finally, although he used joint fluid distension and a 4-mm arthroscope (Fig. 1), there was no joint distraction, and visualization was limited. As a result, he could only visualize peripheral compartment structures that are easily viewed without traction, such as the femoral neck and head, but not the acetabular fossa, intra-articular labrum, and articular cartilage or ligamentum teres (Fig. 2). This finding later demonstrated the importance of joint distraction as a key component in obtaining adequate joint visualization, particularly of the central compartment.

In 1939, Kenji Takagi² reported the first clinical application of arthroscopy in the hip. He reported using hip arthroscopy as an adjunct tool in the treatment of a small 4-patient series of patients, including 2 Charcot joints, one case of tuberculous arthritis, and one case of septic arthritis.

Following this report by Takagi in Japan, there was no significant contribution to hip arthroscopy in the literature until the mid-1970s. In 1977, Richard Gross³ reported the application of hip arthroscopy to pediatric disorders, including Legg-Calve-Perthes disease, slipped capital femoral epiphysis, congenital dislocation, and other pediatric conditions. Following this, the literature on hip arthroscopy expanded significantly, and numerous case series were being published in various journals. James Glick and Thomas Sampson contributed immensely to the literature in the 1980s and 1990s, discussing anatomy, indications, portal placement, and most notably, lateral positioning for hip arthroscopy.

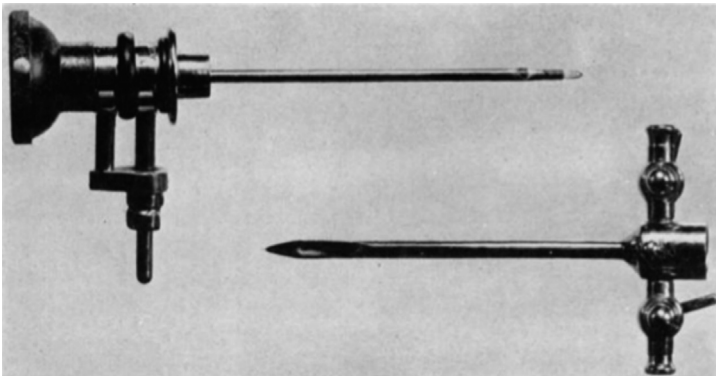


Fig. 1. Arthroscope and trocar used for joint arthroscopy in the landmark article by Michael S. Burman. The arthroscope divides into its 2 component parts: the upper is the telescope and the lower its sheath or trocar. (The illustration shows the arthroscope three-fourths actual size.) (From Burman M. Arthroscopy or the direct visualization of joints: an experimental cadaver study. *J Bone Joint Surg* 1931;13(4):671.)

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