

Fișa suspiciunii de plagiat / Sheet of plagiarism's suspicion	Indexat la: 19/07
--	------------------------------

Opera suspicionată (OS)	Opera autentică (OA)
Suspicious work	Authentic work

OS	IVĂNESCU, A., MELINTE, R., SOLYOM, A., MORARU, L., PETRIȘOR, M. and Brânzaniuc, Klara, "Transchondral drilling and osteochondral autograft (Mosaicoplasty) in knee articular cartilage defects", <i>Acta Medica Marisiensis</i> , Vol. 57, No.4, p.303-305, 2011.
OA	KARATAGLIS, D., GREEN, M.S., and LEARMONTH, D.J.A., Autologous osteochondral transplantation for the treatment of chondral defects of the knee, <i>The Knee</i> , No.13, p.32-35, 2006.

Incidența minimă a suspiciunii / Minimum incidence of suspicion	
p.304: 25s – p.304:40s;	p.33: 14s – p.33:40s
p.304: 06d – p.304:31d	p.33: 06d – p.33:38d
p.305: 04s – p.305:23s	p.34: 01s – p.34:19s
Fișa întocmită pentru includerea suspiciunii în Indexul Operelor Plagiate în România de la www.plagiate.ro	

Documente care se referă la faptele de plagiat probate:

A¹.

Consiliul Național de Etică a Cercetării Științifice, Dezvoltării Tehnologice și Inovării (CNECSDTI) a înregistrat cu nr. 255/9.03.2012 adresa cu nr. 8304/6.03.2012 trimisă de Ministerul Educației, Cercetării, Tineretului și Sportului (MECTS), Direcția Generală de Învățământ Superior.

În această adresă se solicită soluționarea memoriilor înregistrate la MECTS cu nr. 8304 / 13.02.2012 și nr. 8304bis/21.02.2012, cu privire la posibile abateri grave de la buna conduită în cercetarea științifică și activitatea universitară. În sesizarea cu nr. 8304 / 6.03.2012 adresată Ministrului Educației, Cercetării, Tineretului și Sportului, reclamantul dorește „să atragă atenția asupra actelor de plagiat ale rectorului Copotoiu, ale prorectorului Brânzaniuc și ale decanului Azamfirei de la Universitatea de Medicină și Farmacie Târgu Mureș”.

Reclamantul afirmă că persoanele reclamate sunt coautori la articole plagiate și aduce în sprijinul afirmațiilor sale declarațiile autorilor lucrărilor presupus a fi plagiate.....

... Prin urmare, CNECSDTI constată că autorii A. Ivănescu, R. Melinte, A. Solyom, L. Moraru, M. Petrisor și K. Brânzaniuc au expus într-o operă scrisă texte, expresii și idei extrase dintr-o altă operă scrisă, fără a menționa acest lucru și fără a face trimitere la sursele originale. Având în vedere prevederile articolului 2, litera a), și articolului 4, aliniatul (1), litera d) din Legea 206/2004 cu modificările și completările ulterioare, CNECSDTI constată că semnatarii articolului incriminat se fac vinovați de abaterea de la normele de bună conduită în activitatea de cercetare privind articolul Hayan R., Gicquel P., Schneider L., Karger C., Clavert J.M., Juvenile osteochondritis of femoral condyles: treatment with transchondral drilling. *Analysis of 40 cases*, din: *J Child Orthop*, No. 4, 2010, pp. 39-44 și articolul D. Karataglis, M.A. Green, D.J.A. Learmonth, Autologous osteochondral transplantation for the treatment of chondral defects of the knee, din *The Knee* 13 (2006), pp. 32-35.

¹ Consiliul Național de Etică a Cercetării Științifice, Dezvoltării Tehnologice și Inovării. Raportul final nr.977/ 26.09.2012. Disponibil la: <http://cne.ancs.ro/wp-content/uploads/2012/11/Raportul-final-nr.-977.pdf>

CNCSDTI constată că a fost publicată o erată la acest articol A2 în Acta Medici Marisiensis 2011, 57(4): 383 — 385.

Pentru articolul A3: The presence of Nucleated Red Cells in the Blood of Critical Care Patients is Associated with an Increased Mortality Risk, autori: Duțu M., Negoită S., Manolescu R., Calu V., Corneci D., Georgescu A., Togănel C., Azamfirei L. a fost analizat de către Comisia de Etică a UMF Târgu Mureș la data de 17.09.2012,

CNCSDTI constată că a fost publicată o erată la acest articol A3 în Acta medici Marisiensis 2022, 58(2): 132.

În concluzie, CNECSDTI constată că lucrările:

A1. Immunohistochemical Evaluation of Sentinel Lymph Nodes in Colon Cancer, autori: Șorlea S., Coros M.F., Georgescu R., Gyrgy-Fazakas I., Brânzaniuc K., Milutin D., Pavai Z., Copotoiu C.

A2. Transchondral drilling and osteochondral autograft (Mosaicplasty) in knee articular cartilage defects, autori: Ivănescu A., Melinte R., Solyom A., Moraru L., Petrisor M., Brânzaniuc K.

A3. The presence of Nucleated Red Cells in the Blood of Critical Care Patients is Associated with an Increased Mortality Risk, autori Duțu M., Negoita S., Manolescu R., Calu V., Corneci D., Georgescu A., Toganel C., Azamfirei L., nu respectă normele de bună conduită în activitatea de comunicare, publicare, diseminare și popularizare științifică.

S. Șorlea nu a respectat normele de bună conduită în cercetare prin includerea în lista de autori a unei publicații științifice a două persoane fără acordul acestora. A fost sancționat de Comisia de Etică a UMF Târgu Mureș cu suspendarea, pe o perioadă de 12 luni, a dreptului de înscriere la un concurs pentru ocuparea unei funcții didactice superioare ori a unei funcții de conducere, de îndrumare și de control, ca membru în orice comisie de doctorat, de master sau de licență, sancțiune regăsită.

A. Ivănescu nu a respectat aceleași norme de bună conduită în cercetare incluzând trei persoane fără acordul acestora pe lista de autori a unei publicații științifice. A fost sancționat de Comisia de Etică a UMF Târgu Mureș cu avertisment scris.

Dr. Duțu M. nu a respectat normele de bună conduită în cercetare prin includerea prof. L. Azamfirei ca ultim autor al articolului A3 fără acordul acestuia. A fost sancționată de Comisia de Etică a UMF Târgu Mureș cu avertisment scris.

Prof. C. Copotoiu și prof. K. Brânzaniuc nu pot fi făcuți responsabili de nerespectarea normelor de bună conduită în cercetare din articolul A1, întrucât nu li s-a cerut acordul de a face parte din lista de autori.

Prof. Azamfirei L. nu poate fi făcut responsabil de nerespectarea normelor de bună conduită din articolul A3, întrucât nu i s-a cerut acordul de a face parte din lista de autori.

4) Sancțiuni și recomandări

4.1. CNECSDTI stabilește următoarele sancțiuni:

Avertisment scris, în baza Legii 206/2004 cu modificările și completările ulterioare, art. 14, alin.(1), lit. a), coroborat cu Legea 1/2011, art. 324, litera a) pentru doamna prof dr. K. Brânzaniuc.

...

ACTA MEDICA MARISIENSIS

OFFICIAL PUBLICATION OF THE
UNIVERSITY OF MEDICINE AND PHARMACY OF TÂRGU MUREȘ



Editorial

The Possibilities of Harvesting and the Modalities of Processing Hematopoietic Stem Cells

Original research

Telemedicine Aids Disaster Preparation in Rural Romania

Particularities of Helicobacter pylori Infection in Diabetic Patients

A New Method of Mobilization of Hematopoietic Stem Cell in Autologous Stem Cell Transplantation

Development of a Separation Method of Four Penicillin Derivatives by Capillary Electrophoresis

Case report

The von Meyenburg Complexes

Featuring

Cardiology

Dental Medicine

Endocrinology

Gastroenterology

Hematology

Internal Medicine

Orthopedics

Pediatrics

Pharmacy

Urology

Transchondral Drilling and Osteochondral Autografting (Mosaicplasty) in Knee Articular Cartilage Defects

Îvănescu A¹, Melinte R², Sólyom Á², Moraru L³, Petrișor M⁴, Brânzaniuc Klara¹

¹University of Medicine and Pharmacy of Tirgu Mures, Department of Anatomy and Embriology

²County Emergency Clinical Hospital Tirgu Mures, Orthopedic Clinic II

³County Emergency Clinical Hospital Tirgu Mures, Clinic of Cardiovascular Surgery

⁴University of Medicine and Pharmacy of Tirgu Mures, Department of Medical Informatics and Biostatistics

Background: The cartilage is a complex and specialized tissue. It is extremely difficult to repair or to replace it, once damaged. The management of cartilage defects remains controversial and over the last five decades various treatment options and surgical techniques have been tried to optimize the clinical outcome.

Objective: The aim of this study is to evaluate, but not to compare the results of two of the most used cartilage repair techniques: transchondral drilling and osteochondral autografting.

Material and methods: Between January 2009 and June 2010, we performed 55 transchondral drillings and 10 mosaicplasties on patients with articular cartilage defects of the knee. All patients were followed up at 6 months. Hughston clinical and radiological scales were used to evaluate the patients in the transchondral drilling group.

Results: The Hughston Clinic score was 2 in 2 cases (3.6%), 3 in 5 cases (9.9%) and 4 in 48 cases (86.5%), giving over 95% of good results. The Hughston radiological score was 2 in one case (2%), 3 in 4 cases (7.3%) and 4 in 50 cases (90.7%). In the mosaicplasty group, the average area of the osteochondral lesion covered with autologous osteochondral transplantation ranged from 0.8 to 6 cm² (average: 2.13 cm²). The diameter of the grafts used ranged from 6 to 10 mm and 1 to 6 grafts were used in each case to achieve >90% covering of the lesion area.

Conclusions: Both techniques offer satisfactory functional outcome and do not compromise the patients' future options.

Keywords: transchondral drilling, osteochondral autografting, mosaicplasty, articular cartilage

Introduction

The cartilage is a complex and specialized tissue. It is extremely difficult to repair or to replace it, once damaged. The repair tissue found in the cartilage defects is fibrocartilage, which is mechanically and chemically inferior to native cartilage [1]. The management of cartilage defects remains controversial and over the last five decades various treatment options and surgical techniques have been tried to optimize the clinical outcome.

In a review of 993 knee arthroscopies in patients with a mean age of 35 years, there was an 11% incidence of full-thickness lesions that could have benefited from surgical treatment [2]. In a larger and more generalized study, Curl *et al.* reviewed 31,516 knee arthroscopies of patients in all age groups and reported chondral lesions in 19,827 (63%) of patients; 5% of all cases were found in patients younger than 40 years of age who had grade IV lesions [3]. A review of 1,000 arthroscopies by Hjelle *et al.* reported chondral or osteochondral lesions of any type in 610 patients (61%), out of which 190 patients had focal lesions (19% of all cases). Many of these lesions were clinically silent at the time of detection [4].

Keeping in mind that those procedures are relatively new, we presented the author's and the Orthopedic Clinic's experience in using these techniques. The aim of this study is to evaluate, but not compare, the results of two of the

most used cartilage repair techniques: transchondral drilling and osteochondral autografting.

Material and methods

Between January 2009 and June 2010, we performed 55 transchondral drillings and 10 mosaicplasties on patients with articular cartilage defects of the knee. The study is a prospective longitudinal one, with 6 months patient follow-up. In the group with transchondral drilling, 39 patients (70.9%) were male. In the group with mosaicplasty, 8 patients were male and 2 female. The medial condyle was affected in 58 cases (89.23%).

The mean age for the group with transchondral drilling was 42.55±9.32 years, the patients being between 19 and 49 years old. For the group with mosaicplasty, the mean age was 44.23±6.87 years, the patients being between 39 and 51 years old.

In all patients we performed a conventional radiography (anteroposterior and lateral views). In 8 patients, 6 from the transchondral drilling group (10.9%) and 2 patients from the mosaicplasty group we performed a CT scan. Magnetic resonance imaging was performed in 13 patients from the transchondral drilling group (23.6%) and 4 patients from the mosaicplasty group.

The performed procedure was chosen based on patient age, physical activity and lesion size.

Table I. Hughston clinical scale

Excellent	4	Normal sports activity No symptoms Normal physical examination
Good	3	Normal sports activity Knee pain with intense activities Normal physical examination
Average	2	Normal sports activity Knee pain and swelling with intense activities Normal physical examination
Bad	1	Knee pain and swelling with moderate activities Flexum less than 200
Failure	0	Restriction of sports Knee pain and swelling with daily activities Flexum more than 200

The opportunity of surgical intervention was raised when the patient showed no improvement after the conservative treatment. All patients were followed-up at 6 months. Hughston clinical and radiological scales were used to evaluate the patients in the transchondral drilling group (Tables I and II).

Surgical technique

Transchondral drilling. This technique was carried out with arthroscopy. After a conventional installation for knee arthroscopy, the diseased area is identified. This identification is made on the gross appearance of articular cartilage, gray or yellowish, with a frosted consistency, and abnormal to palpation due to its softening.

Multiple perforations (5–10) using a fine 1.2–1.5-mm diameter K-wire are made through the articular cartilage, opposite to the lesion of the subchondral bone and passing beyond the zone of sclerosis that circumscribes the lesion. After the drilling, one must observe bleeding from the healthy underlying bone through the puncture holes [5]. Postoperatively, non-weight-bearing for 1 month using two crutches with free mobilization of the knee has been proposed, with the discontinuation of sports activities. Follow-up involves clinical and radiographic monitoring. The resumption of sports activities was allowed 6 months after surgery.

Mosaicplasty. Autologous osteochondral transplantation was carried out with the OATS technique (Osteochondral Autograft Transplantation System, Arthrex, Naples, USA), which allows for press-fit graft implantation. We used the miniopen technique. Grafts were harvested from the lateral or medial edge of the trochlea. The depth of the donor osteochondral plug ranged from 12 to 15 mm and the recipient site was drilled to such a depth so as to compensate for any potential subchondral bone loss and at the same time allow for some bone impaction. Care was taken to achieve perpendicular graft insertion, deliver the graft flush with the joint surface and reproduce the joint curvature as close to anatomical as possible. A drain was inserted in the joint for 24 hours and patients were encouraged to start passive mobilization of their knee as soon as pain allowed. Touch-toe weight bearing was advocated for 4–6 weeks

Table II. Hughston radiological scale

4	Normal
3	Defect or sclerosis
2	Flattening of the condyle
1	Irregular condyle with narrowing of the joint space less than 50%
0	Knee arthritis with narrowing of the joint more than 50%

and patients gradually progressed to full weight bearing thereafter.

For patients with a second look, chondrocyte survival was evaluated by immunohistochemistry. We used CD31 and CD34 as markers, to assess the angiogenesis.

Results

In the transchondral drilling group, we encountered no perioperative complications. The Hughston Clinic score was 2 in 2 cases (3.6%), 3 in 5 cases (9.9%) and 4 in 48 cases (86.5%), giving over 95% of good results. The Hughston radiological score was 2 in one case (2%), 3 in 4 cases (7.3%) and 4 in 50 cases (90.7%). We found a significant correlation between the clinical and radiological Hughston score ($p < 0.001$, $r = 0.96$). All the patients were able to resume their regular duties and life style.

In the mosaicplasty group, the average area of the osteochondral lesion covered with autologous osteochondral transplantation ranged from 0.8 to 6 cm² (average: 2.13 cm²). The diameter of the grafts used ranged from 6 to 10 mm and 1 to 6 grafts were used in each case to achieve >90% covering of the lesion area. Two patients had a second look arthroscopy for ongoing swelling, pain or clicking 6 months following their initial procedure. Arthroscopic assessment was combined with arthrolysis in one case. The grafts were found to be stable, well incorporated and with satisfactory chondrocyte survival in all cases. In both patients, symptoms improved significantly. No donor-site related morbidity was recorded. One patient had a superficial wound infection that was successfully managed with oral antibiotics and one had a deep vein thrombosis and was successfully treated.

Discussions

All patients in our series have maintained a conservative treatment by restriction of sports activities for an average of 6 months, and the use of surgical treatment was offered to one of the following criteria: instability or fragments sequestration, persistence of symptoms in a compliant patient, and the imminent closure of the physis. These indications were similar to those found in the literature [6]. For many authors, multiple transchondral drilling was the preferred treatment of juvenile osteochondritis condylar after failure of conservative treatment. Cepero et al. [6] showed excellent and good clinical and radiological results in 98% of patients operated on for arthroscopic drilling. Other study showed a normalization of radiological images in 87.5% of patients treated by drilling and all patients were clinically asymptomatic at 4 years of decline [7]. In our

2 - 74%

1 - 91%

3 - 99.5%

1 - 91%

series, all patients were operated by multiple arthroscopic transchondral drilling with good clinical and radiological results in over 95% of cases.

Osteochondral defects spontaneously heal with fibrocartilage and treatment options such as abrasion arthroplasty, also promote the formation of fibrocartilaginous tissue, whose load-bearing properties and histological characteristics are significantly inferior to those of normal hyaline cartilage [8–10]. In weight-bearing areas of the knee, this can cause impairment of smooth load transmission, leading to point loading and thus predisposing to development of osteoarthritis. Osteochondral transplantation and autologous chondrocyte implantation that can provide hyaline cartilage covering of the articular surface defect. Autologous chondrocyte implantation leads to covering of the defect with predominantly hyaline or hyaline-like cartilage [11], although this has been challenged by recent reports [12]. A number of authors have reported a high rate of symptom relief and functional improvement, as well as very satisfactory survival of the transplanted hyaline cartilage [13–22]. This method, though, has certain limitations, namely, increased donor site morbidity and a less favorable outcome when used for relatively large defects (>2x2 cm) [22, 23].

Conclusions

All patients from the group with transchondral drilling had good postoperative clinical and radiological outcomes, therefore confirming the validity and effectiveness of multiple transchondral drilling in the treatment of articular cartilage of the knee.

Patients from the mosaicplasty group also had a favorable evolution; both techniques offer satisfactory functional outcome and do not compromise the patients' future options.

Acknowledgement

This paper is partly supported by the Sectorial Operational Programme Human Resources Development (SOP HRD), financed from the European Social Fund and by the Romanian Government under the contract number POSDRU/6/1.5/S/17.

References

1. Kheir E, Shaw D – Management of articular cartilage defects. *Orthopaedics and Trauma* 2009, 23(4): 266–273
2. Aroen A, Loken S, Heir S, et al – Articular cartilage lesions in 993 consecutive knee arthroscopies. *Am J Sports Med* 2004, 32(1): 211–215
3. Curl WW, Krome J, Gordon ES, Rushing J, Smith BP, Poehling GG – Cartilage injuries: a review of 31,516 knee arthroscopies. *Arthroscopy* 1997; 13(4): 456–460

4. Hjelte K, Solheim E, Strand T, Muri R, Brittberg M – Articular cartilage defects in 1,000 knee arthroscopies. *Arthroscopy* 2002, 18(7): 730–734.
5. Lefort G, Moyen B, Beauvais P, De Billy B, Breda R, Cadilhac C et al – L'ostéochondrite diséquante des condyles fémoraux: analyse de 892 cas. *Chir Orthop Traumatol* 2006, 92(5):97–141
6. Cepero S, Ullet R, Sastre S – Osteochondritis of the femoral condyles in children and adolescents: our experience over the last 28 years. *J Pediatr Orthop B* 2005, 14:24–29
7. Aglietti P, Buzzi R, Bassi PB, Fioriti M – Arthroscopic drilling in juvenile osteochondritis dissecans of the medial femoral condyle. *Arthroscopy* 1994, 10:286–291
8. Bobic V, Noble J – Articular cartilage: To repair or not to repair? *J Bone Joint Surg Br* 2000, 82-B:165–6
9. Akeoye KR, Galloway MT – Management of osteochondral injuries of the knee. *Clin Sports Med* 2001, 20(2):343–64
10. Cain EL, Clancy WG – Treatment algorithm for osteochondral injuries of the knee. *Clin Sports Med* 2001, 20(2):321–42.
11. Bentley G, Blant LC, Carrington RWJ, Akmal M, Goldberg A, Williams AM, et al – A prospective randomised comparison of autologous chondrocyte implantation versus mosaicplasty for osteochondral defects in the knee. *J Bone Joint Surg Br* 2003, 85-B: 223–30
12. Horas U, Polinkovic D, Herr G, Aigner T, Schnettler R – Autologous chondrocyte implantation and osteochondral cylinder transplantation in cartilage repair of the knee joint. A prospective comparative trial. *J Bone Joint Surg Am* 2003, 85-A: 185–92
13. Jacob RP, Franz T, Gautier E, Mainil-Varlet P – Autologous osteochondral grafting in the knee: indication, results and reflections. *Clin Orthop* 2002, 401: 170–84
14. Hangody L, Feczko P, Bartha L, Bodo G, Kish G – Mosaicplasty for the treatment of articular defects of the knee and ankle. *Clin Orthop* 2001, 391S: S328–36
15. Hangody L, Fules P – Autologous osteochondral mosaicplasty for the treatment of full-thickness defects of weight-bearing joints. Ten years of experimental and clinical experience. *J Bone Joint Surg Am* 2003, 85-A(1): 25–32
16. Hangody L, Kish G, Karpati Z, Szerb I, Udvarhelyi I – Arthroscopic autogenous osteochondral mosaicplasty for the treatment of femoral condylar articular defects. A preliminary study. *Knee Surg Sports Traumatol Arthrosc* 1997, 5: 262–267
17. Hangody L, Kish G, Karpati Z, Udvarhelyi I, Szigeti I, Bety M – Mosaicplasty for the treatment of articular cartilage defects: application in clinical practice. *Orthopaedics* 1998, 21(7): 751–756
18. Hangody L, Rathonyi GK, Duska Z, Vasarhelyi G, Fules P, Modis L – Autologous osteochondral mosaicplasty. Surgical technique. *J Bone Joint Surg Am* 2004, 86-A(1): 65–72
19. Marcacci M, Kon E, Zaffagnini S, Visani A – Use of autologous grafts for reconstruction of osteochondral defects of the knee. *Orthopaedics* 1999, 22(6): 595–600
20. Morell M, Nagomori J, Mioriachi A. Management of chondral injuries of the knee by osteochondral autogenous transfer (mosaicplasty) – *J Knee Surg* 2002, 15(3): 185–90
21. Menche DS, Vangsness CT Jr, Pitman M, Gross AE, Peterson L – The treatment of isolated articular cartilage lesions in the young individual. *Instr Course Lect* 1998, 47: 505–15
22. Barber FA, Chow JCY – Arthroscopic osteochondral transplantation. *Arthroscopy* 2001, 17(8): 832–5
23. Agneskirchner JD, Brucker P, Burkart A, Imhoff AB – Large osteochondral defects of the femoral condyle: press-fit transplantation of the posterior femoral condyle (MEGA-QATS). *Knee Surg Sports Traumatol Arthrosc* 2002, 10(3): 160–8.
24. Laprel H, Petersen W – Autologous osteochondral transplantation using diamond bone-cutting system (DBCS): 6–12 years' follow-up of 35 patients with osteochondral defects at the knee joint. *Arch Orthop Trauma Surg* 2001, 121: 248–53.