Medical Coverage Policy | Osteochondral Autologous Chrondrocyte Implantation for Focal Articular Cartilage Lesions

EFFECTIVE DATE: 05|20|2008
POLICY LAST UPDATED: 10|15|2019

OVERVIEW

A variety of procedures are being developed to resurface articular cartilage defects. Autologous chondrocyte implantation (ACI) involves harvesting chondrocytes from healthy tissue, expanding the cells in vitro, and implanting the expanded cells into the chondral defect. Second- and third-generation techniques include combinations of autologous chondrocytes, scaffolds, and growth factors.

MEDICAL CRITERIA

Not applicable

PRIOR AUTHORIZATION

Prior Authorization is not required

POLICY STATEMENT

BlueCHiP for Medicare

Allografting

Osteochondral allografting is covered as a technique to repair full-thickness chondral defects of the knee, large (area >1.5 cm2) or cystic (volume >3.0 cm3) osteochondral lesions of the talus or osteochondral lesions of the talus when autografting would be inadequate due to lesion size, depth or location.

Osteochondral allografting for all other joints is not covered as the evidence is insufficient to determine the effects of the technology on health outcomes.

Autografting

Osteochondral autografting, using one or more cores of osteochondral tissue, is covered for full thickness cartilage defects of the knee or osteochondral lesions of the talus.

Osteochondral autografting for all other joints is not covered as the evidence is insufficient to determine the effects of the technology on health outcomes.

Autologous minced or particulated cartilage

Treatment of focal articular cartilage lesions with autologous minced or particulated cartilage is considered not covered as the evidence is insufficient to determine the effects of the technology on health outcomes.

Commercial Products

Osteochondral allografting may be considered **medically necessary** as a technique to repair full-thickness chondral defects of the knee, large (area >1.5 cm2) or cystic (volume >3.0 cm3) osteochondral lesions of the talus or osteochondral lesions of the talus when autografting would be inadequate due to lesion size, depth or location.

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COVERAGE

Benefits may vary between groups and contracts. Please refer to the appropriate Benefit Booklet, Evidence of Coverage or Subscriber Agreement for applicable surgery benefits/coverage.

BACKGROUND

For individuals who have focal articular cartilage lesion(s) of the weight-bearing surface of the femoral condyles, trochlea, or patella who receive ACI, the evidence includes systematic reviews, randomized controlled trials, and prospective observational studies. Relevant outcomes are symptoms, change in disease status, morbid events, functional outcomes, and quality of life. There is a large body of evidence on ACI for the treatment of focal articular cartilage lesions of the knee. For large lesions, ACI results in better outcomes than microfracture, particularly in the long term. In addition, there is a limit to the size of lesions that can be treated with osteochondral autograft transfer, due to a limit on the number of osteochondral cores that can be safely harvested. As a result, ACI has become the established treatment for large articular cartilage lesions in the knee. In 2017, first-generation ACI with a collagen cover was phased out and replaced with an ACI preparation that seeds the chondrocytes onto a bioresorbable collagen sponge. Although the implantation procedure for this second-generation ACI is less technically demanding, studies to date have not shown improved outcomes compared with first-generation ACI. Some evidence has suggested an increase in hypertrophy (overgrowth) of the new implant that may exceed that of the collagen membrane covered implant. Long-term studies with a larger number of patients will be needed to determine whether this hypertrophy impacts graft survival. Based on mid-term outcomes that approximate those of first-generation ACI and the lack of alternatives, second-generation ACI may be considered an option for large disabling full-thickness cartilage lesions of the knee. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

It is typically done on individuals with the following:

- Adolescent patients should be skeletally mature with documented closure of growth plates (eg, ≥15 years). Adult patients should be too young to be considered an appropriate candidate for total knee arthroplasty or other reconstructive knee surgery (eg, <55 years)
- Focal, full-thickness (grade III or IV) unipolar lesions of the weight-bearing surface of the femoral condyles, trochlea, or patella at least 1.5 cm2 in size
- Documented minimal to absent degenerative changes in the surrounding articular cartilage (Outerbridge grade II or less), and normal-appearing hyaline cartilage surrounding the border of the defect
- Normal knee biomechanics or alignment and stability achieved concurrently with autologous chondrocyte implantation.

For individuals who have focal articular cartilage lesions of joints other than the knee who receive ACI, the evidence includes systematic reviews of case series. Relevant outcomes are symptoms, change in disease status, morbid events, functional outcomes, and quality of life. The greatest amount of literature is for ACI of the talus. Comparative trials are needed to determine whether ACI improves outcomes for lesions in joints other than the knee. The evidence is insufficient to determine the effects of the technology on health outcomes.

Clinical input has been requested on multiple occasions, obtained most recently in 2015, on the use of ACI in the patella. Prior input supported use for localized chondral defects when other treatments have not been successful. The most recent input was generally supportive of the use of ACI for large patellar lesions, although the degree of support varied. Reviewers indicated that outcomes were improved when realignment procedures are performed concurrently with ACI of the patella and that success rates are lower when using ACI after a prior microfracture. Most reviewers recommended that a prior surgical procedure not be required for lesions greater than 4 cm2

CODING

Blue CHiP for Medicare and Commercial Products:

The following surgery codes are considered medically necessary when filed with an approved diagnosis.

27415 Osteochondral allograft, knee, open
27416 Osteochondral autograft(s), knee, open (eg, mosaicplasty) (includes harvesting of autograft[s])
29866 Arthroscopy, knee, surgical; osteochondral autograft(s) (eg, mosaicplasty) includes harvesting of the autograft[s
29867 Arthroscopy, knee, surgical; osteochondral allograft (eg, mosaicplasty)

The following code is considered not covered for BlueCHiP for Medicare and not medically necessary for Commercial Products:

28446 Open osteochondral autograft, talus (includes obtaining graft[s])

Approved diagnosis

M17.0-M17.12	Osteoarthritis of knee primary code range
M17.4-M17.5	Osteoarthritis of knee secondary code range
M17.9	Osteoarthritis of knee unspecified code range
M12.561-M12.569	Traumatic arthropathy, knee code range
M23.90-M23.92	Unspecified, internal derangement of knee code range
M23.8x1-M23.8x9	Other internal derangement of knee code range
M25.861-M25.869	Other specified joint disorder, knee code range
M93.261-M93.269	Osteochondritis dissecans knee code range
M89.8x6	Other specified disorder of bone, lower leg
M94.8x6	Other specified disorder of cartilage, lower leg
S89.90-S89.92	Unspecified injury of lower leg code range
S99.811-S99.929	Other specified injures of ankle and foot code range

RELATED POLICIES

None

PUBLISHED

Provider Update December 2019
Provider Update, November 2018
Provider Update January 2017
Provider Update April 2015
Provider Update Sept 2013
Provider Update June 2012

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