

Editorial Commentary: Positive Outcomes and High Rate of Return to Sport After Hip Arthroscopy With Concomitant Periacetabular Osteotomy in Athletes: Don't Fear the Periacetabular Osteotomy



Mahad M. Hassan, M.D., and Yi-Meng Yen, M.D., Ph.D.

Abstract: The periacetabular osteotomy (PAO) has traditionally been viewed as a large operation with significant morbidity. However, as the technique has been refined over the years and more studies have shown its efficacy, it has gained more acceptance. Multiple studies have shown a high return-to-sport rate in athletes undergoing a PAO. As the literature has shown a high rate of concomitant intra-articular pathology, a combination of hip arthroscopy and PAO has been increasingly used. We believe the PAO—with a return-to-sport rate comparable to hip arthroscopy alone—will continue to gain acceptance. The PAO is here to stay and should not be feared.

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Acetabular dysplasia has seen increasing interest in the literature over the past decade. The Bernese periacetabular osteotomy (PAO) was described by Ganz et al.¹ in the 1980s to reorient the dysplastic acetabulum to improve anterior acetabular coverage. Although there is much literature on the PAO that has shown that surgery can decrease pain and improve function in a variety of patients with dysplasia, the PAO is still thought of by many arthroscopists as the “surgery that shall not be named.” It has been viewed as a debilitating operation with significant morbidity and a prolonged recovery time.

However, as surgical expertise with the Bernese technique has been refined, complications and recovery times have fallen and patients are able to return to high levels of activity. In “Athletes Undergoing Concomitant Hip Arthroscopy and Periacetabular Osteotomy Demonstrate Greater Than 80% Return-to-Sport Rate at 2-Year Minimum Follow-Up,” Jimenez,

Lee, Owens, Maldonado, LaReau, and Domb² add to the growing literature that the participation in competitive athletics is possible after such a “large” operation. We commend the authors on a well-performed, important study with the vast majority of patients achieving the minimal clinically important difference and returning to sports at a high level. For the sake of comparison with prior studies on PAO alone in active patients returning to sports, Okoroafor et al.³ reported a 70% return-to-play rate at a mean of 5 years and Heyworth et al.⁴ reported an 80% rate at a mean of 3 years. In the current study, the return-to-play rate at a minimum of 2 years was 82%, which was slightly higher than in previous studies and might be reflected by the addition of hip arthroscopy to address labral and cam pathology.

We do believe, as the authors of this study have stated, that there is a high incidence of coexisting intra-articular pathology in hip dysplasia.⁵ Although it is possible to address intra-articular pathology at the time of the PAO, hip arthroscopy offers an unparalleled view of joint pathology. As studies highlighting this were published in the early to mid 2010s, concurrent hip arthroscopy with PAO has increased in frequency. However, despite it being intuitively obvious that treatment of both the dysplasia and intra-articular pathology should be performed, there has not been a study that has clearly shown that this is necessary.

University of Minnesota (M.M.H.) and Harvard Medical School (Y-M.Y.).

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Indeed, a recent study did not show any difference in the treatment (either open or arthroscopic) of labral tears in patients with dysplasia undergoing PAO.⁶ It is unclear in this study what the actual indications for the treatment of intra-articular disease were. Could the same results be obtained either without any intra-articular treatment or with an arthrotomy during the PAO? These findings raise the need for high-level long-term studies to assess the efficacy of this additional treatment. This study was performed in patients treated by very experienced surgeons with significant expertise in both arthroscopy and PAO surgical procedures, but the true value of the arthroscopy remains to be determined.

In the study by Jimenez et al.,² the diagnostic workup for patients with dysplasia included a supine anteroposterior pelvis radiograph to measure the lateral center-edge angle and signs of acetabular retroversion. Although they did include a standing anteroposterior pelvis radiograph, it is unclear whether this was used for analysis. This is particularly important when evaluating signs of retroversion as a supine film can falsely convey retroversion.⁷ It would be important in future studies to include 3-dimensional coverage data using a computed tomography scan to develop an even more reliable technique of assessing acetabular coverage and depth, as well as include versional data of the femur.

It is also mentioned in the study by Jimenez et al.² that the mean alpha angle of the athletes undergoing combined hip arthroscopy and PAO was 55.2°, which is at the threshold of a cam deformity, yet 89.7% of patients underwent femoroplasty. It was mentioned that the reasons for this were multifactorial in nature but included an alpha angle greater than or equal to 60° and intraoperative impingement assessment. Was there a tendency for the authors to slightly overcorrect on the femur during the arthroscopic phase of the operation in anticipation of increasing anterior coverage? Were there any patients in whom intraoperative assessment of range of motion after the PAO necessitated revision of the femoroplasty?

In conclusion, it is our hope that more studies are conducted on combined hip arthroscopy and PAO especially for the indication of hip instability. It is

intriguing that the mean return-to-sport timing for a hip arthroscopy, as evidenced in a recent systematic review, is approximately 7 months,⁸ which is similar to the return-to-sport timing in the current study for combined hip arthroscopy and PAO! As more studies like this are published that show a reasonable and predictable return to play for patients undergoing PAO with or without arthroscopy, we believe the stigma of the PAO being a large and potentially morbid operation will gradually subside. We believe that the PAO is here to stay and not to be feared.

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