

Supplementary Material

Table i. Database search strategies

Embase search terms

1. hip arthroscopy.mp or hip arthroscopy/
2. hip /su [surgery]
3. arthroscopic surgery/ or arthroscopy*.mp
4. hip.mp or hip/
5. 3 and 4
6. 1 or 2 or 3 or 5
7. Hip dysplasia.mp or hip dysplasia/
8. Congenital hip dislocation/ or dysplastic hip.mp
9. Developmental dysplasia of the hip
10. Congenital hip dysplasia.mp
11. Acetabular dysplasia.mp
12. Hip dislocation/
13. Hip instability.mp
14. 7 or 8 or 9 or 10 or 11 or 12 or 13
15. 6 or 14

Medline search terms

1. hip arthroscopy.mp
2. Arthroscopy/ or arthroscopy*.mp
3. Hip/ or hip.mp
4. arthroscopy.mp or Arthroscopy/
5. 3 and 4
6. 1 or 2 or 5
7. Hip dysplasia.mp
8. Developmental dysplasia of the hip.mp
9. Congenital hip dysplasia.mp or Hip dislocation, congenital/
10. Acetabular dysplasia.mp
11. Hip instability
12. Hip dislocation/
13. 7 or 8 or 9 or 10 or 11 or 12
14. 6 and 13

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1. Developmental dysplasia of the hip
 2. Acetabular dysplasia
 3. Congenital hip dysplasia
 4. Congenital hip dislocation
 5. Hip dysplasia
 6. 1 or 2 or 3 or 4 or 5
 7. Arthroscopy
 8. 6 and 7
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Table ii. Characteristics, criteria of dysplasia, results, re-operations in included studies

Study	Number of dysplastic patients (number of hips)	Mean age (yrs)	Male: female ratio	Mean follow-up, mths (range)	Criteria of hip dysplasia (mean measurement of patients in study)	Results	Re-operations	Quality Assessment Score (Level of Evidence)
Briggs et al ¹	38 (38)	38	n/a	30 (24 to 53)	Dysplasia: CEA < 20° Borderline: CEA 20 to 25° (Study mean CEA 21.6°)	Post op improvement of mHHS by 19 (p = 0.001). No association between outcome and age, CEA, dysplastic category.	7 THA 4 revision arthroscopy 1 PAO 2 THA	n/a (Level IV) MINORS 11/16 (Level IV)
Byrd et al ²	48 (48)	48	20:28	27 (12 to 60)	Dysplasia: CEA < 20° Borderline: CEA 20 to 25°	Post op improvement of mHHS by 27 (p<0.01). No statistical difference of mHHS between dysplastic and borderline group (p =0.674). Worse outcomes seen with patients with evidence of arthritis.	2 THA	MINORS 11/16 (Level IV)
Domb ³	22 (22)	20	4:18	27.5 (17 to 39)	Borderline: CEA 18 to 25°	Significant improvement in mHHS (17.2), NAHS (17.3), HOS-ADL (16.7), HOS-Sport (28), VAS (2.9) (all p < 0.001). Good patient satisfaction.	2 revision arthroscopy	MINORS 12/16 (Level IV)
Dwyer ⁴	166 (201)	37.1	36:130	n/a	Dysplasia: CEA 16 to 22° Borderline: CEA 22 to 28°	Chondral damage to posterior femoral head and anterior acetabulum predictive of conversion to THA	47 THA	MINORS 10/16 (Level IV)
Fukuji ⁵	100 (102)	35	50:50	40	Borderline: CEA 20 to 25° (Study mean CEA 23°)	Improvement in mHHS (21.4), WOMAC (15.6), HOS-ADL (13.8), HOS-Sport (24.3), SF12 physical component (8.4) (all p < 0.001)	5 THA 7 revision arthroscopy	n/a (Level IV)
Jayasekera ⁶	12 (12)	40	4:8	12	Dysplasia: CEA < 20° (Study mean CEA 15.4°)	Significant post op improvement of mHHS (55.4 to 79.3) in dysplastic and non-dysplastic (57.9 to 78.7) groups (p = 0.02)		MINORS 17/24(Level II)
Kalore ⁷	50 (50)	38	6:44	33 (12 to 65)	Borderline: CEA < 25°, or anterior CEA < 25°, or Sharp angle > 40° (Study mean CEA 23°)	No statistical difference between two groups at last follow-up (p = 0.909)		MINORS 17/24 (Level III)
Larson ⁸	77 (88)	33.9	22:55	26 (12 to 80)	n/a, (Study mean CEA 20.8°)	Re-operation rate higher in borderline dysplastic group (15/50) compared with non-dysplastic group (8/56) Labral debridement independently predicted higher rate of re-operation (p = 0.02) and subsequent THA (p = 0.01) Improvement of mHHS in dysplastic cohort (15.6) although inferior compared with non-dysplastic cohort (24.4) (p < 0.05) Increased failures in dysplastic cohort. Cam FAI, labral repair, capsular plication predictive of better outcomes.	15 required further surgical intervention	n/a(Level III)
Matsuda ⁹	7 (7)	38.4	3:4	Minimum 24 mths	Dysplasia: CEA 16 to 24°	Significantly less improvement in NAHS (dysplastic group had mean change -2.3 at 24 mths compared with +22.4 in non-dysplastic group (p < 0.03) Lower satisfaction, and higher conversion to THA in dysplastic group (2/7) compared with non-dysplastic (8/78) (p = 0.15).	2 THA	n/a (Level III)
McCarthy ¹⁰	163 (170)	35	44:119	n/a	Dysplasia: CEA 16 to 22° Borderline: CEA 22 to 28°	Dysplasia associated with labral tears and chondral injury. Higher rate of THA in dysplastic (13/24) compared with mild dysplastic (4/146) group.	17 THA	MINORS 3/16(Level IV)
McCarthy ¹¹	20 (21)	36	7:13	(27 to 41)	Dysplasia: CEA 19 to 27°	Improvement of pain and symptoms in 85% of patients at 2 yrs	2 THA 1 Revision arthroscopy	MINORS 8/16(Level IV)
Nawabi ¹²	44 (46)	29.3	20:24	33.2	Borderline: CEA 18 to 25° (Study mean CEA 21.8°)	Statistically significant improvement of mHHS (dysplastic: 19.3, non-dysplastic: 20.8), iHOT (dysplastic: 34.3, non-dysplastic: 34.9), HOS-ADL (dysplastic: 14.5, non-dysplastic: 16.4), HOS-sport (dysplastic: 19.6, non-dysplastic: 27.5) in dysplastic and non-dysplastic groups (p < 0.001 in all). Smaller mean improvements in dysplastic group, but difference not statistically significant.		n/a(Level III)

(continued)

Table II. (Continued)

Study	Number of dysplastic patients (number of hips)	Mean age (yrs)	Male: female ratio	Mean follow-up, mths (range)	Criteria of hip dysplasia (mean measurement of patients in study)	Results	Re-operations	Quality Assessment Score (Level of Evidence)
Parvizi ¹³	34 (36)	34	12:22	42 (12 to 84)	Acetabular index < 20°, or anterior or posterior undercoverage of femoral head < 10%	Accelerated arthritis post arthroscopy in 14/34 patients. Subluxation of femoral head noted in 13/34 patients. Improvement of SUSHI at 6 wks, but deteriorated to 76 points at 2 yrs (further data not provided)	3 THA 3 revision arthroscopy 6 PAO 7 femoral osteochondroplasty	11/16 (Level IV)
Schilders ¹⁴	30 (30)	37	7:23	24	Dysplasia: CEA < 25° (Study mean CEA 21°)	Improvement of mHHS post op inversely related to increased Tonnis angle (p = 0.0013)	n/a	n/a (Level IV)
Shimizu ¹⁵	35 (35)	46.6	5:30	13.5	Borderline: CEA 20 to 25°	Mean mHHS improvement of 28.7 in dysplastic group (p < 0.001) and 38 in non-dysplastic group (p < 0.001). Mean mHHS improvement significantly poor compared with non-dysplastic group (0.013)	5 THA	n/a (Level III)
Uchida ¹⁶	16 (16)	25.1	4:12	14 (12 to 29)	n/a	Improvement of mean mHHS (32.4) post op labral repair, cam osteochondroplasty. Poor results, associated with severe dysplasia and severe chondral injury	1 revision arthroscopy	n/a (Level IV)
Uchida ¹⁷	17 (17)	39.5	4:13	Minimum 6 mths	n/a, (study mean CEA 15.5°)	Improvement of mean mHHS (17.4) and NAHS (21.6) post shelf acetabuloplasty	n/a	n/a (Level IV)
Yamamoto ¹⁸	10 (10)	33.7	0:10	96 (12 to 168)	n/a, (study mean CEA 12.4°)	Mean post-operative improvement of HHS (28 points), with no evidence of progression of osteoarthritis	n/a	MINORS 9/16 (Level IV)

THA, total hip arthroplasty; PAO, periacetabular osteotomy; CEA, centre-edge angle; n/a, not applicable; MINORS, Methodological Index for Non-Randomized Studies; HHS, Harris hip score; SUSHI, Super Simple Hip Score, NAHS, Non Arthritic Hip Score; mHHS, modified Harris hip score; WOMAC, Western Ontario and McMaster University Score; HOS, Hip Outcome Score

References

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