ISAKOS

International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine

10th Biennial ISAKOS Congress • June 7-11, 2015 • Lyon, France

Paper #53

AMIC Chondrogide + Icepicking Versus Icepicking Alone in Treatment of Acetabular Cartilage Lesions in Cam-Type FAI

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Summary:
The AMIC procedure with Chondrogide is safe and is usefull in the treatment of medium to large cartilage defects in patients with cam-type FAI.

Abstract:
INTRODUCTION
Cam type FAI typically produces acetabular cartilage lesions that can be quite extensive in young and active patients. The treatment of these cartilage lesions is much debated. Autologeous Membrane Induced Chondrogenesis (AMIC) procedure has been described recently. We performed a prospective study

MATERIAL & METHODS
In 2012 we performed the AMIC procedure with Chondrogide membrane in 16 consecutive patients that were prospectively recruited. There were 13 males and 3 females with average age of 34 years (range 20 – 48) and with acetabular rim lesion 150 – 450 mm² and Tönnis grade <2. All patients had cam type FAI only for which arthroscopic femoroplasty was performed. The acetabular full thickness cartilage was debrided, icepicking was performed and a Chondrogide membrane was applied according the technique described by A Fontana. Average defect size was 298 mm² (range 200-425). A matched cohort were only icepicking had been used was created from our database as a control group. This group consisted of 16 patients (13 males and 3 females), average age 36 years (range 24-49), with average defect size 267 mm² (range 150-450). Patients with symptomatic joint effusion received IA hyaluronic acid (HA) in the postoperative period.

RESULTS
There were no complications or adverse events in either group. Average FU for the AMIC group was 18 months (range 13-28), for the control group 41 months (range 28-53). Although inclusion criteria were the same, the AMIC group had a tendency for a larger defect size. There was one conversion to THR in AMIC group versus 3 in control group. Three patients received an average of 2 (1-3) IA injections with HA in group 1; 10 patients received an average of 3 (2-6) (p =0.002). IA injections with HA in group 2. In group 1 7/16 returned to competitive sports, in group 2 2/16. Internal rotation was 28° (range 20-40) and 27° (range 20-35), with normalization of ER, flexion and extension in all patients. UCLA Activity Score was 9/10 (7-10) and 8/10 (7-9), HOOS 91/10 (77-100) and 94/100 (89-100), Oxford 94/100 (81-10) and 91/100 (79-100), WOMAC 94/100 (86-100) and 97/100 (95-100) for group 1 and 2 respectively. In group 1 HHS improved from 83 preop to 94 at FU (p<0.01); UCLA improved from 6 to 9 (p<0.01). In group 2 HHS improved from 83 to 93 (p<0.01); UCLA improved from 6 to 8 (p<0.01).

CONCLUSION
The AMIC procedure with Chondrogide is safe and is usefull in the treatment of medium to large cartilage defects in patients with cam-type FAI. Clinical results are excellent (significant improvement in HHS and UCLA), with no significant difference compared to icepicking only). Postoperative recovery is enhanced compared to the use of icepicking only with less symptomatic joint effusion in the first year after surgery (significant improvement). Return to competitive sports is more likely. Wether the failure rate with conversion to THR is lower remains to be seen with longer follow-up, but results are encouraging in the short term.