

World Journal of *Clinical Cases*

World J Clin Cases 2022 December 6; 10(34): 12462-12803



Contents

Thrice Monthly Volume 10 Number 34 December 6, 2022

FIELD OF VISION

- 12462** Problematics of neurosurgical service during the COVID-19 pandemic in Slovenia
Munda M, Bosnjak R, Velnar T

MINIREVIEWS

- 12470** Circulating angiotensin converting enzyme 2 and COVID-19
Leowattana W, Leowattana T, Leowattana P
- 12484** Evaluation of gut dysbiosis using serum and fecal bile acid profiles
Monma T, Iwamoto J, Ueda H, Tamamushi M, Kakizaki F, Konishi N, Yara S, Miyazaki T, Hirayama T, Ikegami T, Honda A
- 12494** Pediatric kidney transplantation during the COVID-19 pandemic
Tamura H

ORIGINAL ARTICLE

Clinical and Translational Research

- 12500** *Coptis*, *Pinellia*, and *Scutellaria* as a promising new drug combination for treatment of *Helicobacter pylori* infection
Yu Z, Sheng WD, Yin X, Bin Y

Case Control Study

- 12515** Effects of illness perception on negative emotions and fatigue in chronic rheumatic diseases: Rumination as a possible mediator
Lu Y, Jin X, Feng LW, Tang C, Neo M, Ho RC

Retrospective Study

- 12532** Significance of incidental focal fluorine-18 fluorodeoxyglucose uptake in colon/rectum, thyroid, and prostate: With a brief literature review
Lee H, Hwang KH
- 12543** Follow-up study on ThinPrep cytology test-positive patients in tropical regions
Chen YC, Liang CN, Wang XF, Wang MF, Huang XN, Hu JD
- 12551** Effect of teach-back health education combined with structured psychological nursing on adverse emotion and patient cooperation during ^{99m}Tc -3PRGD2.SPECT/CT
Gong WN, Zhang YH, Niu J, Li XB
- 12559** Nosocomial infection and spread of SARS-CoV-2 infection among hospital staff, patients and caregivers
Cheng CC, Fann LY, Chou YC, Liu CC, Hu HY, Chu D

Observational Study

- 12566** Effectiveness and safety of generic and brand direct acting antivirals for treatment of chronic hepatitis C
Abdulla M, Al Ghareeb AM, Husain HAHY, Mohammed N, Al Qamish J

- 12578** Influence of group B *streptococcus* and vaginal cleanliness on the vaginal microbiome of pregnant women
Liao Q, Zhang XF, Mi X, Jin F, Sun HM, Wang QX

Randomized Controlled Trial

- 12587** Clinical study on tri-tongue acupuncture combined with low-frequency electrical stimulation for treating post-stroke dysarthria
Man B, Li WW, Xu JF, Wang Q

META-ANALYSIS

- 12594** Three-dimensional time-of-flight magnetic resonance angiography combined with high resolution T2-weighted imaging in preoperative evaluation of microvascular decompression
Liang C, Yang L, Zhang BB, Guo SW, Li RC

CASE REPORT

- 12605** Acute cytomegalovirus hepatitis in an immunocompetent patient: A case report
Wang JP, Lin BZ, Lin CL, Chen KY, Lin TJ
- 12610** Long-term results of extended Boari flap technique for management of complete ureteral avulsion: A case report
Zhong MZ, Huang WN, Huang GX, Zhang EP, Gan L
- 12617** Amyloid β -related angiitis of the central nervous system occurring after COVID-19 vaccination: A case report
Kizawa M, Iwasaki Y
- 12623** Pseudoileus caused by primary visceral myopathy in a Han Chinese patient with a rare *MYH11* mutation: A case report
Li N, Song YM, Zhang XD, Zhao XS, He XY, Yu LF, Zou DW
- 12631** Emergent use of tube tip in pharynx technique in "cannot intubate cannot oxygenate" situation: A case report
Lin TC, Lai YW, Wu SH
- 12637** Inflammatory myofibroblastic tumor of the central nervous system: A case report
Su ZJ, Guo ZS, Wan HT, Hong XY
- 12648** Atypical aggressive vertebral hemangioma of the sacrum with postoperative recurrence: A case report
Wang GX, Chen YQ, Wang Y, Gao CP
- 12654** Closed reduction of hip dislocation associated with ipsilateral lower extremity fractures: A case report and review of the literature
Xu Y, Lv M, Yu SQ, Liu GP

- 12665** Repair of a large patellar cartilage defect using human umbilical cord blood-derived mesenchymal stem cells: A case report
Song JS, Hong KT, Song KJ, Kim SJ
- 12671** Abdominal bronchogenic cyst: A rare case report
Li C, Zhang XW, Zhao CA, Liu M
- 12678** Malignant fibrous histiocytoma of the axilla with breast cancer: A case report
Gao N, Yang AQ, Xu HR, Li L
- 12684** Rapid hemostasis of the residual inguinal access sites during endovascular procedures: A case report
Kim H, Lee K, Cho S, Joh JH
- 12690** Formation of granulation tissue on bilateral vocal cords after double-lumen endotracheal intubation: A case report
Xiong XJ, Wang L, Li T
- 12696** Giant cellular leiomyoma in the broad ligament of the uterus: A case report
Yan J, Li Y, Long XY, Li DC, Li SJ
- 12703** Pomolidomide for relapsed/refractory light chain amyloidosis after resistance to both bortezomib and daratumumab: A case report
Li X, Pan XH, Fang Q, Liang Y
- 12711** Ureteral- artificial iliac artery fistula: A case report
Feng T, Zhao X, Zhu L, Chen W, Gao YL, Wei JL
- 12717** How to manage isolated tension non-surgical pneumoperitoneum during bronchoscopy? A case report
Baima YJ, Shi DD, Shi XY, Yang L, Zhang YT, Xiao BS, Wang HY, He HY
- 12726** Amiodarone-induced muscle tremor in an elderly patient: A case report
Zhu XY, Tang XH, Yu H
- 12734** Surgical treatment of Pitt-Hopkins syndrome associated with strabismus and early-onset myopia: Two case reports
Huang Y, Di Y, Zhang XX, Li XY, Fang WY, Qiao T
- 12742** Massive low-grade myxoid liposarcoma of the floor of the mouth: A case report and review of literature
Kugimoto T, Yamagata Y, Ohsako T, Hirai H, Nishii N, Kayamori K, Ikeda T, Harada H
- 12750** Gingival enlargement induced by cyclosporine in Medullary aplasia: A case report
Victory Rodríguez G, Ruiz Gutiérrez ADC, Gómez Sandoval JR, Lomeli Martínez SM
- 12761** Compound heterozygous mutations in PMFBP1 cause acephalic spermatozoa syndrome: A case report
Deng TQ, Xie YL, Pu JB, Xuan J, Li XM
- 12768** Colonic tubular duplication combined with congenital megacolon: A case report
Zhang ZM, Kong S, Gao XX, Jia XH, Zheng CN

- 12775** Perforated duodenal ulcer secondary to deferasirox use in a child successfully managed with laparoscopic drainage: A case report
Alshehri A, Alsinan TA
- 12781** Complication after nipple-areolar complex tattooing performed by a non-medical person: A case report
Byeon JY, Kim TH, Choi HJ
- 12787** Interventional urethral balloon dilatation before endoscopic visual internal urethrotomy for post-traumatic bulbous urethral stricture: A case report
Ha JY, Lee MS
- 12793** Regression of gastric endoscopic submucosal dissection induced polypoid nodular scar after *Helicobacter pylori* eradication: A case report
Jin BC, Ahn AR, Kim SH, Seo SY
- 12799** Congenital absence of the right coronary artery: A case report
Zhu XY, Tang XH

ABOUT COVER

Editorial Board Member of *World Journal of Clinical Cases*, Giuseppe Lanza, MD, MSc, PhD, Associate Professor, Department of Surgery and Medical-Surgical Specialties, University of Catania, Catania 95123, Italy. glanza@oasi.en.it

AIMS AND SCOPE

The primary aim of *World Journal of Clinical Cases* (WJCC, *World J Clin Cases*) is to provide scholars and readers from various fields of clinical medicine with a platform to publish high-quality clinical research articles and communicate their research findings online.

WJCC mainly publishes articles reporting research results and findings obtained in the field of clinical medicine and covering a wide range of topics, including case control studies, retrospective cohort studies, retrospective studies, clinical trials studies, observational studies, prospective studies, randomized controlled trials, randomized clinical trials, systematic reviews, meta-analysis, and case reports.

INDEXING/ABSTRACTING

The WJCC is now abstracted and indexed in Science Citation Index Expanded (SCIE, also known as SciSearch®), Journal Citation Reports/Science Edition, Current Contents®/Clinical Medicine, PubMed, PubMed Central, Scopus, Reference Citation Analysis, China National Knowledge Infrastructure, China Science and Technology Journal Database, and Superstar Journals Database. The 2022 Edition of Journal Citation Reports® cites the 2021 impact factor (IF) for WJCC as 1.534; IF without journal self cites: 1.491; 5-year IF: 1.599; Journal Citation Indicator: 0.28; Ranking: 135 among 172 journals in medicine, general and internal; and Quartile category: Q4. The WJCC's CiteScore for 2021 is 1.2 and Scopus CiteScore rank 2021: General Medicine is 443/826.

RESPONSIBLE EDITORS FOR THIS ISSUE

Production Editor: Si Zhao; Production Department Director: Xu Guo; Editorial Office Director: Jin-Lei Wang.

NAME OF JOURNAL

World Journal of Clinical Cases

ISSN

ISSN 2307-8960 (online)

LAUNCH DATE

April 16, 2013

FREQUENCY

Thrice Monthly

EDITORS-IN-CHIEF

Bao-Gan Peng, Jerzy Tadeusz Chudek, George Kontogeorgos, Maurizio Serati, Ja Hyeon Ku

EDITORIAL BOARD MEMBERS

<https://www.wjnet.com/2307-8960/editorialboard.htm>

PUBLICATION DATE

December 6, 2022

COPYRIGHT

© 2022 Baishideng Publishing Group Inc

INSTRUCTIONS TO AUTHORS

<https://www.wjnet.com/bpg/gerinfo/204>

GUIDELINES FOR ETHICS DOCUMENTS

<https://www.wjnet.com/bpg/GerInfo/287>

GUIDELINES FOR NON-NATIVE SPEAKERS OF ENGLISH

<https://www.wjnet.com/bpg/gerinfo/240>

PUBLICATION ETHICS

<https://www.wjnet.com/bpg/GerInfo/288>

PUBLICATION MISCONDUCT

<https://www.wjnet.com/bpg/gerinfo/208>

ARTICLE PROCESSING CHARGE

<https://www.wjnet.com/bpg/gerinfo/242>

STEPS FOR SUBMITTING MANUSCRIPTS

<https://www.wjnet.com/bpg/GerInfo/239>

ONLINE SUBMISSION

<https://www.f6publishing.com>



Repair of a large patellar cartilage defect using human umbilical cord blood-derived mesenchymal stem cells: A case report

Jun-Seob Song, Ki-Taek Hong, Ki Jeon Song, Seok Jung Kim

Specialty type: Orthopedics

Provenance and peer review:

Unsolicited article; Externally peer reviewed.

Peer-review model: Single blind

Peer-review report's scientific quality classification

Grade A (Excellent): 0

Grade B (Very good): 0

Grade C (Good): C, C

Grade D (Fair): 0

Grade E (Poor): 0

P-Reviewer: Chen C, China; Yang B, China

Received: July 10, 2022

Peer-review started: July 10, 2022

First decision: August 22, 2022

Revised: September 10, 2022

Accepted: November 2, 2022

Article in press: November 2, 2022

Published online: December 6, 2022



Jun-Seob Song, Ki-Taek Hong, Department of Orthopedic Surgery, Gangnam JS Hospital, Seoul 06053, South Korea

Ki Jeon Song, Seok Jung Kim, Department of Orthopedic Surgery, Uijeongbu Street Mary's Hospital, College of Medicine, The Catholic University of Korea, Uijeongbu 11765, Gyeonggi-do, South Korea

Corresponding author: Seok Jung Kim, FRCS, MD, PhD, Director, Full Professor, Department of Orthopedic Surgery, Uijeongbu Street Mary's Hospital, College of Medicine, The Catholic University of Korea, No. 271 Cheonbo-ro, Uijeongbu 11765, Gyeonggi-do, South Korea.

peter@catholic.ac.kr

Abstract

BACKGROUND

Patellar dislocation may cause cartilage defects of various sizes. Large defects commonly require surgical treatment; however, conventional treatments are problematic.

CASE SUMMARY

A 15-year-old male with a large patellar cartilage defect due to patellar dislocation was treated *via* human umbilical cord blood-derived mesenchymal stem cell (hUCB-MSC) implantation. To our knowledge, this is the first report of this treatment for this purpose. The patient recovered well as indicated by good visual analog scale, International Knee Documentation Committee and McMaster Universities Osteoarthritis Index scores. Magnetic resonance imaging showed cartilage regeneration 18 mo postoperatively.

CONCLUSION

Umbilical cord blood-derived hUCB-MSCs may be a useful treatment option for the repair of large patellar cartilage defects.

Key Words: Cartilage defect; Umbilical cord; Mesenchymal stem cells; Patellar dislocation; Magnetic resonance imaging; Case report

©The Author(s) 2022. Published by Baishideng Publishing Group Inc. All rights reserved.

Core Tip: Umbilical cord blood-derived mesenchymal stem cells consist of a unique population of progenitors co-expressing mesenchymal stem cells and neuronal markers capable of instantaneous differentiation. This report is of a 15-year-old male teen with a large patellar cartilage defect due to patellar dislocation who was treated with implantation of human umbilical cord blood-derived mesenchymal stem cells.

Citation: Song JS, Hong KT, Song KJ, Kim SJ. Repair of a large patellar cartilage defect using human umbilical cord blood-derived mesenchymal stem cells: A case report. *World J Clin Cases* 2022; 10(34): 12665-12670

URL: <https://www.wjgnet.com/2307-8960/full/v10/i34/12665.htm>

DOI: <https://dx.doi.org/10.12998/wjcc.v10.i34.12665>

INTRODUCTION

Patellar cartilage defects often accompany acute patellar dislocation[1]. Small cartilage defects can be treated conservatively or *via* microfracture. Large cartilage defects may cause problems, such as anterior knee pain and arthritis, and require cartilage repair treatment.

Treatment of large patellar cartilage defects *via* autologous chondrocyte implantation (ACI) or osteochondral autologous transplantation (OAT) has been reported[1,2]. ACI, a two-step procedure, is time-consuming and expensive, and OAT can cause problems at the harvest site of the osteochondral plug. To avoid these shortcomings, alternative treatment methods, especially those using mesenchymal stem cells (MSCs) have been evaluated recently[3].

We use human umbilical cord blood-derived MSCs (hUCB-MSCs) for cartilage repair. Compared with other MSCs, hUCB-MSCs have better cell activity and do not require invasive procedures for collection. Regardless of the cartilage defect size, the desired amount of the hUCB-MSCs can be prepared at any time[4,5]. To the best of our knowledge, there have been no reports of large patellar cartilage defects treated with hUCB-MSCs. This report presents such a case.

CASE PRESENTATION

Chief complaints

Left knee pain and swelling.

History of present illness

A 15-year-old male had fallen while running the day before.

History of past illness

There is no history of past illness.

Personal and family history

There is no personal and family history.

Physical examination

Swelling and limitation of knee motion.

Laboratory examinations

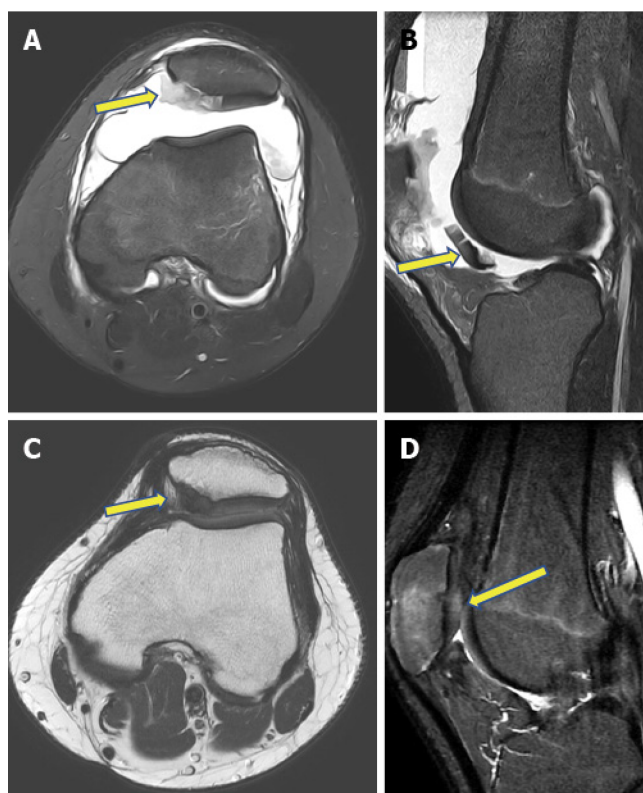
No specific findings.

Imaging examinations

Radiography showed patellar dislocation. Magnetic resonance imaging (MRI) revealed a large amount of hemarthrosis, a medial patellofemoral ligament tear and a 4.92 cm² (2.04 cm × 2.41 cm) patellar cartilage defect (Figure 1A and B).

FINAL DIAGNOSIS

Patellar dislocation with large patellar cartilage defects.



DOI: 10.12998/wjcc.v10.i34.12665 Copyright ©The Author(s) 2022.

Figure 1 Magnetic resonance images. A: T2-weighted, a fat-suppressed axial image showing a cartilage defect (arrow) on the medial side of the patella and patellar dislocation with a medial patellofemoral ligament tear; B: T2-weighted, a fat-suppressed sagittal image showing a large amount of hemarthrosis and detached patellar cartilage (arrow) in the infrapatellar area; C: Proton density axial image showing regeneration of the patellar cartilage (arrow) and a normal patellar position, with the healing of the medial patellofemoral ligament, 18 mo after surgery; D: Proton fat-suppressed sagittal image showing patellar cartilage regeneration (arrow) 18 mo after surgery.

TREATMENT

After routine arthroscopy for loose body removal and joint debridement, a skin incision was made along the medial side of the patella. The cartilage defect site was exposed *via* a 4-cm longitudinal arthrotomy (Figure 2A). Multiple holes were made in the patellar subchondral bone using a 5 mm drill bit (Figure 2B), and CARTISTEM was injected (Figure 3C). Subsequently, medial patellofemoral ligament repair was performed.

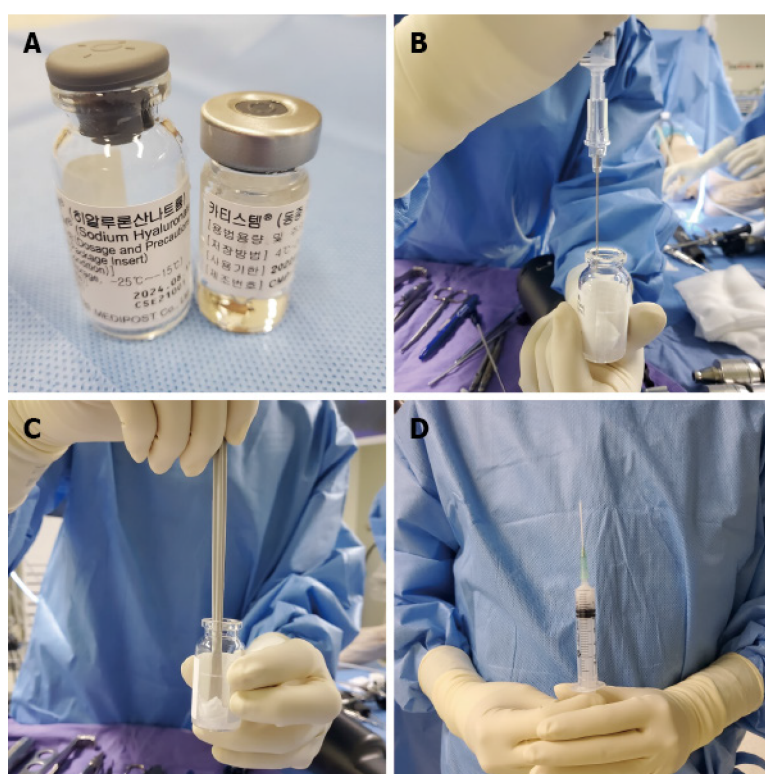
OUTCOME AND FOLLOW-UP

The patient was required to rest while wearing a knee brace for 3 d postoperatively. On postoperative day 4, he began performing a range of motion exercises using a continuous passive motion machine, quadriceps strengthening exercises and ankle pump exercises. On postoperative day 7, full weight-bearing walking with a hinged knee brace was permitted.

Cartilage regeneration was observed on follow-up MRI 2 years postoperatively (Figure 1C and D). Comparison of the International Knee Documentation Committee score, the visual analog scale score, and the McMaster Universities Osteoarthritis Index score before and 2 years after surgery indicated improvement, from 5.7 to 90.8, 8 to 2, and 74 to 3, respectively (Figure 4).

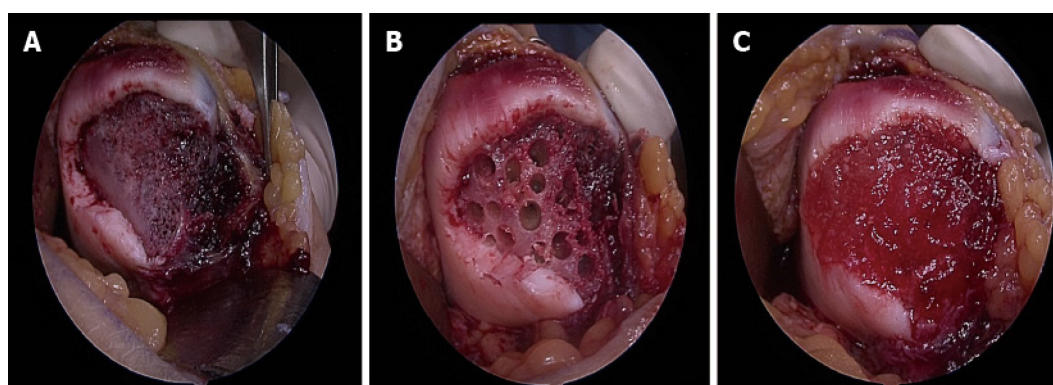
DISCUSSION

Patellar cartilage defects are frequently associated with trauma-induced acute patellar dislocation. In the report by Song *et al* [6], 95% (37/39) of knees with acute patellar dislocation had patellar cartilage defects. The treatment of large patellar cartilage defects is challenging. Using ACI, Vasiliadis *et al* [7] achieved satisfactory results in 92 patients with patellar or trochlear cartilage damage (mean size of the defect: 5.5 cm², average follow-up time: 12.6 years). After treatment, these patients had a high level of



DOI: 10.12998/wjcc.v10.i34.12665 Copyright ©The Author(s) 2022.

Figure 2 Surgical procedures of the patellar defect. A: Exposed large subchondral bone on the medial patellar facet; B: After multiple drillings on the subchondral bone; C: After implantation of the human umbilical cord, blood-derived mesenchymal stem cells into the defect.

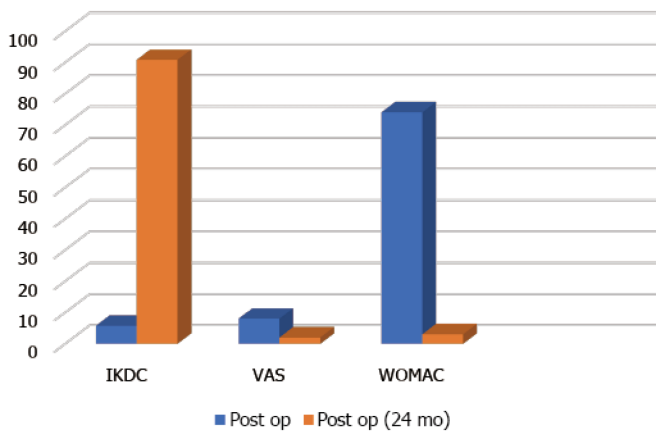


DOI: 10.12998/wjcc.v10.i34.12665 Copyright ©The Author(s) 2022.

Figure 3 Stem cell product preparation. A: The left vial contains hyaluronic acid, and the right vial contains hUCB-MSCs; B: Aspirated hUCB-MSCs are injected into the hyaluronic acid vial; C: The hUCB-MSCs with hyaluronic acid are mixed; D: The mixture of hUCB-MSCs and hyaluronic acid is transferred into a syringe.

activity based on the Tegner score. Gracitelli *et al*[1] reported a survival rate of 78.1% at 5 years and 10 years after osteochondral allograft transplantation in 27 patients (28 knees) with patellar cartilage defects; eight knees (28.6%) showed allograft failure.

Despite their effectiveness, ACI and osteochondral transplantation are not without drawbacks: ACI is performed in two steps and can cause graft hypertrophy, and OAT can negatively impact the osteochondral plug harvest site and cause complications such as osteonecrosis[3]. Many studies have devised methods of restoring cartilage using MSCs to avoid these problems. Although initially extracted from the bone marrow or adipose tissue, MSCs are currently extracted from umbilical cord blood. hUCB-MSCs have several advantages over other types of MSCs. First, hUCB-MSCs are less immunogenic. Owing to the naïve nature of a newborn's immune system, they do not require a close human leukocyte antigen match and thus can escape host immune surveillance. Therefore, they can be used regardless of sex, allergies and blood group. Second, they have a high expansion capacity compared with bone marrow-derived MSCs. Third, as an off-the-shelf product, they are readily



DOI: 10.12998/wjcc.v10.i34.12665 Copyright ©The Author(s) 2022.

Figure 4 Clinical improvement. Visual analog scale, International Knee Documentation Committee (IKDC), visual analog scale (VAS), and McMaster Universities Osteoarthritis Index (WOMAC) scores show clinical improvement 2 years after human umbilical cord blood-derived mesenchymal stem cell implantation.

accessible whenever required[3,5,6].

Treatment of juvenile osteochondral defects, especially large defects, using hUCB-MSCs has been previously reported[3]. Our patient had a large patellar cartilage defect with accompanying acute patellar dislocation. Cartilage regeneration was observed 18 mo after hUCB-MSC implantation, as indicated by MRI findings and clinical scores. To the best of our knowledge, this is the first detailed description of the results of hUCB-MSC treatment of a large patellar cartilage defect with patellar dislocation.

CONCLUSION

hUCB-MSCs are a potential treatment option for large patellar cartilage defects with patellar dislocation. Cultured cell therapy, including stem cells, could be more appropriate for large chondral defects.

FOOTNOTES

Author contributions: Song JS and Song KJ conceived the study and wrote the manuscript; Hong KT participated in its design and coordination and helped to draft the manuscript; Kim SJ analyzed data; All authors read and approved the final manuscript.

Informed consent statement: Informed written consent was obtained from the patient's parents.

Conflict-of-interest statement: All authors report no relevant conflict of interest for this article.

CARE Checklist (2016) statement: The authors have read the CARE Checklist (2016), and the manuscript was prepared and revised according to the CARE Checklist (2016).

Open-Access: This article is an open-access article that was selected by an in-house editor and fully peer-reviewed by external reviewers. It is distributed in accordance with the Creative Commons Attribution NonCommercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <https://creativecommons.org/licenses/by-nc/4.0/>

Country/Territory of origin: South Korea

ORCID number: Jun-Seob Song 0000-0003-3918-4356; Ki-Taek Hong 0000-0001-6330-5301; Seok Jung Kim 0000-0002-9116-8786.

S-Editor: Wu YXJ

L-Editor: Filipodia

P-Editor: Wu YXJ

REFERENCES

- 1 **Gracitelli GC**, Meric G, Pulido PA, Görtz S, De Young AJ, Bugbee WD. Fresh osteochondral allograft transplantation for isolated patellar cartilage injury. *Am J Sports Med* 2015; **43**: 879-884 [PMID: [25596614](#) DOI: [10.1177/0363546514564144](#)]
- 2 **Nomura E**, Inoue M, Kurimura M. Chondral and osteochondral injuries associated with acute patellar dislocation. *Arthroscopy* 2003; **19**: 717-721 [DOI: [10.1016/S0749-8063\(03\)00401-8](#)]
- 3 **Park YB**, Song M, Lee CH, Kim JA, Ha CW. Cartilage repair by human umbilical cord blood-derived mesenchymal stem cells with different hydrogels in a rat model. *J Orthop Res* 2015; **33**: 1580-1586 [PMID: [26019012](#) DOI: [10.1002/jor.22950](#)]
- 4 **Song JS**, Hong KT, Kim NM, Jung JY, Park HS, Chun YS, Kim SJ. Cartilage regeneration in osteoarthritic knees treated with distal femoral osteotomy and intra-lesional implantation of allogenic human umbilical cord blood-derived mesenchymal stem cells: A report of two cases. *Knee* 2019; **26**: 1445-1450 [PMID: [31443940](#) DOI: [10.1016/j.knee.2019.07.017](#)]
- 5 **Song JS**, Hong KT, Kim NM, Jung JY, Park HS, Kim YC, Shetty AA, Kim SJ. Allogenic umbilical cord blood-derived mesenchymal stem cells implantation for the treatment of juvenile osteochondritis dissecans of the knee. *J Clin Orthop Trauma* 2019; **10**: S20-S25 [PMID: [31700204](#) DOI: [10.1016/j.jcot.2019.03.025](#)]
- 6 **Song JS**, Hong KT, Kim NM, Jung JY, Park HS, Lee SH, Cho YJ, Kim SJ. Implantation of allogenic umbilical cord blood-derived mesenchymal stem cells improves knee osteoarthritis outcomes: Two-year follow-up. *Regen Ther* 2020; **14**: 32-39 [PMID: [31988992](#) DOI: [10.1016/j.reth.2019.10.003](#)]
- 7 **Vasiliadis HS**, Lindahl A, Georgoulis AD, Peterson L. Malalignment and cartilage lesions in the patellofemoral joint treated with autologous chondrocyte implantation. *Knee Surg Sports Traumatol Arthrosc* 2011; **19**: 452-457 [PMID: [20845030](#) DOI: [10.1007/s00167-010-1267-1](#)]



Published by **Baishideng Publishing Group Inc**
7041 Koll Center Parkway, Suite 160, Pleasanton, CA 94566, USA

Telephone: +1-925-3991568

E-mail: bpgoffice@wjgnet.com

Help Desk: <https://www.f6publishing.com/helpdesk>

<https://www.wjgnet.com>

