

Report of Breakout Session: Strategies to Improve Hip Preservation Training

Christopher L. Peters MD, Paul E. Beaulé MD,
Martin Beck MD, Moritz Tannast MD,
William Jiranek MD, Rafael J. Sierra MD

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Where Are We Now?

Although it seems logical that basic principles of hip preservation surgery such as understanding the pathomorphological mechanisms underlying disease states such as acetabular dysplasia and femoroacetabular impingement (FAI) should be part of the adult orthopaedic training curriculum, in reality, there is great variability in teaching these

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C. L. Peters (✉)
Department of Orthopaedics, University of Utah,
50 North Medical Drive, Room 3B165,
Salt Lake City, UT 84132, USA
e-mail: chris.peters@hsc.utah.edu

P. E. Beaulé
The Ottawa Hospital, University of Ottawa, Ottawa, ON, Canada

M. Tannast
Department of Orthopaedic Surgery,
University of Bern, Inselspital, Bern, Switzerland

M. Beck
Department of Orthopaedics, Luzerner
Kantonsspital, Luzern, Switzerland

W. Jiranek
Virginia Commonwealth University, Charlottesville, VA, USA

R. J. Sierra
Mayo Clinic, Rochester, MN, USA

concepts in international training programs. Pediatric-based disease processes are widely taught as part of pediatric orthopaedic curricula, but diagnosis and management of young adult hip deformities frequently are not formally covered in sports medicine or adult reconstruction curricula. Also, different philosophies internationally such as a pathology-based approach in western Europe (hip or knee surgeon-specific) and treatment-based approach (joint arthroplasty versus arthroscopy) in the United States create difficulties in standardizing educational programs. The exposure in residency to these pathologies is limited except in isolated programs in which surgical preservation of the hip is performed and many residents finish their program without ever seeing or participating in joint-preserving procedures. For the most part, residency allows the resident a glimpse of the pathology and may heighten the graduating orthopaedic surgeon to its presence but does not prepare the resident to accurately diagnose or surgically treat these cases.

Contemporary fellowship training in hip preservation surgery is variable worldwide. Currently adult reconstructive fellowships may or may not include one or two rotations dedicated to joint preservation, whereas sports medicine fellowships may or may not include one or two rotations in hip arthroscopy. In the United States, we are aware of only two hip preservation fellowships offered for a 1-year duration. Internationally, hip preservation-specific fellowship training is also limited to perhaps two programs with variable exposure to currently recognized surgical techniques for FAI and hip dysplasia.

Therefore, multiple models for fellowship training exist including fellowships primarily emphasizing open surgical techniques and others emphasizing arthroscopic methods to treat primarily FAI. There is little agreement on what a comprehensive curriculum of educational material at the fellow level would look like. Furthermore, there is little

agreement on the optimum length of training necessary to master techniques such as periacetabular osteotomy and basic hip arthroscopic techniques. The time dedicated within these fellowships to train the fellow in the diagnosis and surgical decision-making for either open or arthroscopic is limited and may not be sufficient to allow the fellow to return to unrestricted practice in joint preservation.

Current successful hip preservation surgeons have used a variety of methods to achieve refinement of the surgical technique and expansion of the knowledge base during early years of practice including self-driven surgeon visitation, cadaver work, and collaboration with more experienced surgeons. There is, however, a lack of formal mechanisms for mentorship, surgeon visitation, and formal training/cadaver courses available for those early practitioners who wish to incorporate such surgical techniques into their practice. However, recently the AAOS CME committee has formalized plans for the first AAOS surgical skills course focusing on hip preservation (July 2012, Rosemont, IL, USA).

A final piece of the training puzzle relates to lack of a formal society encompassing the area of hip preservation surgery. Whereas other subspecialties have successfully used specialty organizations or societies to create forums for education and surgical training, current practice related to the hip has been sporadic. The International Society for Hip Arthroscopy was created in 2007 and has successfully held large meetings focused primarily on arthroscopic surgical hip techniques. Courses emphasizing open surgical techniques have been limited largely to Berne, Switzerland, and occasionally in the United States under the Berne influence.

Directly related to the challenges in training for hip preservation is the relative paucity of data supporting the durability, functional restoration, and possibly prevention or delay of hip osteoarthritis provided by many of the operative interventions currently used for nonarthroplasty surgery of the hip. Long-term, ideally prospective, studies are needed to support current thought processes and further substantiate the effectiveness and value of current hip preservation techniques. Supportive evidence would strengthen the argument for inclusion of these concepts into training curricula. One current multicenter research body (ANCHOR [Academic Network of Conservational Hip Outcomes Research]) has successfully begun to provide data related to outcome and complication rates for hip preservation surgery.

Where Do We Need to Go?

There is need for consensus-building between the various groups that may encounter the early intervention hip patient. This would include surgeons specializing in sports

injuries and those specializing in arthritis surgery. One logical place to start would be a meeting between the International Society for Hip Arthroscopy representatives and representatives from the International Hip Society to see if there could be common ground in diagnostic and treatment areas. If there is agreement in diagnostic and treatment categories, it will facilitate the development of educational pathways.

A more structured educational curriculum emphasizing the principles of the pathomorphologic mechanisms underlying common young adult hip problems such as acetabular dysplasia, FAI, and the sequelae of pediatric orthopaedic disease processes such as Legg-Calvé Perthes disease and slipped capital femoral epiphysis should be part of all orthopaedic training curricula. These requirements would enhance current models and form a basic foundation for surgical training emphasis for those interested in pursuing fellowship training but would also prepare the general orthopaedic surgeon in the diagnosis and nonoperative management of these common orthopaedic problems. The role of the junior resident should be to understand the disease process and to learn the diagnosis and surgical decision-making for these patients, whereas senior-level resident training should be more focused on the surgical exposure and very basic surgical techniques rather than mastery of open and arthroscopic surgical techniques.

After mastery of basic disease etiologic principles, fellowship training could then be focused on beginning mastery of the operative techniques necessary to treat a wide spectrum of hip disease states amenable to hip preservation. Ideally exposure to both open and arthroscopic surgical techniques would occur during the fellowship year and at conclusion, the early practitioner would begin to feel comfortable with these treatment methodologies, especially if further mentoring or training opportunities, as described previously, were available. It has been common practice for many years for Professor Ganz to travel to many cities as an invited surgeon to help with cases for those he has trained. This type of mentorship program has been followed by many other surgeons well versed in periacetabular osteotomy.

Formation of an international society or forum dedicated to understanding the basic etiological and surgical principles underlying the field of hip preservation would fill an existing void from a number of standpoints. First, such a forum could facilitate the evolutionary education process of the early practitioner as noted previously and provide for networking, potential mentorship, and surgeon visitation opportunities, which may be critical to the developing hip surgeon immediately after fellowship. Second, this type of organization could help set future standards for educational curricula, fellowship training, and generally guide future development in the field. In the area of hip outcomes

research, support for and expansion of organizations such as the ANCHOR group would likely facilitate understanding of the effectiveness of current operative techniques and modification of the disease process.

How Do We Get There?

With regard to resident/registrar education specific to the field of hip preservation, the following recommendations may be prudent at this time: (1) emphasize to residency/registrar educational directors that hip preservation-related pathology and treatment options should be part of a post-graduate orthopaedic core curriculum; (2) emphasize to residents/registrars an understanding of the basic disease processes underlying hip dysplasia, FAI, and sequelae of pediatric hip pathology; (3) expect a basic understanding of the nonoperative and operative treatment options for these conditions, although not necessarily a mastery of surgical techniques for hip preservation; (4) engage residency review committees across the world to discuss fellowship and residency training requirements with respect to hip preservation; (5) engage the national certifying boards or committees of orthopaedic surgery to discuss what elements of hip preservation should be taught and when to residents and fellows; and (6) engage current well-structured organizations such as the International Hip Society and the International Society for Hip Arthroscopy to explore willingness to provide educational curriculum guidelines for competence in hip preservation diagnosis and treatment. Ideally current members of these organizations with hip preservation interest could drive this process.

At the fellowship level, the ideal experience would offer training in both open and arthroscopic operative techniques for hip preservation. Ideally faculty for these fellowship programs would be high-volume surgeons with practices at least partially devoted to preservation of the native hip. This may require creation of new fellowship training models with potentially multiple faculty members with differing areas of expertise contributing to the fellowship. There currently exists differing models of care including both single-surgeon and multiple-surgeon fellowship programs and perhaps further formal discussion among fellowship directors could refine the ideal training experience. Specific examples of surgical competence at the conclusion of the fellowship year might include the following: (1) surgical hip dislocation with and without extended retinacular flap; (2) begin to master basic arthroscopic techniques; and (3) for femoral and periacetabular osteotomy, master surgical indications and planning as well as the basic surgical approach with further mentorship for refinement of operative technique.

Finally, the need for an international governing body related to the field of hip preservation is quite evident given the many challenges noted previously. Societies emphasizing a single surgical technique for hip preservation may not be ideally structured to create resident educational curricula, provide guidelines for fellowship training programs, and establish standards of care metrics going forward. Perhaps existing organizations such as the International Hip Society may be the right body to fulfill these multiple mandates. Alternatively, modification of other existing societies or creation of a new body specific to the field of hip preservation surgery may offer an opportunity to guide the educational and comprehensive training needs of the field.