

# Establishing a Collaborative Hip Preservation Unit-challenges And Analysis over One Year

Sandeep Patwardhan<sup>1</sup>, Tarang Khairnar<sup>1</sup>, Sumit Bhandari<sup>1</sup>, Parag Sancheti<sup>1</sup>, Ashok Shyam<sup>1</sup>

## Abstract

**Background:** Hip preservation surgery is a relatively new concept and appropriate expertise is lacking. Availability of visiting hip preservation surgeon from abroad had helped us to establish Hip preservation unit at our centre.

**Methods:** Our team consisted of primary hip preservation surgeon, adult hip replacement surgeon, arthroscopist interested in hip arthroscopy and pediatric orthopedic surgeon. Various patients with adult and pediatric hip disorders were referred to hip preservation unit. An account of all patients seen in OPD and all operative procedures was carried out, outcomes were analyzed as per patient satisfaction level as well as the surgeons. Logistic satisfaction outcomes were judged with respect to communication with patients consenting for surgery, availability of specialized equipment, post op rehabilitation and arrangement of followup for operated patients. Patients in OPD were informed through website or referred by other orthopedic surgeon.

**Result:** 86 patients were screened in opd and 15 were operated in a time span of 1 year. All patients had significant pain reduction and improved rom post surgery except 1.

**Conclusion:** It created learning opportunities for fellows as well as post graduate students and this study will help in establishing a similar centre at other hospitals.

**Key Words:** Hip Preservation Surgeries, Hip Preservation Unit India, Hip Arthroscopy, Adolescent Hips

## Introduction

Hip preservation surgery is a relatively new concept and essentially involves surgeries on the affected native hip to prolong its life and optimize function[1]. These preservation surgeries may be used for various underlying disorders in adolescents and young adults like hip dysplasias[2,3], femoro-acetabular impingement (FAI)[4,5], other hip impingements, sequelae of Legg-Calve 'Perthes'[6,7], hip cartilage injuries and deformities like coxa valga/vara. So far, the conventional approach in such children and young adults has been to counsel the individual and family about the need for arthroplasty for the deformity and restriction in range of motion but to delay it as far as possible due to the inherent requirement of a revision surgery after a few years and technical difficulties of revision arthroplasty. But the advent of hip preservation surgery has opened up new avenues for the treating surgeons to improve the quality of life of their young patients with a wide range of disorders including unstable hip with shallow acetabulum to hip with deep acetabulum with FAI. These surgeries are believed to potentially prevent or at least delay the inevitable osteoarthritis in unstable hips[8,9]. Our institute is amongst the first few first centers in India to

establish a collaborative hip preservation unit and through your esteemed journal we aim to review the process of establishing the same and discuss the challenges faced so that it may help other centers also in doing so. We also reviewed the hip preservation surgeries done at our institute so far with their immediate outcomes.

## Materials and methods

To set up a hip preservation surgery unit in an existing tertiary level orthopedic surgery center the most important resource is trained manpower. With the help of visiting hip preservation surgeon from abroad we set about to form a team for the hip preservation unit at our center. The team consisted of primary hip preservation surgeon who visited our center once every two months for two days, adult hip replacement surgeon, an arthroscopist interested in hip arthroscopy, pediatric orthopedic surgeon and dedicated paramedical staff. The team thus constituted agreed upon the various disorders for which hip preservation surgery can be offered to the patients. The patient enrollment from our OPD started in July 17 and our study includes all consecutive patients attending the orthopedic OPD at our institute and those referred by other orthopedic surgeons who met the inclusion criterion. Information of the new program was also disseminated by the hospital website to other orthopedic surgeons and patients. The patients were then reviewed and evaluated by the hip preservation surgery team for assessment for benefit from hip preservation procedure and for chalking out the procedure to be done. They then underwent various procedures as listed in

<sup>1</sup>Department of Orthopaedics Sancheti Institute of Orthopaedics and Rehabilitation, Pune, Maharashtra, India.

### Address for correspondence:

Dr. Tarang Sanjay Khairnar,  
Department of Orthopaedics Sancheti Institute of Orthopaedics and Rehabilitation, Pune, Maharashtra, India  
E-mail: tarang\_k@hotmail.com

**Table 1:** Various hip preservation procedures done in our center

Surgeries performed	No.of cases
<b>Periacetabular osteotomy(PAO) also known as Ganz osteotomy, Triple osteotomy, pelvic osteotomies</b>	<b>3</b>
Arthroscopic Labral repair/reconstruction, Cam osteoplasty	10
<b>Safe Surgical dislocation for head reduction/osteoplasty/chielectomy/neck lengthening</b>	<b>2</b>

table 1 after written informed consent and routine preanesthetic checkup.

All patients who were operated by hip preservation techniques were followed up at day 3,7 and then monthly for 6 months. Clinical outcomes were measured for all procedures carried out and recorded at all follow up visits. In addition, logistic satisfaction outcomes were judged with respect to communication with patients consenting for surgery, availability of specialized equipment, post op rehabilitation and arrangement of follow up for operated patients to assess our program and responses were duly recorded.

### Results

A total of 86 patients who had various hip disorders were screened in the orthopedic OPD at our institute in one calendar year from 01 July 2017 till 30th June 2018 for suitability of hip preservation surgery. Of them 15 were operated after written informed consent. Their baseline characteristics and the surgery done on them are as given in table 2. 7 of the 9 patients had femur acetabular impingement (FAI). They were taken up for hip arthroscopy, labral repair and CAM osteoplasty. 3 patients with hip dysplasia were taken up for Ganz osteotomy, 2 patient underwent safe surgical dislocation and 1 patient underwent old implant removal with arthroscopic CAM osteoplasty. At follow up all patients, reported significant reduction in pain and improvement in range of motion and ease of mobility. All patients expressed satisfaction with the preprocedural counselling and consent session, the surgery and follow up procedure. No intraoperative /postoperative complications were encountered. We had one patient with discontent as he developed post arthroscopy

chondrolysis<sup>10</sup>. Though he had a proper pre procedural consent, the reason for discontent was the unavailability of the operating surgeon. He was later reconciled by the native team members and was allotted an appointment based on the visiting surgeon's next visit.

**Discussion:** Hip preservation surgery is so far an upcoming concept in India<sup>11</sup> and our institute is one of the first centres in India to establish a collaborative hip preservation center by outsourcing the clinical and surgical expertise to a visiting 'Hip preservation' surgeon from U.S.A. The aim of our study was to share the experience and discuss the challenges faced for the same through your journal to encourage other institutes to explore the option of establishing a hip preservation surgery unit. As mentioned earlier, this was possible primarily due to the expertise of a visiting surgeon from abroad. The surgery appointments were made through an efficient secretariat as per the visit schedule of the surgeon after thorough evaluation on outpatient basis by the native hip preservation surgery team. These patients were then taken up for various hip preservation procedures. On short term follow up all the patients reported significant reduction in pain and improvement in range of motion and ease of mobility which is a major advantage of these procedures [1-9,11,12]. All our patients also expressed satisfaction with the pre surgery counselling and postoperative care. Also by assisting and observing these procedures, we could also enhance the skills of native surgeons in the team and indirectly shorten the learning curve of Hip preservation surgeries.

We also encountered a few teething problems. The most important among them was some discontent due to non-availability of the operating surgeon to follow up the patients in person after the surgery though they were followed up by other native members of the same team. Also despite counselling some patients believed that they would not need hip replacement in the future creating a mismatch between their expectations and on ground outcomes. There was however significant improvement once they were recounselled personally by the native members of the team. Overall our patients showed significant short term improvement in pain reduction and ambulation which in turn improved their quality of life significantly. Thus, to conclude, establishing a collaborative Hip Preservation unit in India proves to be a beneficial venture with regards to patient satisfaction [11-12].

### Conclusion

By establishing such a unit/team we could generate awareness about hip preservation procedures and outreach this awareness in remote peripheral secondary care centers, this venture also proved beneficial to native surgeons, trainees and fellows. Apart from these advantages we could also provide opportunities to the visiting surgeon in doing challenging long standing cases of the rural populations in India

Table 2: Baseline characteristics and hip preservation procedures done

SR NO	AGE	GENDER (M/F)	DAIGNOSIS	PROCEDURE
1	14	F	LEFT HIP DYSPLASIA	PAO + (GANZ)
2	31	M	LEFT FAI (CAM)	ARTHROSCOPIC EVALUTION & CAM EXCISION
3	14	M	HEALED PERTHES	OSTEOPLASTY + RELATIVE NECK LENTHENING + VALGUS OSTEOTOMY
4	32	M	LEFT HIP FEMOROACETABULAR IMPINGEMENT WITH LABRAL CYST	LEFT HIP ARTHROSCOPIC CAM OSTEOPLASTY + RIM TRIMMING + LABRAL CYST EXCISION + REPAIR WITH SUTURE ANCHOR
5	13	M	LEFT HIP DYSPLASIA	PAO LEFT
6	14	M	PERTHES	CHEILECTOMY , NECK LENGTHENING
7	10	F	RIGHT HIP DYSPLASIA	FEMUR DEROATION OSTEOTOMY + TRIPPLE OSTEOTOMY
8	42	M	RIGHT HIP FAI (MIXED)	ARTHROSOPIC RIM TRIM + DEBRIDMENT
9	17	M	POST-TRAUMATIC AVN LEFT HIP WITH CAM LESION	LEFT HIP IMPLANT REMOVAL + ARTHROSCOPIC CAM OSTEOPLASTY
10	30	M	RIGHT HIP FEMOROACETABULAR IMPINGEMENT WITH LABRAL TEAR	RIGHT HIP ARTHROSOCPIC RIM TRIM + CAM EXCISION + LABRAL REPAIR
11	39	F	RIGHT FAI	RIGHT HIP ARTHROSCOPIC CAM OSTEOPLASTY WITH RIM TRIMMING
12	38	M	LEFT HIP FEMOROACETABULAR IMPINGEMENT	ARTHROSCOPIC EVALUATION OF HIP OSTEOPLASTY AND RIM TRIM
13	43	M	RIGHT HIP FEMOROACETABULAR IMPINGEMENT	RIGHT HIP ACETABULAR OSTEOPLASTY WITH RIM TRIM
14	45	M	LEFT HIP LABRAL TEAR WITH CAM LESION	LEFT A SCOPIC LABRAL REPAIR ARIM TRIMMING AND CALM OSTEOPLASTY
15	11	M	B/L ACETABULAR DYSPLASIA (LEFT>RIGHT)	LEFT PELVIC DEGA'S OSTEOTOMY + LEFT VDRO FOR FEMUR

However , as a word of caution, it is important to mention that overcoming the short term challenges faced like counselling, weighing patient specific benefits of surgery highly relied on the commitment to follow up and counsel

by the native members of the team.

## References

1. Fukui K, Trindade CAC, Briggs KK et al. Arthroscopy of the hip for patients with mild to moderate developmental dysplasia of the hip and femoroacetabular impingement. Bone Joint J 2015; 97-B: 1316–21.
2. Nawabi DH, Degen RM, Fields KG et al. Outcomes after arthroscopic treatment of femoroacetabular impingement for patients with borderline hip dysplasia. Am J Sports Med 2016; 44: 1017–23.
3. Cooperman DR, Wallensten R, Stulberg SD. Acetabular dysplasia in the adult. Clin Orthop Relat Res 1983; 175: 79–85.
4. World J Orthop. 2016 May 18; 7(5): 280–286. Published online 2016 May 18. doi: 10.5312/wjov.v7.i5.280 Bernese periacetabular osteotomy for hip dysplasia: Surgical technique and indications Atul F Kamath
5. Clin Orthop Relat Res. 2015 Apr;473(4):1370-7. doi: 10.1007/s11999-014-4115-7. Does surgical hip dislocation and periacetabular osteotomy improve pain in patients with Perthes-like deformities and acetabular dysplasia? Clohisy JC1, Nepple JJ, Ross JR, Pashos G, Schoenecker PL.
6. Application of the surgical dislocation approach to residual hip deformity secondary to Legg-Calvé-Perthes disease. Novais EN. J Pediatr Orthop. 2013 Jul-Aug; 33 Suppl 1:S62-9
7. Periacetabular osteotomy in the treatment of severe acetabular dysplasia. Surgical technique. Clohisy JC, Barrett SE, Gordon JE, Delgado ED, Schoenecker PL. J Bone Joint Surg Am. 2006 Mar; 88 Suppl 1 Pt 1:65-83.
8. One-third of Hips After Periacetabular Osteotomy Survive 30 Years With Good Clinical Results, No Progression of Arthritis, or Conversion to THA. Lerch TD, Steppacher SD, Liechti EF, Tannast M, Siebenrock KA. Clin Orthop Relat Res. 2017 Apr;475(4):1154-1168. doi: 10.1007/s11999-016-5169-5.

9. Rotational Acetabular Osteotomy for Pre- and Early Osteoarthritis Secondary to Dysplasia Provides Durable Results at 20 Years. Yasunaga Y, Ochi M, Yamasaki T, Shoji T, Izumi S. Clin Orthop Relat Res. 2016 Oct;474(10):2145-53. doi: 10.1007/s11999-016-4854-8.
10. Arthroscopy. 2015 Jan;31(1):167-72. doi: 10.1016/j.arthro.2014.06.028. Epub 2014 Sep 11. Chondrolysis after hip arthroscopy. Más Martínez J1, Sanz Reig J2, Morales Santias M2, Bustamante Suarez de Puga D2.
11. Richard (Ricky) Villar, What is hip preservation?, Journal of Hip Preservation Surgery, Volume 5, Issue 2, July 2018, Pages 103–104, <https://doi.org/10.1093/jhps/hny0>
12. Are changes in pain associated with changes in quality of life and hip function 2 years after periacetabular osteotomy? A follow-up study of 321 patients Julie Boje; Christina Kroghner Caspersen; Stig Storgaard Jakobsen; Kjeld Søballe; Inger Mechlenburg Journal of Hip Preservation Surgery, Volume 6, Issue 1, January 2019, Pages 69–76, <https://doi.org/10.1093/jhps/hnz009>.

**Conflict of Interest: NIL**  
**Source of Support: NIL**

#### How to Cite this Article

Patwardhan S, Khairnar T, Bhandari S, Sancheti P, Shyam A. Establishing a Collaborative Hip Preservation Unit-challenges and Analysis over One Year. Journal of Trauma and Orthopaedic Surgery. Apr - June 2019;14(2): 2-5.