



Name of Policy:**Surgical Interruption of Pelvic Nerve Pathways for Primary and Secondary Dysmenorrhea**

Policy #: 210

Latest Review Date: April 2014

Category: OB/GYN Reproductive

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:

Dysmenorrhea is defined as the occurrence of painful menstrual cramps. Primary dysmenorrhea occurs in the absence of an identifiable cause, while secondary dysmenorrhea is related to an identifiable pathologic condition, such as endometriosis, adenomyosis, or pelvic adhesions. The etiology of primary dysmenorrhea is incompletely understood, but is thought to be related to the overproduction of uterine prostaglandins. Therefore, first-line pharmacologic therapy typically includes non-steroidal anti-inflammatory drugs (NSAIDs), which reduce prostaglandin production. Oral contraceptives are another approach. Patients with secondary dysmenorrhea may be offered NSAIDs or oral contraceptives, as well as a variety of other hormonal therapies. Patients with endometriosis frequently undergo surgery to ablate, excise, or enucleate endometrial deposits or lyse pelvic adhesion. Collectively, these surgical procedures may be referred to as “conservative surgical therapy.”

Uterine nerve ablation (UNA) or presacral neurectomy (PSN) are two laparoscopic surgical approaches that have been investigated as techniques to interrupt the majority of the cervical sensory nerve fibers in patients with dysmenorrhea. Uterine nerve ablation involves the transection of the uterosacral ligaments at their insertion into the cervix, while presacral neurectomy involves the removal of the presacral nerves lying within the interiliac triangle. Presacral neurectomy (PSN) interrupts a greater number of nerve pathways compared to laparoscopic uterine nerve ablation (LUNA), and is technically more demanding. Either LUNA or presacral neurectomy has been performed as adjuncts to conservative surgical therapy in patients with secondary dysmenorrhea.

Policy:

Laparoscopic uterine nerve ablation (LUNA) or presacral neurectomy (LPSN) does not meet Blue Cross and Blue Shield of Alabama's medical criteria for coverage and is considered investigational as a technique to treat primary or secondary dysmenorrhea.

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 member's 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:

Systematic Reviews

A 2005 Cochrane review of surgical interruption of pelvic nerve pathways for primary and secondary dysmenorrhea concluded that, “there is insufficient evidence to recommend the use of nerve interruption in the management of dysmenorrhea, regardless of cause.” The same authors published a systematic review in 2007 that included one additional study in the meta-analysis, for a total of nine randomized trials including 773 women. Eligible studies were prospective, randomized, controlled trials (RCTs) comparing surgical interruption of pelvic nerve pathways to

no treatment or another treatment in women with primary or secondary dysmenorrhea. Studies of secondary dysmenorrhea associated with the use of intrauterine contraceptive devices were excluded. The primary outcome in all the reviewed trials was pain relief, which was measured and reported in a variety of ways. The 2007 systematic review concluded that evidence remained insufficient to determine whether surgical interruption of pelvic nerve pathways is effective. For LUNA, questions remained concerning the durability of the procedure, the risk of anatomical distortion, and the effect on subsequent pregnancies. The authors also concluded that due to the difficulty of PSN and its related risks, this procedure should be performed by a highly skilled surgeon trained specifically in this operation, within the setting of controlled trials and with full disclosure about the potential hazards.

Randomized controlled trials

Conventional treatment plus LUNA versus conventional treatment alone

The 2007 systematic review discussed above identified two trials that compared laparoscopic uterine nerve ablation (LUNA) with diagnostic laparoscopy alone. The smaller trial (n=21) measured pain on a five-point pain scale, and the other study (n=56) used a visual analog scale (VAS). A pooled analysis of these trials found that, at six months or less follow-up, there was no significant difference between groups in pain relief (odds ratio [OR]: 1.43; 95% confidence interval [CI]: 0.56–3.69). However, at 12 months, there was greater pain relief with LUNA (OR: 6.12; 95% CI: 1.78–21.03). These studies included a relatively small number of women, and estimates of effectiveness were imprecise, as evidenced by the wide CIs.

Three trials compared LUNA plus conservative surgery to conservative surgery alone. A fourth trial compared LUNA plus laparoscopic bipolar coagulation of uterine vessels with laparoscopic bipolar coagulation of uterine vessels only for women with uterine myomas. No significant difference in pain relief was found in pooled analyses of three trials after six months or less follow-up (n=190; OR: 1.03; 95%, CI: 0.52–2.02) or of two trials with up to 12 months of follow-up (n=217; OR: 0.77; 95%, CI: 0.43–1.39). There were also no significant differences between groups in quality of life, anxiety, or depression.

Additional trials since the 2007 systematic review have compared LUNA with diagnostic laparoscopy to diagnostic laparoscopy alone. A 2009 study from the U.K. included women who had chronic pelvic pain lasting longer than six months and who had not been diagnosed with moderate-to-severe endometriosis or major pelvic inflammatory disease. Forty-five percent of the sample had some type of visible pathology; 17% minimal endometriosis and 20% had adhesions. LUNA after diagnostic laparoscopy (n=243) was compared to diagnostic laparoscopy alone (n=244) for women with primary dysmenorrhea. The primary outcome was patient-rated pain using a 10-cm visual analog scale (VAS) score. Patients were asked about three types of pain (noncyclical pain, dysmenorrhea, and dyspareunia). At 12-month follow-up, pain data were missing for 51 women (21%) in the LUNA group and 48 (20%) women in the control group; an additional five women in the LUNA group and four women in the control group withdrew consent during the first year of follow-up. At 12 months, there was no significant difference between groups in any of the types of pain or in the worst pain level of any type. There was also no significant difference between groups in any of the pain outcomes when the difference in pain was measured over all time points (outcomes were assessed at three and six months and one, two, three, and five years). The median time in the study was 69 months; 72% of women had at

least five years of follow-up. Note that actual VAS scores for each group were not reported but were represented on figures. Advantages of this study include longer-term follow-up, blinding of subjective outcomes, and randomization after inspection of the pelvis to ensure eligibility.

A 2011 RCT by El-Din Shawki, conducted in Egypt, included women with pelvic pain and excluded those with moderate to severe endometriosis or previous surgery for endometriosis or for pelvic inflammatory disease. A total of 190 women were randomized, 95 to each group. A total of 171/190 (90%) completed the 12-month follow-up. Clinical success was defined as the percentage of women who reported no, minimal or tolerable pain during the follow-up period without hysterectomy or repeated LUNA. At 12 months, the clinical success rate was 63/86 (73%) in the LUNA group and 63/85 (74%) in the control group; the difference between groups was not statistically significant. Moreover, there was not a statistically significant difference between groups in dysmenorrhea and most other efficacy variables. The only statistically significant difference, favoring the LUNA group, was in the rate of dyspareunia

Several RCTs have compared conventional treatment to conventional treatment plus LUNA. The results of these trials generally indicate that outcomes of conventional treatment are similar to outcomes of conventional treatment plus LUNA. This evidence suggests that LUNA does not offer incremental benefit above that of conventional treatment for the treatment of dysmenorrhea.

Conventional treatment plus presacral neurectomy versus conventional treatment alone
No RCTs were identified that evaluated presacral neurectomy (PSN) for treatment of primary dysmenorrhea.

For secondary dysmenorrhea, three trials compared presacral neurectomy plus conservative surgery to conservative surgical therapy alone in patients with endometriosis. A pooled analysis of two trials with 197 women found a significant difference between treatment groups, favoring the PSN group (OR: 3.14; 95%, CI: 1.59–6.21). Two of the trials were published in the early 1990s. The largest and most recent trial published by Zullo and colleagues in 2003, randomized 141 women and included 126 women in the analysis. The primary outcome was the cure rate, defined as the percentage of patients who reported an absence of dysmenorrhea or dysmenorrhea that did not require medical treatment. At six and 12 months, the cure rate for the treatment and control groups was 87.3% versus 60.3% and 85.7% versus 57.1%, respectively. While there was no difference in short-term complications between the two groups, at 12 months, 14.3% of the presacral neurectomy group reported constipation, compared to none in the control group. While the results of this trial are positive, several factors limit its interpretation. All of the surgeries were performed by one physician, which raises questions about whether the results can be generalized. In addition, although the trial reported using an intent-to-treat (ITT) analysis, 15 of the 141 randomized subjects were not included in the analysis.

An updated report on the participants in the Zullo et al. trial found that, at 24 months, outcomes continued to be better in the PSN group and the overall complication rate in the PSN group continued to be higher. The cure rate (absence of dysmenorrhea) was higher for the PSN group (34.4%) compared to the control laparoscopy group (18%). The percentage of women with dysmenorrhea not requiring medical attention was 82% and 65.6% in the PSN and control group,

respectively. However, 11 (18.3%) women in the PSN group had long-term complications consisting of bowel and urinary dysfunction, compared to none in the control laparoscopy group. This high complication rate raises questions regarding the risk-benefit ratio of adding PSN to a conservative laparoscopic therapy.

There is limited clinical trial evidence on the benefit of presacral neurectomy for secondary dysmenorrhea. Some of these trials report that symptoms are reduced to a greater extent with presacral neurectomy compared to conventional therapy alone. However, adverse events, primarily constipation, are also increased following presacral neurectomy. Further RCTs are needed to better define the risk/benefit ratio and the patient population that might benefit from this treatment.

LUNA versus presacral neurectomy

The only randomized study on this topic was a 1996 study by Chen and colleagues that randomized 68 patients to undergo either LUNA or PSN. The procedure was considered a success if there was at least a 50% reduction in pain. While there was no significant difference in the two procedures at six months, PSN was associated with improved pain relief compared to LUNA at greater than six months. However, the incidence of adverse effects was greater with PSN; specifically, 94% of patients randomized to PSN reported constipation.

Summary

The evidence is insufficient to form conclusions on whether laparoscopic uterine nerve ablation (LUNA) improves health outcomes in patients with primary or secondary dysmenorrhea. Studies comparing LUNA to diagnostic laparoscopy alone have not found a consistent benefit for the addition of LUNA to diagnostic laparoscopy. In addition, sample sizes were small in many studies, and there are few studies with follow-up of 12 months or longer.

The evidence on presacral neurectomy for treating primary dysmenorrhea is insufficient; no randomized trials were identified. Only one recent well-conducted trial on presacral neurectomy for secondary dysmenorrhea was identified; this trial found improvement in pain outcomes but also higher complication rates. The net health benefit considering the balance of risks and benefits remains unclear and need to be assessed in additional trials.

Due to the limitations of the available literature and lack of support in specialty society guidelines, laparoscopic uterine nerve ablation and presacral neurectomy are considered investigational for the treatment of primary and secondary dysmenorrhea.

Practice Guidelines and Position Statements

National Institute for Health and Clinical Excellence (NICE)

In 2007, NICE issued interventional procedure guidance number 234 on LUNA for chronic pelvic pain. The guidance states “The evidence on laparoscopic uterine ablation (LUNA) for chronic pelvic pain suggests that it is not efficacious and therefore should not be used.”

American College of Obstetricians and Gynecologists (ACOG)

As of March 2014, a practice bulletin on chronic pelvic pain, issued in 2004, has been archived and is no longer available on the organization’s website or on guideline.gov.

Key Words:

Dysmenorrhea, LUNA, presacral neurectomy, laparoscopic uterine nerve ablation

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. The use of this device for contraceptive management is a group specific benefit.

ITS: Home Policy provisions apply

FEP contracts: Special benefit consideration may apply. Refer to member's benefit plan. FEP does not consider investigational if FDA approved and will be reviewed for medical necessity.

Coding:

CPT codes: **58578** Unlisted laparoscopic procedure, uterus

Conservative surgical therapy includes ablation or excision of endometrial deposits or lysis of pelvic adhesions, typically performed during laparoscopy. Presacral neurectomy may be performed at the time of this laparoscopy.

There is no specific CPT code for laparoscopic uterine nerve ablation or presacral neurectomy. CPT code 58578 (unlisted laparoscopy procedure, uterus) may be used. For secondary dysmenorrhea, presacral neurectomy may be performed in conjunction with either of the following procedures:

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|--------------|--|
| 58660 | Laparoscopy, surgical; with lysis of adhesions (salpingolysis, ovariocytosis) (separate procedure) |
| 58662 | Laparoscopy, surgical; with fulguration or excision of lesions of the ovary, pelvic viscera, or peritoneal surface by any method |

References:

1. American College of Obstetricians and Gynecologists (ACOG). Chronic pelvic pain. ACOG Practice Bulletin no 51, March 2004. Reaffirmed 2008. Available online at: www.guideline.gov.
2. Candiani GB, Fedele L, Vercellini P et al. Presacral neurectomy for the treatment of pelvic pain associated with endometriosis: a controlled study. Am J Obstet Gynecol 1992; 167(1):100-3.

3. Chen FP, Chang SD, Chu KK et al. Comparison of laparoscopic presacral neurectomy and laparoscopic uterine nerve ablation for primary dysmenorrhea. *J Reprod Med* 1996; 41(7):463-6.
4. Daniels J, Gray R, Hills RK et al. Laparoscopic uterosacral nerve ablation for alleviating chronic pelvic pain. *JAMA* 2009; 302(9):955-61.
5. Dover RW, Pooley P, Haines P et al. Prospective randomized double blind controlled trial of laparoscopic laser uterine nerve ablation in the treatment of pelvic pain associated with endometriosis. (Unpublished clinical trial 1999).
6. El-Din Shawki H. The efficacy of laparoscopic uterosacral nerve ablation (LUNA) in the treatment of unexplained chronic pelvic pain: a randomized controlled trial. *Gynecol Surg* 2011; 8(1):31-9.
7. Gambone JC, Mittman BS, Munro MG et al. Consensus statement for the management of chronic pelvic pain and endometriosis: proceeding of an expert-panel consensus process. *Fertil Steril* 2002; 78(5):961-72.
8. Howard Fred and Barbieri Robert L. Chronic pelvic pain in women. www.UpToDate.com. Accessed November 21, 2006.
9. Johnson NP, Farquhar CM, Crossley S, et al. A double-blind randomized controlled trial of laparoscopic uterine nerve ablation for women with chronic pelvic pain. *BJOG* 2004; 111(9): 950-959.
10. Johnson NP, Farquhar CM, et al. Laparoscopic uterine nerve ablation improved non-endometriosis-associated dysmenorrheal but not other types of chronic pelvic pain. *Evidenced-based Obstetrics and Gynecology* 2005; 7: 78-79.
11. Latthe PM, Proctor ML, et al. Surgical interruption of pelvic nerve pathways in dysmenorrheal: A systematic review of effectiveness. *Acta Obstet Gynecol Scand* 2007; 86(1): 4-15.
12. Lichten EM, Bombard J. Surgical treatment of primary dysmenorrhea with laparoscopic uterine nerve ablation. *J Reprod Med* 1987; 32(1):37-41.
13. National Institute for Health and Clinical Evidence. Laparoscopic uterine nerve ablation (LUNA) for chronic pelvic pain. NICE Interventional Procedure Guidance 234. 2007. Available online at: www.nice.org.uk/nicemedia/pdf/IPG24guidance.pdf. Last accessed March, 2014.
14. Nezhat C, Morozov V. Robot-assisted laparoscopic presacral neurectomy: feasibility, techniques and operative analysis. *J Minim Invasiv Gynecol* 2010; 17(4):508-12.
15. Proctor ML, Latthe PM, et al. Surgical interruption of pelvic nerve pathways for primary and secondary dysmenorrhoea. *Cochrane Database System Review* 2005; (4): CD001896.
16. Sutton C, Pooley AS and Jones KD. A prospective, randomized, double-blind controlled trial of laparoscopic uterine nerve ablation in the treatment of pelvic pain associated with endometriosis. *Gynaecol Endosc* 2001; 10(4):217-22.
17. Tjaden B, Schlaff WD, Kimball A, et al. The efficacy of presacral neurectomy for the relief of midline dysmenorrhea. *Obstet Gynecol* 1990; 76(1): 89-91.
18. Vercellini P, Aimi G, Busacca M et al. Laparoscopic uterosacral ligament resection for dysmenorrhea associated with endometriosis: results of a randomized, controlled trial. *Fertil Steril* 2003; 80(2):310-9.
19. Wilson ML, Farquhar CM, Sinclair OJ et al. Surgical interruption of pelvic nerve pathways for primary and secondary dysmenorrhoea. The Cochrane Library, Issue 1, 2004.

20. Zullo F, Palomba S, Zupi E et al. Effectiveness of presacral neurectomy in women with severe dysmenorrhea caused by endometriosis who were treated with laparoscopic conservative surgery: a 1-year prospective randomized double-blind controlled trial. Am J Obstet Gynecol 2003; 189(1):5-10.
21. Zullo F, Palomba S, Zupi E et al. Long-term effectiveness of presacral neurectomy for the treatment of severe dysmenorrhea due to endometriosis. J Am Assoc Gynecol Laparosc 2004; 11(1):23-8.

Policy History:

Medical Policy Group, December 2004 (4)

Medical Policy Administration Committee, January 2005

Available for comment January 21-March 7, 2005

Medical Policy Group, December 2006 (1)

Medical Policy Group, December 2008 (1)

Medical Policy Group, March 2010 (3)

Medical Policy Group, August 2011 (3): Updated Key Points & References

Medical Policy Group, March 2012 (3): Updated Key Points & References for 2012

Medical Policy Group, April 2013 (3): Updated Key Points; No policy change

Medical Policy Group, October 2013 (3): Removed ICD-9 Diagnosis codes; Removed reference to Medical Policy Reference Manual; no change to policy statement

Medical Policy Panel, April 2014

Medical Policy Group, April 2014 (3): Reworked Key Points but no new information added; no new references; no additional info from literature; 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.