BlueCross BlueShield of Alabama

Name of Blue Advantage Policy:

Joint Manipulation under Anesthesia (Excluding Spine)

Policy #: 345
Category: Surgery

Latest Review Date: November 2020
Policy Grade: B

Background:

Blue Advantage *medical policy does not conflict with Local Coverage Determinations (LCDs), Local Medical Review Policies (LMRPs) or National Coverage Determinations (NCDs) or with coverage provisions in Medicare manuals, instructions or operational policy letters. In order to be covered by Blue Advantage the service shall be reasonable and necessary under Title XVIII of the Social Security Act, Section 1862(a)(1)(A). The service is considered reasonable and necessary if it is determined that the service is:*

1. *Safe and effective;*
2. *Not experimental or investigational*;*
3. *Appropriate, including duration and frequency that is considered appropriate for the service, in terms of whether it is:*
   - *Furnished in accordance with accepted standards of medical practice for the diagnosis or treatment of the patient's condition or to improve the function of a malformed body member;*
   - *Furnished in a setting appropriate to the patient's medical needs and condition;*
   - *Ordered and furnished by qualified personnel;*
   - *One that meets, but does not exceed, the patient's medical need; and*
   - *At least as beneficial as an existing and available medically appropriate alternative.*

Routine costs of qualifying clinical trial services with dates of service on or after September 19, 2000 which meet the requirements of the Clinical Trials NCD are considered reasonable and necessary by Medicare. Providers should bill* ***Original Medicare* *for covered services that are related to* ***clinical trials*** *that meet Medicare requirements (Refer to Medicare National Coverage Determinations Manual, Chapter 1, Section 310 and Medicare Claims Processing Manual Chapter 32, Sections 69.0-69.11).*

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Description of Procedure or Service:

Manipulation under anesthesia (MUA) consists of a series of mobilization, stretching, and traction procedures performed while the patient receives anesthesia (usually general anesthesia or moderate sedation).

Manipulation is intended to break up fibrous and scar tissue to relieve pain and improve range of motion. Anesthesia or sedation is used to reduce pain, spasm, and reflex muscle guarding that may interfere with the delivery of therapies and to allow the therapist to break up joint and soft tissue adhesions with less force than would be required to overcome patient resistance or apprehension. MUA is generally performed with an anesthesiologist in attendance. MUA is an accepted treatment for isolated joint conditions, such as arthrofibrosis of the knee and adhesive capsulitis. It is also used to treat (reduce) fractures (e.g., long bones) and dislocations.

Because the patient's protective reflex mechanism is absent under anesthesia, proponents contend it is less difficult to separate and move the joint. The physician performs a combination of short manipulations, passive stretches and maneuvers to break up fibrous and scar tissue around the joint area. This manipulation typically includes a high velocity thrust (i.e., a technique that adjusts the joints rapidly), which may be followed by a popping or snapping sound.

In a less frequently used technique, manipulation under anesthesia (MUA) may be accompanied by fluoroscopically-guided intra-articular injections with corticosteroid agents to reduce inflammation. This procedure is referred to as manipulation under joint anesthesia/analgesia (MUJA).

Policy:

Blue Advantage will treat **joint manipulation under anesthesia** as a **covered** benefit for the following indications:

- Treatment of frozen shoulder (adhesive capsulitis); when there is failure of conservative medical management, including medications with or without articular injections, home exercise programs and physical therapy
- Treatment of arthrofibrosis of knee following total knee arthroplasty, knee surgery, or fracture in persons having less than 90 degree range of motion, six or more weeks status post-surgery or traumatic event;
- Treatment of complete joint dislocations or to set fractures.
- Treatment status-post surgery or in conjunction with pin placement will be reviewed individually for other joints, i.e., fingers or toes.

MUA provided for the above indications usually consist of a single treatment session involving an isolated joint. Repeat treatment sessions or multiple joint manipulations under anesthesia are subject to medical necessity review.

Blue Advantage will treat **joint manipulation under anesthesia** as a **non-covered** benefit for the treatment of other disorders of joints (e.g., pelvis, hip, ankle, elbow, wrist, toe, temporomandibular joint, and finger) or for the treatment of acute or chronic pain conditions.

Blue Advantage will treat **manipulation of joints under anesthesia involving serial treatment sessions** as a **non-covered** benefit.

Blue Advantage will treat **manipulation of multiple joints under anesthesia** as a **non-covered** benefit.

For manipulation of spine under anesthesia refer to Medical Policy #154- Manipulation under Anesthesia for Treatment of Chronic Spinal or Pelvic Pain.

Blue Advantage 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 Advantage administers benefits based on the members' contract and 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:

Adhesive Capsulitis

According to Dias, et al (2005), manipulation under anesthesia (MUA) has been used for refractory cases of frozen shoulder (adhesive capsulitis). A systematic review in BMJ Clinical Evidence by Speed (2006) found that MUA plus intra-articular injection is "likely to be beneficial" for persons with frozen shoulder. The conclusions were based upon the results of two randomized controlled clinical trials. One randomized controlled clinical trial (n = 30) found that, in people with adhesive capsulitis, manipulation under anesthesia plus intra-articular hydrocortisone injection increased recovery rates compared with intra-articular hydrocortisone injection alone at three months. Another, weaker randomized controlled clinical trial (n =98), Hamdan and Al Essa, 2003, found limited evidence that more people having manipulation under anesthesia plus intra-articular saline injection than having manipulation alone or manipulation plus intra-articular injection of methylprednisolone had improvements in range of movement, pain relief, and return to normal activities.

Quraishi, et al (2007), assessed the outcome of MUA and hydrodilatation as treatments for adhesive capsulitis. A total of 36 patients (38 shoulders) were randomized to receive either method, with all patients being treated in stage II of the disease process. The mean age of the patients was 55.2 years (44 to 70) and the mean duration of symptoms was 33.7 weeks (12 to 76). A total of 18 shoulders (17 patients) received MUA and 20 (19 patients) received hydrodilatation. There were three insulin-dependent diabetics in each group. The mean visual analog score (VAS) in the MUA group was 5.7 (3 to 8.5; n = 18) before treatment, 4.7 (0 to 8.5; n = 16) at two months (paired t-test p = 0.02), and 2.7 (0 to 9; n = 160 at six months (paired t-test, p = 0.0006). The mean score in the hydrodilatation group was 6.1 (4 to 10; n = 20) before treatment, 2.4 (0 to 8; n = 18) at two months (paired t-test, p = 0.001), and 1.7 (0 to 7; n = 18) at six months (paired t-test, p = 0.0006). The VAS in the hydrodilatation group were significantly better than those in the MUA group over the six-month follow-up period ($p < 0.0001$). The mean constant score in those manipulated was 36 (26 to 66) before treatment, 58.5 (24 to 90) at two

months (paired t-test, p = 0.0004) and 65.9 (28 to 92) at six months (paired t-test, p = 0.0005). The Constant scores in the hydrodilatation group were significantly better than those in the MUA group over the six-month period of follow-up (p= 0.02). The range of motion improved in all patients over the six months, with no difference between the groups being noted. At the final follow-up, 94% of patients (17 of 18) were satisfied or very satisfied after hydrodilatation compared with 81% (13 of 16) of those who received MUA.

Kivimaki et al (2007) examined the effect of MUA in patients with frozen shoulder. Three hospitals performed a blinded randomized trial with a one-year follow-up. A total of 125 patients with clinically verified frozen shoulder were randomly assigned to the manipulation group (n = 65) or control group (n = 60). Both the intervention group and the control group were instructed in specific therapeutic exercises by physiotherapists. Clinical data were gathered at baseline and at six weeks and 3, 6, and 12 months after randomization. The two groups did not differ at any time of the follow-up in terms of shoulder pain or working ability. Small differences in the range of motion were detected favoring the manipulation group. Perceived shoulder pain decreased during follow-up equally in the two groups, and at one year after randomization, only slight pain remained. Manipulation under anesthesia does not add effectiveness to an exercise program performed by patients.

Flannery, et al (2007), examined the influence of timing of MUA for adhesive capsulitis of the shoulder on the long-term outcome. A total of 180 consecutive patients with a diagnosis of adhesive capsulitis according to Codman's criteria were selected from a shoulder surgery database; 145 were available for follow-up after a mean period of 62 months (range of 12 to 125). All patients underwent MUA with intra-articular steroid injection. A statistically significant improvement in range of movement, function (Oxford Shoulder Score) (OSS) and VAS was obtained following manipulation. Ninety percent of the 145 patients who successfully completed the study were satisfied with the procedure; 89% indicated that they would choose the same procedure again if the same problem arose in the opposite shoulder. Eighty-three percent of the patients had MUA performed less than nine months (late MUA). Patients who had early intervention had a significantly better Oxford Shoulder Score at final follow-up; mobility and pain were also letter than in the late MUA group, but not significantly.

Arthrofibrosis of the Knee

Manipulation under anesthesia has also been used to treat fibroarthrosis following total knee replacement. Following total knee arthroplasty, some patients who fail to achieve greater than 90 degrees of flexion in the early perioperative period may be considered candidates for MUA of the knee. Manipulation under anesthesia is indicated in total knee arthroplasty having less than 90 degrees range of motion after six weeks, with no progression or regression in range of motion.

Keating, et al (2007), assessed the outcomes of manipulation following total knee arthroplasty. One hundred and thirteen knees in 90 patients underwent manipulation for post-operative flexion of ≥ 90 degrees at a mean of 10 weeks after surgery. Eight-one (90%) of the 90 patients achieved improvement of ultimate knee flexion following manipulation. The average flexion was 102 degrees prior to total knee arthroplasty, 111 degrees following skin closure, and 70 degrees before manipulation. The average improvement in flexion from the measurement made before manipulation to that recorded at the five-year follow-up was 35 degrees (p< 0.0001). The

investigators reported that there was no significant difference in the mean improvement in flexion when patients who had manipulation within 12 weeks post-operatively were compared with those who had manipulation more than 12 weeks post-operatively. Patients who eventually underwent manipulation had significantly lower pre-operative Knee Society pain scores (more pain) than those who had not had manipulation ($p = 0.0027$). The investigators concluded that manipulation generally increases ultimate flexion following total knee arthroplasty.

Fracture and/or Dislocation
MUA is also considered a well-established and successful treatment for acute/traumatic dislocations. It is typically performed with surgical repair.

Postoperative/Post-traumatic Arthrofibrosis of the Elbow
Arthrofibrosis of the elbow often occurs following injury (e.g., operative, fracture). The elbow becomes stiff as a result of soft-tissue contracture of the ligaments, muscles and/or tendons. Early management generally involves bracing and splints (Araghi, et al, 2010). Manipulation under anesthesia may be recommended when there is failure to progress improve and progress following the use of bracing. Operative release may be considered a treatment option depending on the cause of the contracture, the presence of pain or other symptoms, and decrease in functional level.

Published evidence in the peer reviewed scientific literature supporting the safety and effectiveness of using manipulation under anesthesia of the elbow is limited to retrospective case series, involve small sample populations and lack control groups. Few studies lend support to clinical effectiveness for the treatment of joint stiffness/fibrosis when other conservative measures, such as bracing and splinting, have failed to improve range of motion. In addition, evidence-based clinical practice guidelines supporting MUA for arthrofibrosis of the elbow are not available. There is insufficient evidence in the peer-reviewed published literature and lack of consensus among professional societies to support the effectiveness of MUA as treatment for arthrofibrosis of the elbow.

Summary of Evidence
Evidence supporting the use of MUA for management of pain conditions involving other major joints, multiple body joints or whole body MUA, such as the hip, ankle, elbow, and wrist was not found in the medical literature. Due to insufficient evidence, conclusions cannot be made regarding the clinical utility or safety and efficacy of MUA involving other joints or multiple joints for pain management. Evidence regarding the efficacy of MUA over several sessions or for multiple joints is also lacking and is insufficient to determine whether MUA improves health outcomes; thus, it is considered investigational.

Practice Guidelines and Position Statements
No new published data was identified to change the coverage statement from 2011-2012.

<u>American Academy of Osteopathy (AAO)</u>
The American Academy of Osteopathy (AAO) published a consensus statement in 2005 on osteopathic manipulation of somatic dysfunction under anesthesia and conscious sedation. The AAO states that manipulation under anesthesia may be appropriate in cases of restrictions and

abnormalities of function that include recurrent muscle spasm, range-of-motion restrictions, persistent pain secondary to injury and/or repetitive motion trauma, and is in general limited to patients who have somatic dysfunction which:

1. Has failed to respond to conservative treatment in the office or hospital that has included the use of osteopathic manipulative therapy, physical therapy and medication; and/or;
2. Is so severe that muscle relaxant medication, anti-inflammatory medication or analgesic medications are of little benefit; and/or;
3. Results in biomechanical impairment which may be alleviated with use of the procedure.

U.S. Preventive Services Task Force Recommendations
The U.S. Preventive Services Task Force has not addressed manipulation under anesthesia.

Key Words:
Manipulation under anesthesia, MUA, manipulation under joint anesthesia/analgesia, MUJA

Approved by Governing Bodies:
Manipulative procedures are not subject to regulation by the U.S. Food and Drug Administration (FDA).

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

Current Coding:
CPT Codes:

21073	Manipulation of temporomandibular joint(s) (TMJ), therapeutic, requiring an anesthesia service (i.e., general or monitored anesthesia care)
23655	Closed treatment of shoulder dislocation, with manipulation; requiring anesthesia
23700	Manipulation under anesthesia, shoulder joint, including application of fixation apparatus (dislocation excluded)
24300	Manipulation, elbow, under anesthesia
25259	Manipulation, wrist, under anesthesia
26340	Manipulation, finger joint, under anesthesia, each joint
26675	Closed treatment of carpometacarpal dislocation, other than thumb, with manipulation, each joint; requiring anesthesia
26705	Closed treatment of metacarpophalangeal dislocation, single, with manipulation; requiring anesthesia
26775	Closed treatment of interphalangeal joint dislocation, single, with manipulation; requiring anesthesia

27198	Closed treatment of posterior pelvic ring fracture(s), dislocation(s), diastasis or subluxation of the ilium, sacroiliac joint, and/or sacrum, with or without anterior pelvic ring fracture(s) and/or dislocation(s) of the pubic symphysis and/or superior/inferior rami, unilateral or bilateral; with manipulation, requiring more than local anesthesia (i.e. general anesthesia, moderate sedation, spinal/epidural**).(Effective 01/01/17)**
27275	Manipulation, hip joint, requiring general anesthesia
27570	Manipulation of knee joint under general anesthesia (includes application of traction or other fixation devices)
27860	Manipulation of ankle under general anesthesia (includes application of traction or other fixation apparatus)

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Medical Policy Group, December 2016
Medical Policy Group, July 2018 **(5)**: Updated Code 21073 with referral to Palmetto
Medical Policy Group, March 2020: Added 21073 back to policy effective March 24, 2020.

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.