Name of Policy:  
Arthroscopic Debridement and Lavage as Treatment for Osteoarthritis of the Knee

Policy #: 391       Latest Review Date: December 2013  
Category: Surgery      Policy Grade: B

Background/Definitions:
As a general rule, benefits are payable under Blue Cross and Blue Shield of Alabama health plans only in cases of medical necessity and only if services or supplies are not investigational, provided the customer group contracts have such coverage.

The following Association Technology Evaluation Criteria must be met for a service/supply to be considered for coverage:

1. The technology must have final approval from the appropriate government regulatory bodies;  
2. The scientific evidence must permit conclusions concerning the effect of the technology on health outcomes;  
3. The technology must improve the net health outcome;  
4. The technology must be as beneficial as any established alternatives;  
5. The improvement must be attainable outside the investigational setting.

Medical Necessity means that health care services (e.g., procedures, treatments, supplies, devices, equipment, facilities or drugs) that a physician, exercising prudent clinical judgment, would provide to a patient for the purpose of preventing, evaluating, diagnosing or treating an illness, injury or disease or its symptoms, and that are:

1. In accordance with generally accepted standards of medical practice; and  
2. Clinically appropriate in terms of type, frequency, extent, site and duration and considered effective for the patient’s illness, injury or disease; and  
3. Not primarily for the convenience of the patient, physician or other health care provider; and  
4. Not more costly than an alternative service or sequence of services at least as likely to produce equivalent therapeutic or diagnostic results as to the diagnosis or treatment of that patient’s illness, injury or disease.
**Description of Procedure or Service:**

Arthroscopic lavage and cartilage debridement are operative treatments for osteoarthritis (OA). Lavage is a procedure in which intra-articular fluid is aspirated and the joint is washed out, removing inflammatory mediators, debris, or small loose bodies from the osteoarthritic knee. Arterial debridement involves removal of cartilage or meniscal fragments, but also can include cartilage abrasion, excision of osteophytes, and synovectomy. Debridement is intended to improve symptoms and joint function in patients with mechanical symptoms such as locking or catching of the knee. Because lavage and debridement are often performed at the same time, it is difficult to attribute the success or failure of arthroscopy to a specific procedure.

Osteoarthritis (OA) affects about 21 million people in the United States. By age 65 years, the majority of the population has radiographic evidence of osteoarthritis and 11% have symptomatic OA of the knee. The diagnosis of osteoarthritis is established using a combination of clinical information derived from history, physical examination, radiologic imaging, and laboratory evaluation. An algorithm of diagnostic criteria for OA of the knee has been proposed by the American College of Rheumatology (ACR). The diagnosis of OA of the knee is defined as presenting with pain and meeting at least five of the following criteria:

- Patient older than 50 years of age
- Less than 30 minutes of morning stiffness
- Crepitus (noisy, grating sound) on active motion
- Bony tenderness
- Bony enlargement
- No palpable warmth of synovium
- Erythrocyte sedimentation rate (ESR) <40 mm/hr
- Rheumatoid factor <1:40
- Noninflammatory synovial fluid

The presence of clinical symptoms of OA does not always correlate well with the degree of abnormality seen radiographically. It has been noted that approximately 40% of patients who have severe findings on x-rays report no symptoms; conversely, patients with clinical symptoms may show no significant radiological changes.

Treatment for OA of the knee aims to alleviate pain and improve function to mitigate reduction in activity. However, most treatments do not modify the natural history or progression of OA, and thus are not considered curative. Nonsurgical modalities that are used include exercise; weight loss; various supportive devices; acetaminophen or nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen; nutritional supplements (glucosamine and chondroitin); and intra-articular visco-supplements. Corticosteroid injection may be considered when relief from NSAIDs is insufficient or the patient is at risk from gastrointestinal adverse effects. If symptom relief is inadequate with conservative measures, invasive treatments may be considered. Operative treatments for symptomatic OA of the knee include arthroscopic lavage and cartilage debridement, osteotomy, and ultimately total joint arthroplasty. Surgical procedures intended to repair or restore articular cartilage in the knee, e.g., abrasion arthroplasty, microfracture techniques, and autologous chondrocyte implantation, are appropriate only for younger patients with focal cartilage defects secondary to injury and are not addressed in this policy.
Policy:

Arthroscopic debridement meets Blue Cross and Blue Shield of Alabama’s medical criteria for coverage when preoperative imaging indicates that specific anatomic lesions other than osteoarthritis, e.g., large meniscal tears, loose bodies, are the cause of the patient’s symptoms regardless of the presence of osteoarthritis.

Arthroscopic debridement and/or lavage do not meet Blue Cross and Blue Shield of Alabama’s medical criteria for coverage for all other treatments of osteoarthritis of the knee.

Blue Cross and Blue Shield of Alabama does not approve or deny procedures, services, testing, or equipment for our members. Our decisions concern coverage only. The decision of whether or not to have a certain test, treatment or procedure is one made between the physician and his/her patient. Blue Cross and Blue Shield of Alabama administers benefits based on the members' contract and corporate medical policies. Physicians should always exercise their best medical judgment in providing the care they feel is most appropriate for their patients. Needed care should not be delayed or refused because of a coverage determination.

Key Points:

Arthroscopic debridement and lavage have been used extensively for the treatment of osteoarthritis (OA) of the knee. Because lavage and debridement are often performed at the same time, it is difficult to attribute the success or failure of arthroscopy to a specific procedure.

Evidence of efficacy had for many years consisted of reports of case series or controlled trials with methodological problems. In 2002, Moseley et al published a randomized placebo-controlled trial (RCT) to evaluate the efficacy of arthroscopy for OA of the knee. A total of 180 patients were randomized to debridement (without abrasion or microfracture), lavage, or placebo surgery. Placebo surgery involved a skin incision and simulated debridement without insertion of the arthroscope. Patients and assessors were blinded to treatment group. Neither treatment group reported less pain or better function than the placebo group at any time point during the two-year follow-up.

A systematic review produced in 2007 for the Agency for Healthcare Research and Quality (AHRQ) by the Blue Cross and Blue Shield Association Technology Evaluation Center Evidence-based Practice Center noted that generalizability of study results was limited by the lack of detail provided regarding the patient sample, use of a single surgeon, and enrollment of patients at a single Veterans Affairs Medical Center. The report concluded that “the existing evidence does not definitively show that arthroscopic lavage with or without debridement is no more effective than placebo. However, additional placebo-controlled RCTs showing clinically significant advantage for arthroscopy would be necessary to refute the Moseley results, which show equivalence between placebo and arthroscopy.”

A 2008 Cochrane review of arthroscopic debridement for knee OA assessed three RCTs, including the study by Moseley et al and concluded that there is gold-level evidence that arthroscopic debridement has no benefit for undisriminated OA (mechanical or inflammatory causes). The other two studies included in the Cochrane review were of lower methodologic
quality and compared arthroscopy with lavage. In one of the reviewed studies Chang et al compared arthroscopy with closed needle lavage and found no significant between-group differences in pain, self-reported and observed functional status, and patient and physician global assessments. This study was small (32 subjects) with only three months of follow-up. The second study was a randomized trial of 76 knees, 40 laparoscopic debridement and 36 washouts, with mean follow-up time of 4.5 years and 4.3 years, respectively. At one year, 32 of the debridement group and five of the washout group were pain-free. At five years, 19 of the survivors in the debridement group and three of the 26 in the washout group were free of pain. This study was noted by the Cochrane review to be at high risk of bias; specifically, outcome assessors were neither independent nor blinded, and pain was measured as success when absent and failure when present.

An updated systematic review of the evidence for joint lavage for OA of the knee was published by the Cochrane Musculoskeletal Group in May 2010 and was based on the literature to April 2009. This review included seven trials with 567 patients. The Cochrane review did not include the study described below by Kirkley et al, since that trial focused on debridement. The authors concluded that joint lavage does not result in a benefit for patients with knee OA for pain relief or improvement in function.

In 2008, Kirkley et al published a single-center RCT comparing surgical lavage and arthroscopic debridement (without abrasion or microfracture) together with optimized physical and medical therapy, or physical and medical therapy alone. Patients with more than five degrees of misalignment were excluded. Both men and women were enrolled. Seven experienced arthroscopists performed lavage, debridement, or both, at their discretion. Between January 1999 and August 2005, 277 patients were assessed for eligibility; 58 were not eligible (most [38%] because of substantial misalignment), and 31 declined participation. Ninety-two patients were randomly assigned to the surgery arm, and 86 were assigned to physical and medical therapy alone. Ten withdrew consent (two in the surgery group and eight in the control group). Six in the surgery group did not undergo surgery. Data from these patients was included in the intent to treat analysis. The primary outcome was total Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) score. Secondary outcomes included the Short Form-36 (SF-36) Physical Component Summary score. After two years, the mean (SD) WOMAC score for the surgery group was 874 (624), as compared with 897 (583) for the control group (absolute difference [surgery-group score minus control-group score], -23 (605); 95% confidence interval [CI], -208 to 161; p=0.22). The SF-36 Physical Component Summary scores were 37.0 and 37.2, respectively (absolute difference, -0.2; 95% CI, -3.6 to 3.2; p=0.93). Analyses of WOMAC scores at interim visits and other secondary outcomes also failed to show superiority of surgery. Prespecified analyses of subgroups were performed for patients with less severe disease (Kellgren-Lawrence grade 2) at baseline and patients with mechanical symptoms of catching or locking, and no significant difference between treatment groups was found. A post hoc analysis of patients with more severe radiographic disease (Kellgren-Lawrence Grade 3 or 4) also found no benefit of surgery. Patients suspected of having meniscal (“bucket handle”) tears were excluded from the study.
A 2013 meta-analysis found no additional randomized trials on arthroscopic joint debridement for knee osteoarthritis. Meta-analysis of studies with follow-up of two years or more found a conversion rate to joint replacement of 6.1% at one year, 16.8% at two years, 21.7% at three years, and 34.1% at four years. Data were not available on conversion to joint replacement in patients treated conservatively. This systematic review is limited by the inclusion of poor quality studies (Level IV, uncontrolled and retrospective) and heterogeneity in study results. In addition, the definition of joint debridement in this meta-analysis included smoothing of cartilage lesions, removal of loose bodies, meniscectomy, synovectomy, and ligament release. The debridement could be combined with other types of treatment, including osteotomies or cartilage-restoring techniques (drilling, abrasion, micro-fracturing, and autologous chondrocyte implantation), making it difficult to isolate the specific impact of debridement on outcomes. Thus, interpretation of this meta-analysis is limited.

In an editorial, Marx comments that OA is not a contraindication to arthroscopic surgery, and it “remains appropriate in patients with arthritis in which osteoarthritis is not believed to be the primary cause of pain.”

Summary
Arthroscopic lavage and cartilage debridement are operative treatments for OA that may be performed separately or at the same time. The evidence base includes two large well-designed controlled trials, one comparing arthroscopic debridement with lavage and placebo, and the other comparing arthroscopy and lavage along with medical and physical therapy to medical and physical therapy alone. These studies provide sufficient evidence to conclude that arthroscopic debridement and lavage separately or together, do not improve symptoms of OA of the knee and, therefore, are considered not medically necessary.

Practice Guidelines and Position Statements
The Osteoarthritis Research Society International (OARSI) convened 16 experts from primary care, rheumatology, orthopedics, and evidence-based medicine from six countries, including the United States, to develop consensus recommendations for management of hip and knee OA. OARSI concluded that “the roles of joint lavage and arthroscopic debridement are controversial and that, although some studies have demonstrated short-term symptom relief, others suggest that improvement in symptoms could be attributable to a placebo effect.”

Guidelines from the American Academy of Orthopaedic Surgeons (AAOS) in 2013 provide a strong recommendation against performing arthroscopic debridement and lavage: “We cannot recommend performing arthroscopy with lavage and/or debridement in patients with a primary diagnosis of symptomatic osteoarthritis of the knee.” A strong recommendation means that the quality of the supporting evidence is high and that practitioners should follow a strong recommendation unless a clear and compelling rationale for an alternative approach is present. Based on moderate evidence, the AAOS “cannot suggest that the practitioner use needle lavage for patients with symptomatic osteoarthritis of the knee”.

Key Words:
Arthroscopic debridement, lavage, osteoarthritis, knee, arthroscopic lavage
Approved by Governing Bodies:
Not applicable

Benefit Application:
Coverage is subject to member’s specific benefits. Group specific policy will supersede this policy when applicable.

ITS: Home Policy provisions apply
FEP: Special benefit consideration may apply. Refer to member’s benefit plan.
Pre-certification requirements: Not applicable

Coding:
CPT Codes:

29871  Arthroscopy, knee, surgical; for infection, lavage and drainage
29874  ;for removal of loose body or foreign body (e.g., osteochondritis dissecans fragmentation, chondral fragmentation)
29877  ;debridement/shaving of articular cartilage (chondroplasty)

References:


**Policy History:**
Medical Policy Group, September 2009 (3)
Medical Policy Administration Committee, September 2009
Available for comment September 18-November 2, 2009
Medical Policy Group, December 2010 (1): Key Points and references updated
Medical Policy Group, March 2012 (3): Updated References
Medical Policy Panel, December 2012
Medical Policy Panel, December 2013
Medical Policy Group, January 2014 (3): Updated Key Points and References; no change in policy statement

This medical policy is not an authorization, certification, explanation of benefits, or a contract. Eligibility and benefits are determined on a case-by-case basis according to the terms of the member’s plan in effect as of the date services are rendered. All medical policies are based on (i) research of current medical literature and (ii) review of common medical practices in the treatment and diagnosis of disease as of the date hereof. Physicians and other providers are solely responsible for all aspects of medical care and treatment, including the type, quality, and levels of care and treatment.

This policy is intended to be used for adjudication of claims (including pre-admission certification, pre-determinations, and pre-procedure review) in Blue Cross and Blue Shield’s administration of plan contracts.