Spinal Manipulation Under Anesthesia

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Related Policies

Experimental and Investigational Services and Devices

Policy Number	**393**
Original Effective Date:	1/2003
Current Approval Date:	4/23/20
Next Review:	4/2021
Category:	Determination

Policy Statement

Optum* by OptumHealth Care Solutions, LLC considers CPT code 22505, Spinal Manipulation Under Anesthesia, to be unproven and not medically necessary due to insufficient research evidence of safety and or efficacy in the clinical setting when performed for conditions other than vertebral fracture or complete dislocation.

Purpose

This policy serves as the criterion for peer-reviewer decisions concerning spinal manipulation under anesthesia. The policy document summarizes the position of Optum concerning the evidence-basis of services described by CPT code 22505, Manipulation of spine requiring anesthesia, any region.

Key Policy Question

Is there sufficient research evidence of the efficacy and safety of spinal MUA to conclude this intervention is an appropriate therapeutic alternative for a specific patient population?

Summary

Spinal MUA is viewed as *unproven and not medically necessary*. The research evidence concerning spinal MUA is sparse and of very low quality. Any estimate of treatment effect is uncertain. The trade-offs between benefits, and risks and burdens are unclear. Similar conclusions have been reached by many other health care organizations. None of the recently published evidence-based guidelines that were reviewed recommended MUA as a valid therapeutic option for common spinal conditions. Professional groups, who are proponents of spinal MUA, should pursue further investigation using experimental study designs and rigorous methodologies.

Scope

The *scope* of this policy document is limited to those services described by CPT code 22505. According to the *CPT Assistant*, codes having the descriptor "requiring anesthesia" mean requiring general anesthesia. Therefore, use of the CPT code 22505 in conjunction with regional anesthetic/analgesic/steroid/proliferant injection is an inappropriate use of the code. In these instances CPT codes for chiropractic manipulative treatment (98940 – 98942) may be used.

Description

Spinal manipulation under anesthesia (MUA) refers to manipulation of the spine while the patient is under general anesthesia or conscious sedation.

Background

Manipulation under anesthesia (MUA) originated with orthopedic surgeons and osteopathic physicians in the 1930s, and was initially used mainly to treat spinal pain in a single session.[1] MUA was fairly common in orthopedic practices until the 1960s, when improved surgical techniques caused most allopathic physicians to abandon the use of this intervention. Interest in spinal MUA further declined in the 1970s and 1980s, as osteopathic physicians gravitated away from the profession's manipulative roots.

Since the 1960s, chiropractors have come to perform the majority of spinal MUA procedures.[2] The first certification programs for chiropractors began to emerge in the mid-1980s.[1] At present, certification programs are administered by proprietary organizations eg, MUA Certification.com. [http://www.muacertification.com/2018MUAcoursecalendar.html].

There is a plausible theoretical basis for the application of MUA to the axial spine and associated soft tissues.[3] It has been proposed that spinal articular mechanics can be restored by disrupting or stretching adhesions through manipulation, which can be more effectively accomplished with anesthesia to allow for pain inhibition and muscular relaxation.[4-6] The most recent reviews of spinal MUA point out the absence of experimental research, leaving a void of evidence to either substantiate or deny the validity of the principal clinical basis for utilizing spinal MUA.[2,3,7] While patient selection for spinal MUA could be enhanced by knowing more about the fibrotic adhesion concept, there is no research that reliably differentiates those with intra-articular adhesions from other manifestations of segmental dysfunction.[7]

In the absence of evidence supporting spinal adhesion as the primary rationale for intervention, a consensus-based guideline has described the factors qualifying a patient for MUA.[8] These factors are summarized as follows: The patient has been nonresponsive or minimally responsive (continues to experience intractable pain, interference to activities of daily living, and/or biomechanical dysfunction) following a minimum of 4-8 weeks of care using physical medicine procedures, usually including spinal manipulative treatment (SMT); and a continuation of SMT is viewed as necessary to obtain progress, provide interim treatment prior to surgery, or when there are no better treatment options available.[8]

The incomplete development of the relative/absolute contraindications to care represents a significant limitation with current spinal MUA guidelines.[7] Even when individual patients meet all the consensus-based qualifications, the very low-quality evidence for spinal MUA can lead to uncertainty in selection, dosing and patient safety. Although rare, significant adverse events (eg, spinal fracture and hemothorax with spinal MUA for ankylosing spondylitis) have been reported in a literature review.[7]

Literature Review

Search strategy:
An updated literature search was conducted in accordance with the recommendations of the Cochrane Back and Neck Review Group.[9] Biomedical databases searched included MEDLINE, AMED, EMBASE, CINAHL, MANTIS, and Index to Chiropractic Literature. Google Scholar, hand-searched documents, non-indexed documents and texts were included in the search strategy. There were no new studies (randomized controlled trials, cohort and case series) identified that were suitable for quality appraisal.

Evidence extraction and appraisal:
There were no new studies [randomized controlled trials (RCTs), cohort and case series] identified that were suitable for quality appraisal. Information obtained from narrative reviews, consensus documents and texts were incorporated into the policy background section. Previously identified RCTs, cohort and case series studies were subjected to formal quality appraisal. [Table 1]

Table 1. Clinical studies meeting selection criteria for quality appraisal

Author Date	Study Design	Population Setting	Intervention	Co-Intervention
Siehl (1971) [10]	RCT	• 47 subjects • Age range not recorded • Symptom duration not recorded • LBP radiating to one or both legs with signs of nerve root compression • Hospital-based orthopedic clinic	Manipulation (OMT) under general anesthesia	Control Group: • Conservative therapy (muscle relaxants, traction, bed rest, other modes) Experimental Group: • Conservative therapy
Palmieri (2002) [11]	Prospective Cohort	• 87 subjects • At least 18 years • Chronic (symptoms for at least 6 months) LBP • Received at least 4 weeks of nonsurgical treatment • Eligible for insurance reimbursement • 2 community-based surgical centers + 2 private chiropractic clinics	MUA Group: • Intravenous sedation + SMT Non-MUA Group: • SMT • Passive modalities • Home exercises	<u>MUA Group</u> Post-MUA subjects received: • SMT without anesthesia • Physical therapy modalities • Proprioceptive and spine stabilization exercises
Kohlbeck (2005) [12]	Prospective Cohort	• 68 subjects • 18 - 60 years • Chronic (symptoms for >3 months) non-specific LBP with or without radiation • 4-6 weeks of prior traditional chiropractic care • 2 private chiropractic clinics	Medication-assisted Group: • Intravenous sedation + SMT Non-MUA Group: • Traditional chiropractic treatment	Medication-assisted Group: • Traction • Ongoing office visits where traditional chiropractic care was administered
West (1999) [13]	Case Series	• 177 subjects • 17 - 65 years • Mixed spinal complaints • Refractory to short-lever SMT • Ambulatory surgical center	Intravenous sedation + SMT	• Passive modalities (cold packs, interferential, traction) • ROM exercise • Short-lever SMT • Active resistance rehabilitation • Advice and counseling

One RCT, two cohort studies and a single case series were appraised for quality and assistance in answering the key policy question. All studies suffered from very serious methodological flaws that resulted in an overall rating of "very low" (any estimate of effect is very uncertain) quality of evidence. [Table 2]

Table 2. Summary of quality assessment of studies

Author	Design	Quality	Consistency	Directness	Other Modifying Factors	Effect	Adverse Events	Quality Rating
Siehl	RCT	Very serious limitations	No important inconsistency	N/A	Sparse & imprecise data	Favorable	N/A	Very low
Palmieri	Cohort	Very serious limitations	No important inconsistency	Some uncertainty	N/A	No difference	None reported	Very low
Kohlbeck	Cohort	Very serious limitations	No important inconsistency	N/A	N/A	No difference	None reported	Very low
West	Case series	Very serious limitations	No important inconsistency	Major uncertainty	N/A	Favorable	None reported	Very low

Methodology Adapted from the GRADE (Grading of Recommendations, Assessment, Development and Evaluation) Working Group. http://www.gradeworkinggroup.org/

The quality appraisal was incorporated with an assessment of the net benefits vs. risks and/or burdens placed on health care stakeholders to determine *strength of recommendation*. [Table 3] The strength of recommendation upon which the policy statement is based is termed "weak" due to the lack of quality evidence and uncertainty about the balance of benefits vs. risks and burdens. Further research may have an important impact on the confidence in the estimate of effect and may change this policy.

Table 3. Strength of recommendation

Quality of Evidence	Benefits	Baseline Risks and Burdens	Translation	Strength of Recommendation
Very Low	It is uncertain if spinal MUA provides additional benefit beyond that typically achieved by more well-established therapeutic interventions.	There is uncertainty about the estimates of risk and burdens (accessibility, ease of delivery and costs) associated with MUA. There are inherent risks associated with the use of anesthesia and injections that are independent of SMT.	There is uncertainty about translating the evidence into clinical practice settings. Factors likely to impact the effect have not been sufficiently investigated	WEAK: uncertain trade-offs between benefits and risks/burdens. Other alternatives may be equally or more reasonable.

What are the policies and positions of other organizations?

Other health care organizations have evaluated the evidence-basis for MUA and adopted policies and position statements. [Table 4] The consensus of the policies of health care organizations is that spinal MUA is unproven, investigational and experimental. Recently published evidence-based practice guidelines either do not recommend spinal MUA or do not include spinal MUA as an assessed treatment option.[14-17] UpToDate®, a point-of-care evidence synthesis resource, does not include MUA as a treatment consideration for patients presenting with neck or low back pain.[18,19]

Table 4. The policies/positions of other organizations

Organization	Policy Information	Position
BlueChoice Health Plan of South Carolina	• Manipulation Under Anesthesia of the Spine and Joints other than the Knee • CAM 80140 • Accessed 1/23/2020	Spinal manipulation under anesthesia (SMUA) is considered medically necessary for the treatment of vertebral fracture, complete dislocation of the spine, or acute traumatic incomplete dislocation (subluxation) of the spine. Spinal manipulation under anesthesia (SMUA) is considered investigational and not medically necessary for all other diagnoses not listed above.
BlueCross BlueShield of Tennessee	• Manipulation Under Anesthesia (MUA) of the Musculoskeletal System • Accessed 1/23/2020	Spinal manipulation under anesthesia, (e.g. general anesthesia, joint anesthesia, epidural anesthesia with corticosteroid injections) as a treatment for conditions including, but not limited to chronic spinal pain (e.g. cranial, cervical, thoracic, and lumbar) and chronic sacroiliac and pelvic pain, is considered investigational.
Humana	• Manipulation Under Anesthesia • # HCS-0392-014 • Accessed 1/23/2020	In the absence of a documented fracture, complete dislocation, adhesive capsulitis (e.g., frozen shoulder) and/or fibrosis of a joint that may occur following total joint replacement, spinal manipulation under anesthesia OR for manipulation of a joint under anesthesia is considered experimental / investigational. These technologies are not identified as widely used and generally accepted for the proposed uses as reported in nationally recognized peer-reviewed medical literature published in the English language.
CIGNA HealthCare	• Spinal Manipulation Under Anesthesia • # 0276 • Accessed 1/23/2020	Cigna does not cover MUA for the treatment of acute or chronic pain conditions including but not limited to the cervical, thoracic or lumbar spine (e.g., CPT code 22505) because it is considered experimental, investigational or unproven.
UnitedHealthcare	• Manipulation Under Anesthesia • # 2019T0515R • Accessed 1/23/2020	Spinal manipulation under anesthesia is unproven due to inadequate evidence of safety and/or efficacy in published, peer-reviewed medical literature.
Aetna	• Spinal Manipulation Under Anesthesia • # 0204 • Accessed 1/23/2020	Spinal manipulation under anesthesia is considered experimental and investigational. This procedure has not been established as either safe or effective for the treatment of musculoskeletal disorders such as neck and back problems.

Coding Information

Note: The Current Procedural Terminology (CPT) codes listed in this policy may not be all inclusive and are for reference purposes only. The listing of a service code in this policy does not imply that the service described by the code is a covered or non-covered health service. Coverage is determined by the member's benefit document.

Code	Description
22505	Manipulation of the spine requiring anesthesia, any region

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PLAIN LANGUAGE SUMMARY

Spinal Manipulation Under Anesthesia

Utilization Management Policy # 393

Plain Language Summaries are a service provided by *Optum* by OptumHealth Care Solutions, LLC* to help patients better understand the complicated and often mystifying language of modern healthcare.

Plain Language Summaries are presented to supplement the associated clinical policy or guideline. These summaries are not a substitute for advice from your own healthcare provider.

What is spinal manipulation under anesthesia and what is known about it so far?

Spinal pain is a common problem. Traditional treatments that are helpful for some patients with neck, mid, and low back pain include drugs (pain killers, anti-inflammatory drugs, and muscle relaxants), physical therapy, manipulation, and exercise. Spinal manipulation under anesthesia (MUA) is a possible alternative treatment for spinal pain.

MUA requires the coordinated services of both an anesthesiologist and a health care professional (chiropractor, physician, or physical therapist), who is specially trained in using his or her hands to move the bones in the spine while a person is not conscious.

There is disagreement about the role of MUA in treating spinal pain. It is uncertain if MUA helps more than traditional treatments. Most healthcare organizations exclude MUA from benefit coverage.

How was Spinal MUA evaluated?

A work group of clinicians was assigned to review the available research. The internet was searched for policies, guidelines, and articles about spinal MUA. The work group independently examined the research using a broadly accepted method. Possible ratings were high, moderate, low, or very low quality.

Before it was approved, the policy was then presented to a series of committees, who included independent health care practitioners.

What did the work group find?

The research quality was rated as *very low*. It was not possible to make a determination that spinal MUA provided more benefit or less risk, when compared to generally accepted and safe treatments including traditional spinal manipulation. The vast majority of other healthcare companies appear to have reached a similar conclusion.

What were the limitations of the information?

The research on spinal MUA is limited. Only four research studies were considered suitable for evaluation.

What are the conclusions?

Spinal MUA is viewed as *unproven and not medically necessary*. Further research is needed before MUA can be considered an established treatment option for a variety of spinal conditions.

Policy History/Revision Information

Date	Action/Description
7/12/2007	Original effective date
4/10/2008	Annual review and approval completed
9/09/2008	Plain Language Summary rebranded - OptumHealth
1/15/2009	Policy reformatted
4/30/2009	Annual review and approval completed
4/08/2010	Annual review and approval completed
10/26/2010	Policy rebranded to "OptumHealth Care Solutions, Inc. (OptumHealth)"
4/07/2011	Annual review and approval completed
4/19/2012	Annual review and approval completed
4/18/2013	Annual review and approval completed
4/17/2014	Annual review and approval completed; Revised Table 5; Policy rebranded "Optum* by OptumHealth Care Solutions, Inc."
4/16/2015	Annual review and approval completed
4/21/2016	Updated Table 5; Annual review and approval completed
4/20/2017	Updated Table 5; Annual review and approval completed; Legal entity name changed from "OptumHealth Care Solutions, Inc." to "OptumHealth Care Solutions, LLC."
4/26/2018	Annual review and approval completed; Background, Literature Review, Tables and References were revised. No change to Policy Statement.
4/25/2019	Annual review and approval completed; Table 4 and References updated
4/23/2020	Annual review and approval completed; No new evidence was identified that supports a change in policy statement

Contact Information

Please forward any commentary or feedback on Optum utilization management policies to: policy.inquiry@optumhealth.com with the word "Policy" in the subject line.

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